"It ripples through, it's like a dropping stone into a pond…the ripple effect is huge": Food insecurity and health: Insights from women, children, and frontline workers

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Abstract

This doctoral study is set within the context of a global financial crisis and a pandemic within which food insecurity and the parallel landscape of emergency food aid have expanded. Food security is built on four pillars: access, availability, utilisation, and stability. This doctoral study aimed to explore food insecurity and its health impacts amongst women and children; groups more vulnerable to experiencing food insecurity. Multiple qualitative methods were used including a researcher-in-residence model within a local authority's public health team in North East England, a meta ethnography of European studies and longitudinal serial interviews. Across qualitative methods, I explored: (1) using a partnership approach in public health research; (2) the experiences of food insecure European women and children and their nutritional health and wellbeing, and (3) the emergency food aid landscape as it navigated a rapidly changing public policy landscape during a pandemic through the experiences of frontline workers. The critical syntheses presented uncover lives that are fraught with negotiating access to food daily, accompanied by adverse physical, psychological, and social experiences. The voices missing are those of pregnant women who are experiencing food insecurity. Underpinning these experiences was inadequate income and a lack of a sufficient 'safety net' to meet basic cost of living needs, thus resulting in reliance on food aid. Further, the COVID-19 pandemic accelerated and diversified the need for food aid whilst also exposing the food aid system's fragilities, raising questions of whether it is 'fit' for purpose. Findings emphasised a social dimension to the experience of food insecurity. Therefore, this thesis puts forward a fifth pillar to the concept of food insecurity – social acceptability. Policy and practice recommendations outlined prioritise social acceptability to improve access to healthy food for women and children.

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Abbreviations

BDA – British Dietetic Association

CASP - Critical Appraisal Skills Programme

CCG – Clinical Commissioning Groups

COVID-19 – Coronavirus disease 2019

DOHaD – Developmental Origins of Health and Disease

ER – Embedded Research(er)

FAO – Food and Agriculture Organisation

FEBA – European Food Banks Federation

FMS – Faculty of Medical Sciences

HIC – High Income Countries

HSV – Healthy Start Vouchers

HFSSM – Household Food Security Survey Module

IFAN – Independent Food Aid Network

IMR – Infant Mortality Rate

LIDNS – Low Income Diet and Nutrition Survey

NDNS – National Diet and Nutrition Survey

NHS – National Health Service

OECD - Organisation for Economic Co-operation and Development

PICOS – Population, Intervention, Comparison, Outcomes and Study

PIS – Participant Information Sheet

PO – Participant Observations

PROSPERO - The International Prospective Register of Systematic Reviews

QES – Qualitative Evidence Synthesis

QLR – Qualitative Longitudinal Research

RiR – Researcher in Residence

SACN – Scientific Advisory Committee on Nutrition

SWS – Southampton Women's Survey

TA – Thematic Analysis

UC – Universal Credit

VCS – Voluntary Charity Sector

WHO – World Health Organisation

CHAPTER ONE

1 Chapter one: Introduction

1.1 Study context

Food insecurity is defined as *'when people do not have adequate physical and economic access to sufficient, safe and nutritious foods that meet their dietary needs and preferences for an active and healthy life'* [1]. In the UK and Europe it has been an emerging major public health and social issue since the global financial crisis of 2008 when more households have become food insecure [2]. The World Health Organisation (WHO) recognise that a healthy balanced diet is an important factor for physical and mental health, therefore food insecurity can adversely impact the health and wellbeing of those experiencing it [3]. Furthermore, in high-income countries (HICs), food insecurity is rarely due to food supply issues alone. Rather, the causes of food insecurity in HICs are poverty, unemployment and low-income [4-6], thus being food insecure tends to be experienced by people in the least affluent groups of society. Pre-existing health and social inequalities that contribute to food insecurity were exacerbated during the COVID-19 pandemic [7]. Lockdown and social distancing measures imposed by government impacted access to food, especially for those most economically vulnerable. School closures consequently reduced income for households as they lost childcare, and children lost out on access to hot free school meals (FSM) [8, 9]. Families who were teetering on the edge of just managing were pushed into food insecurity, thereby experiencing hunger and reduced food consumption creating an inability to secure food of sufficient quality and quantity to enable good health and participation in society. Consequently, many households relied on emergency food aid services to support their families [10]. Although the food aid system has grown and adapted over the years to meet increasing demand, a critical examination of the system begins to raise questions over its effectiveness and sustainability. The reality faced by millions of families today in 2022 remains bleak as food prices reach a 40-year record high alongside rising energy and fuel prices, [11, 12] and likely to only increase over the coming months. Particularly vulnerable are families with young children, pregnant women and lone parents, the majority of which are women [13].

Addressing food insecurity is now a public priority in the UK, with media attention giving the issue a spotlight during the pandemic after footballer Marcus Rashford spoke of his personal childhood experiences of food insecurity [14]. From a health inequalities perspective, the Marmot Review, 10 Years On, recognises the importance of the early years and giving every child the best start in life [15]. It recommends putting health equity and wellbeing at the heart of policy to ensure a healthy standard of living for all, thereby reducing food insecurity. The

2021 National Food Strategy also set out key recommendations including access to healthy and affordable food by everyone [16]. At the international level, the world continues to strive towards achieving the United Nations sustainable development goal two: End hunger, achieve food security and improve nutrition and promote sustainable agriculture. Specifically, this goal can be broken down into target 2.1, ensuring access to safe, nutritious, and sufficient food for all people all year round, and target 2.2, eradicating all forms of malnutrition [17].

1.2 Why a focus on women?

This thesis set out to explore women's lived experiences of food insecurity, with a particular focus on the first 1001 days of life (although it was later expanded to include children up to 18 years of age). At its very basic level, food insecurity affects women more than men. [18]. Briefly, there exists established gender inequality in health and wellbeing, whereby women live longer than men but with greater years in ill-health [19]. Health during working years is also lower for women and the health of mothers is a particular issue – not just for them but for their children. There are three broad interlinked explanations including biological, social, and economic which draw on the wider literature of gender differences in health [19, 20].

A biological explanation is that women (of child-bearing age) have more complex nutritional needs than men due to their menstrual cycle, pregnancies, and breastfeeding [21, 22]. This needs special consideration [18] as for women who go on to become mothers pre-conception maternal health is strongly linked to pregnancy outcomes and also crucial for health across generations [23]. This relationship tends to be articulated as the importance of nutrition during the first 1001 days of life (conception, pregnancy to two years of age) [24]. Pregnancy is also a period with additional nutritional demands on women so adequate nutrition is important for women's health preconception, during pregnancy and in the postnatal period. Food insecurity during pregnancy can significantly increase the risk of adverse pregnancy outcomes including, but not limited to, gestational weight gain, gestational diabetes, and early deliveries [18, 25]. This introduces a double-burden of health impacts to both the mother and new child. However, how food insecurity is experienced during the first 1001 days represents a gap in the European literature.

Another explanation for focusing on women comprises social factors linked to constructions of work-family roles. Mothers face the dual burden of employment and caring, and are more likely to work a *'double shift'* in the public and domestic sphere [26]. Thus, they tend to miss out on benefits from the labour market such as higher status and higher paid jobs [20]. This makes

mothers more vulnerable to experiencing food insecurity and its health impacts. An economic explanation for focussing on women's experiences of food insecurity lies in the recognition of how women are unfavourably hit by socio-economic factors such as higher poverty, a history of lower education attainment, discrimination in the labour market, and lower employment rates [19]. Women are also more likely to head lone parent households [19]. These factors mean women and mothers are more likely to experience poverty [27], a cause of food insecurity. It is, therefore important that we understand how food insecurity effects women's health.

1.3 Researcher reflexivity

Unbeknown to me, my personal journey to this project began eleven years ago whilst undertaking my Biomedical Sciences undergraduate degree at Southampton University. It was then that my interest in maternal and child health and nutrition began by opting to leave the labs and study nutrition in heath and disease and maternal, fetal, and neonatal physiology in my final year. This interest spilled over into a dissertation on 'maternal obesity, fetal adiposity and omega-6 PUFA epigenetic regulation'. I continued to follow my interest in nutrition and women's health when I moved to Surrey University for my masters in human nutrition. Collaborating with a supervisor at Roehampton University, my dissertation recruited over 100 women to complete a survey and diet-diaries to explore 'the knowledge and barriers towards a healthy lifestyle among women with polycystic ovary syndrome'. It was at this point, I entered industry working as a clinical research assistant supporting the delivery of clinical trials. I worked on a range of phase one trials including cancer drugs, sleep drugs, nutraceuticals, and antiretroviral drugs. My role involved recruiting and screening people onto trials, collecting clinical data during trials, writing standard operating procedures for the centre and source documents for new trials. I also co-managed the running of a sleep service that screens National Health Service (NHS) patients for sleep disorders. This role developed skills essential for conducting a PhD like ensuring timely delivery of projects, communicating effectively with a range of stakeholders and scientific writing. Alongside this I actively volunteered as a dietetic support volunteer in the UK and had a three-month expedition in Malawi, with the primary responsibility of delivering interactive sessions to both children and parents on sexual reproductive health and rights. However, at this point I knew I wanted to pursue a PhD. I had cultivated a strong appreciation for the importance of nutrition in changing physiology and particularly the effects that malnutrition has on physical and mental wellbeing. I wanted to embed a social determinants perspective into my nutrition research. For that reason, I looked to pursue a PhD at the Population Health Sciences Institute, Newcastle University as I believed that the ESRC Doctoral Training Program at Newcastle University was the best place to pursue

my research goals given the significant staff expertise in nutrition and health inequalities. Even though it was difficult at times to transition into the social sciences aspect of nutrition and health, I learned to embrace it and the qualitative process. It has been that process that has ultimately allowed me to weave together different threads of knowledge throughout this thesis. This PhD was already a timely project at the time of writing a funding application in 2017 given the context of austerity in the UK. However, at the time of researching and drafting this thesis the aforementioned repercussions of the COVID-19 pandemic had further confirmed the scientific and wider societal importance of this work. Further, during the editing and finalising stages the ensuing 'new' crisis of cost of living, Brexit and the implications of war were apparent.

1.4 Research aims and objectives

Against this broad background introducing food insecurity, health and the vulnerability of women and children to experiencing food insecurity, is the overall aim of this doctoral work:

To explore food insecurity and its effect on health amongst women and children.

To answer this overarching aim are a number of smaller aims coupled with specific objectives:

1. *To explore the lived experiences of food insecurity in relation to its impact on nutritional health and wellbeing amongst women and children (chapters five, six, seven)*

- To systematically identify relevant qualitative literature on women's and children's experiences of food insecurity and its impact on their nutritional health and wellbeing whilst living in European HICs
- To assess the quality of this existing evidence base
- To synthesise and integrate qualitative data identified
- To evaluate the findings in order to inform recommendations for public health policy, practice and future research

2. *To explore the nature of food insecurity within a changing public policy landscape (chapters eight and nine)*

- To recruit frontline workers of the emergency food aid system in North East England region to take part in qualitative interviews

- To conduct remote serial interviews with frontline workers during the COVID-19 pandemic
- To analyse this qualitative data thematically

3. *To critically interrogate employing a researcher-in-residence model approach within a local authority trying to address food insecurity (chapter four)*

- To understand the local authority as an area, the food aid system, and wider networks
- To build relationships with people in the food aid system, and wider networks
- To understand how local authorities make decisions and how evidence is used to influence public health policy

This research was carried out in collaboration with Gateshead Council's public health team, who were interested in exploring how food insecurity was affecting women and children's health in their town, with a particular focus on the first 1001 days of life. Their role as a collaborator involved facilitating a researcher-in-residence position during the early stages of my PhD, providing assistance with access to local people in the town, providing access to those in the civic centre with knowledge of ongoing projects concerning food insecurity, poverty and maternal and early years, and access to relevant information to assist dissemination of project findings.

1.5 Thesis chapter outlines

This thesis is structured into eleven chapters. In this chapter (chapter one), the study context is introduced, as are the overarching research aims and objectives. It also presents the rationale for focussing on women and mothers, alongside a reflection of my personal journey as a researcher towards undertaking this research. Chapters two and three provide the necessary context for this research. Chapter two will explore the historical and political context of poverty highlighting how food insecurity and food aid is not new but has been present throughout the UK's history. It will then discuss the development of welfare support in relation to food insecurity and how adopted ideologies, like neoliberalism, have arguably worsened support for women and children. Chapter three will present a review of the literature which includes an exploration of the concept of food insecurity, a description of its prevalence and underlying social determinants, the response to this issue, as well as an exploration of food insecurity its relation to nutritional health and wellbeing. Chapter four describes the progress of the PhD's

original project, prior to the impact of COVID-19. It details the use of a researcher-in-residence approach to partnership working with a local authority alongside my reflections on this process as a PhD student. It then describes the methodological challenges confronted due to the pandemic, with detailed discussion of the options considered to try to mitigate these challenges and adapt the research plan. Chapter five explains the methodological approach to using a qualitative evidence synthesis (QES) and meta ethnography, whilst outlining the review protocol. Chapters six and seven present the review findings for food insecure women and children living in European HICs, respectively, with detailed discussion of those findings. Chapter eight outlines the philosophical approach to the third research project (qualitative interviews with frontline workers) and how this translated into the research methods employed. A rationale is provided for the approach to sampling, recruitment, data collection, analysis, and interpretation. This chapter also reflects on some of the ethical challenges in conducting research during a pandemic and longitudinally. Chapter nine, the final results chapter, introduces the nine participants who took part in the qualitative longitudinal project. It then presents the analysis of qualitative data from interviews with frontline workers of the emergency food aid system, exploring their experience and perceptions of food insecurity during a rapidly changing public policy landscape. Chapter ten, the discussion chapter, starts by summarising the contribution from each findings chapter before it draws the findings together to present three overarching themes within the context of the wider literature. The strengths and limitations of this doctoral research are also discussed. Chapter eleven concludes this thesis, starting with future research, policy and practice recommendations stemming from this research. It then outlines plans for dissemination of this research and concludes with final thoughts.

CHAPTER TWO

2 Chapter two: History of the welfare state, poverty, and health

This chapter chronologically moves through the historical and political context of poverty highlighting how food insecurity and food aid has been present throughout the UK's history. Starting from the 11th century it goes on to capture up until the pandemic when the doctoral research was conducted, and this thesis was written.

2.1 Medieval and Tudor Times (11th- Early 19th Century)

The idea of a welfare system dates to the early 11th century when it was viewed as poor relief [28]. The poor were viewed as a charitable concern with support coming from monasteries, Churches, neighbours, friends, and hospitals [29]. The dissolution of monasteries by King Henry VIII in 1536 meant aid was no longer available to the poor, leading to an increase in the number of beggars and those in extreme poverty [28]. Rhetoric shifted between 1536 and the Elizabethan Poor Law of 1601 when a series of laws introduced by Parliament between these times focused on punishment. The label *'study vagabonds'* and *'lazy'* was given to able-bodied persons without jobs or begging, with laws passed to enable whipping of this group of people [28].

In 1572 the National Poor Law Tax recognised that the poor were society's collective responsibility, not just the churches, and so introduced a tax to raise funds for their provision [30]. Poor citizens were classified into three categories: the able poor who would work; the able poor who would not work; and the poor who could not work, including children [28]. Categorisation meant that those who could and would work were provided *'outdoor relief'*, assistance in their own homes. The ill, elderly and children were given *'indoor relief'*; being taken indoors in alms-houses. Those who would not work received punishment in the form of whippings [28]. Each parish appointed an official to register those who were in need of relief (i.e., poor or unwell) and distribute relief to them [30]. This political rhetoric and action is seen again throughout the evolution of the welfare state.

This organised response to poverty in Britain went on to form the Elizabethan Poor Law of 1601 [31]. Elizabeth's Government legislated categories of poor, this time categories were labelled as the *'impotent poor'* (cannot work) who came from alms-houses, the *'able-bodied poor'* who were given work in workhouses by parishes, the *'idle poor'* (vagrants/ beggars) who were punished, *and 'poor children'* who became apprentices [28]. Concern was raised over how far charities could go in providing poverty relief, and the idea of creating a pauper population was raised; that is creating a population who are in receipt of poor relief or social security, something which is being debated again today [31].

2.2 A century of workhouses (1834-1930)

Between 1760 and 1840 Britain was in the midst of the First Industrial Revolution. This brought huge economic change, transitioning from agriculture to new manufacturing processes resulting in mass migrations from rural areas to urban cities. Despite the economic boom of the UK, social growth lagged behind and negative consequences were felt. Wages were low, jobs were insecure, working conditions were dangerous [32]. Environmental conditions outside of factories were also unfavourable; a combination of large masses of people living in close proximity to one another and to sewage and a lack of clean water to maintain basic hygiene resulted in the spread of infectious diseases such as cholera, tuberculosis, typhoid, typhus and smallpox [31].

The Poor Law Amendment Act 1834 was established to support those out of work with the aid of workhouses. Workhouses were prison-like condition housing for people unable to work, perhaps due to illness, injury or old age (these were later abolished in 1930s [31]). Despite minimal provision of food, families (that were split in male and female sections) had to complete physically demanding jobs [31]. Concurrently, government re-centralised poor relief and enforced national assessments of need. Providing undesirable support for the poor matched rhetoric that it provides an incentive for people to get jobs in the *'real economy'*, as though people preferred to live in the squalid conditions of the workhouses; signs of stigma against the poor [33]. Governments' neglect here fringes upon the myths of a culture of poverty, that poor people are unmotivated and have a weak work ethic [33]. This type of political message can arguably be re-seen within austerity Britain 2010-2017 (section 2.6) and more widely neo-liberal politics [34, 35]. Nevertheless, the centralised administration of the Poor Laws did reduce poverty rates despite a growing population and the government of the time reducing poverty relief spending [31].

In the Victorian era, debates over social and public health policies began, putting pressure on government to make major changes for better population health. Social policy is *'a term used to refer to the actions taken within society to develop and deliver services in order to meet the needs for welfare and wellbeing'* [36]. Social policy today focuses on education, employment, and housing; whilst public health policy covers agriculture and food production, work environments, water and sanitation. Social and public health policies in addition to healthcare services make up the welfare state created post-World War Two [37]. In 1848, the Public Health Act was introduced [38]. This created a central board of health and made local authorities responsible for ensuring hygienic water supply and proper drainage that local taxes would pay for. It also paved the way for other policies, such as; government food inspections 1860, the

1869 Factory Act putting restriction on child labour, national vaccination programmes for small pox 1870, second Public Health Act 1872 and a third Public Health Act 1875, expanding local authorities responsibilities to include lighting, water supply, sewage disposal, parks, toilets and housing [31]. In 1906, FSM began to be offered to the most deprived children in some parts of the country and by 1944 local authorities legally had to provide a nutritious meal, with universal free milk introduced in 1946 [39].

A shift in attitudes helped transform politics towards providing a basic minimum security for citizens, thus in 1911 the National Insurance Act was introduced [36]. These were highly selective social insurance payments that provided basic pensions, unemployment and sickness benefits for those that had contributed to the system [36]. This meant that those who hadn't contributed to the system were excluded; the majority of whom were women. Policy at that time reflected male employment patterns as the typical family unit model was single earner, male breadwinner in full-time employment. A woman's responsibility was to run the house or provide eldercare, and as a mother childcare. These jobs were not valued in economic terms, reinforcing gender roles [40]. However, introduction of the Public Health and National Insurance Acts improved life expectancy for both males and females. Males born in 1841 could expect to live until 40.2 years and females to 42.3 years. Improvements in public health measures reduced mortality rates, and increased life expectancy to 56 years for males and 59 years for females by 1920 [41].

The global economic crises of the 1930s meant unemployment rates rose in the UK. This meant more people needed financial support from poor law relief. The then prime minister introduced means-testing to qualify for poor law relief which involved a thorough investigations of an individual's finances [42].

2.3 Post-World War II consensus period (1945-1979)

During the height of World War II, a social democratic politician named William Beveridge was appointed by government to determine what kind of Britain the British public wanted to see post war. Beveridge led the evolution of the welfare state to how we most commonly know it. In history, this is now seen as the first phase of the welfare state. In its origins the welfare state was a widely accepted principle based on being primarily state funded through a single contribution and its inclusivity of the whole population with cradle-to-grave public universalism through its wide range of services [43]. The welfare state encompassed the provision of key services and social transfers including the state's role in education, health, housing, poor relief, social insurance, and public health policy [44]. Key services were delivered from government as well as independent, voluntary and autonomous public services.

The Beveridge report, released in 1942, was the first of a few major landmarks in the history of health in Britain. Entitled *'Social Insurance and Allied Services'* the report identified *'five giants'* inhibiting social progress; Want, Disease, Ignorance, Squalor and Idleness [45]. Beveridge's report provided a basis for universal programmes of social security, full employment, health, education and housing, funded through much higher levels of taxation [46]. This was to put an end to the *'five giants'* so that the UK could socially reconstruct and progress post war [45]. Policies implemented included The Butler Act 1944 of state education until the age of 15, a commitment to full employment in 1944, The Family Allowance Act 1945, The Nursery milk scheme 1946, The National Insurance Act 1946 with public housing and assistance schemes and The National Health Act in 1948 introducing the NHS [43]. Beveridge used this opportunity to deepen and universalise the welfare state, extending the powers and operations of the state to minimise inequality. Beveridge stated that benefits should be set above the minimum need for subsistence, using Rowntree's poverty line as guidance [32]. Seebham Rowntree's poverty line denotes a minimum standard of necessities for life inclusive of a calorie intake, for example, fuel, rent, electrics [32]. Further, the principle of equality led Beveridge to introduce the NHS, a tax-paid health service free at the point of use. It was a key part in designing a universal, equitable welfare system. To create an equitable welfare state meant an increase in the level of public spending and taxation [46]. Concurrently, there was political debate about the affordability of the welfare state and debate about the limitations of its policies [47]. In other words, can the welfare state adapt to the changing world and circumstances. Despite policies being introduced to combat the five giants, many people were still living in poverty in Britain [48, 49].

The UK's welfare state did not alter much over the 1950s and 1960s, due to political co-operation and consensus, referred to as the *'golden age'* of welfare state capitalism [50]. During a speech at a Conservative rally, then Prime Minister Harold Macmillan said that the British public *"… have never had it so good"* ([51] pg. 1). The *'golden age'* welfare state capitalism was characterised by centralism, universalism, redistributive policies, full (male) employment, high public expenditure, and the promotion of mass consumption via a more distributive tax and welfare system [52]. Life expectancy increased rapidly between 1940-60s, with slower growth from the 1960s onwards [53]. The difference between male and female life expectancy increased between 1940 to the 1970s, peaking in the 1970s, with females living on average 6.3 years longer [53].

2.4 Thatcher – Neo-Liberalism (1979-1997)

The *'golden age'* welfare state eroded with the onset of the 1970s economic crisis fuelled by rising oil prices in combination with high inflation and unemployment. What followed in 1979, was Margaret Thatcher winning the general election for the Conservative party [54] and introducing radical changes to reverse Britain's economic decline. This second phase of the welfare state in history then is a shift away from Keynesian state capitalism ideology that focused on mixed economy, a large public sector, and fiscal policies to a neo-liberal workfare state capitalism ideology [55]. A neo-liberal workforce state capitalism focuses on maximising economic growth and boosting profits and investment. It is characterised by privatisation and marketisation of welfare state services and deregulation of the private sector [55]. Neoliberalism is best understood as having multiple dimensions including set programmes of policies i.e., welfare state retrenchment and *'workfare'*, prioritisation of markets as a way of organising all human interactions i.e., contracting out services and privatisation as an ideology [56, 57]. Critically, neoliberalism does not mean the state is shrinking rather only some chosen areas are, like social security, whilst other areas like surveillance of benefit claimants or policing are intensifying [56].

This second phase of the history of the welfare state revived political views from the Tudor times in the 1970s, views that the welfare state was too generous and should be cut back [58]. Economists argued that the public sector was *'unproductive'* and reliant on the *'productive'* private sector for paying its wages [58]. Yet, this argument took no account of the social benefits of the welfare state to society, as set out in earlier sections of this chapter. The Right argued that increasing number of claimants and dependency would inevitably lead to financial crises, with the government's first White Paper on public spending stating that *'Public expenditure is at the heart of Britain's present economic difficulties'* ([59] pg.1). Thatcher, therefore, tackled the recession by raising taxes and decreasing government spending; the chancellors' 1980 budget stating that strikers' families would have £12 a week cut from their family benefits, that short term sickness, disability and unemployment would also be made subject to tax and even state pensions would suffer [60]. Thatcher did not abolish the welfare state completely, rather she diminished it so that social security could only be for the very poor with increased means-testing, as such viewing the welfare state as poverty relief [61].

Thatcher's individualistic vision of society was exemplified in her political choices and words, *"…there is no such thing as society: there are individual men and women, and there are families"* ([62] pg.1). Thatcher viewed the welfare state as sapping some of the working class's drive to work; her policies driven by a view to reward the bourgeois class for their self-reliance

and charity to the other classes [63]. For example, the term *'workfare'* describes the obligation of the unemployed to participate in employment programmes to *'earn'* their benefits via compulsory training programmes or voluntary work for charities [63].

This political shift towards neo-liberalism meant focus shifted from manufacturing industries that had higher costs, towards banking and financial services [56]. Anti-trade union laws meant working hours, conditions, pay, and contracts all became more precarious, with trade unions having very restricted rights [56]. Deindustrialisation entrenched a North South divide, a divide acknowledged as early as 1854 [64]. Manufacturing was focused in the North of Britain, so their closure led to mass unemployment in the North whilst this shift increased job opportunities in the South [56]. In 1991, the finance minister at the time, Norman Lamont, said from the despatch box in Parliament "*rising unemployment and the recession have been the price we have had to pay to get inflation down. That price is well worth paying"* ([65] pg.1) Later in 1998, Eddie George, Governor of the Bank of England stated in an interview "*northern unemployment is an acceptable price to pay for curbing southern inflation*" ([66] pg.1). The lack of value placed on North of England, as though a political afterthought to the South of England, is echoed through other political decisions that exist even today.

The *'work-for-benefit'* style of employment of the 1980s is problematic because its benefit limits and sanctions affected women the most [40]. Despite the welfare state adopting a dual worker model in response to women's rights groups – that is it acknowledged that both the males and females within the household may work [40], it facilitated maternity provisions and collective care services that enabled more women to work, albeit there were still barriers to employment for women and unequal pay from work [40]. Firstly, there was not any equivalent re-balancing of the caregiving role or roles within the home. As a result, women were expected to do it all, and so occupied most of the low-pay, part-time occupations [40]. Further, Thatcher's government affected children's health and wellbeing by deciding to end free milk for children in 1980s and privatise FSM without nutritional regulations, meaning there was no standard, resulting in cheap, rather than nutritious meals [39].

The second landmark for the history of public health came in 1980. Despite a generation of access to free health care under the NHS established in 1948, health inequalities between the rich and poor still existed. To investigate this, the then Labour Government commissioned The Black Report in 1977 [67]. The report argued that differences in health were due to social determinants of health. This means that health and illness are influenced by factors other than access to healthcare and quality of care, but the conditions under which people are born, grow to adulthood, live, work and grow old [68]. It concluded that there were marked differences in

mortality rates between the occupational classes, for both sexes and at all ages. It also stated that inequalities exist also in the utilisation of health services, particularly and most worryingly of the preventive services [67]. The Black Report put health at the centre of programmes for welfare and social reforms, making 37 recommendations focusing on child health, the elderly, primary care, nutrition and smoking [67]. In 1980, The Black Report was presented to a Conservative administration, yet the Secretary of State for Social Services at the time deemed the recommendations *'unrealistic'* and the report was not reviewed again until 20 years later [69]. Unintentionally or not, through the goal to produce a stronger more profitable economy and powerful country, New Right neo-liberal politics created greater health inequalities, something that would go one to be termed a *'neoliberal epidemic'* [56, 70].

2.5 New Labour (1997-2010)

Health was a prominent issue in the campaigns leading up the election of Tony Blair as Prime Minister in 1997. Tony Blair's era encompassed the third phase of the welfare state which shifted from neo-liberalism to a social investment paradigm. This meant the welfare state focused on life course transitions and universal safety nets with minimum incomes to ensure social protection and economic stabilisation [71]. During this period, in 2006, the Healthy Start scheme replaced the Welfare Food scheme introduced in 1940. The Healthy Start scheme provided vouchers as a benefit-in-kind, available for low-income pregnant women and families with children under four years of age to access cow's milk, fresh fruit and vegetables, infant formula, fresh, dried, and tinned pulses, and free vitamin supplements [72].

When Labour was elected, they immediately actioned The Acheson Report 1998 [73], to implement a national health inequalities strategy in the 2000-2010 period. Nearly 20 years on from the Black Report [67], The Acheson Report argued continued persistence of health inequalities as in The Black Report, although psychosocial theories were an additional feature as a potential determinant of health inequalities [74]. This English health inequalities strategy was a first for any European country. The strategy included activities to be delivered at national level (e.g., increase in NHS budgets particularly in more deprived areas, Sure Start children's centres) and locally (including Health Improvement Programmes, Health Action Zones, Healthy Living Centres) [31]. A national public service agreement was also set up to tackle health inequalities targets, such as life expectancy and infant mortality gaps, between the 20% most deprived local authorities (so-called Spearhead areas) and the English average by 10% [31]. These reductions in health inequalities were broadly achieved by 2010 [75]; life expectancy increasing between 2002 and 2010 for females and males in the vast majority of communities in the UK [76].

The reduction and elimination of child poverty was another of New Labour's key objectives [77]. Indeed, between 2007 and 2013 relative child poverty and infant mortality rates declined [78]. During New Labour's government society's family model was changing with 20% of children living in lone parent families in 1997 compared to 12% in 1979 [31]. A key policy change under New Labour Government was the 1997 New Deal for Lone Parents that meant lone parents were for the first time could opt into a voluntary scheme to seek employment [79]. Lone parents were offered support and advice in seeking employment. Moreover, any new lone parent claimants would be required to attend a work-focussed interview to discuss their potential employment options [79]. This was a significant policy shift to supporting lone parents to enter the labour market. Less supportive were lone parent obligations introduced in 2008, in which lone parents lost entitlement to income support, based on the age of their youngest child, solely because they were a lone parent [80] . In 2012, the age of the youngest child was lowered to five years old [80].

2.6 Austerity Britain (2010-2020)

The fourth stage of the welfare state is one of austerity. Austerity is a set of policies introduced by government to reduce government debt. Austerity Britain was a response to the 2008 recession fuelled by the global financial crises of 2007. Whilst Britain was not as affected as the Eurozone by the financial crisis or subsequent recession, the UK embarked on a programme of austerity [81]. A comparative European study found that the UK's austerity policies were the third largest in Europe behind Greece and Luxembourg [81]. The government argued that there was no alternative to austerity, but by contrast, Germany, Poland, and Sweden increased government spending to help the economy recover [81]. Historic evidence from the post-World War II period demonstrates there is an alternative too, although that era's labour market was very different to 2008. Section 2.3 reflects on the post-World War II approach and the following *trente glorieuses* era. The programme of austerity in Britain in response to the 2008 recession comprised three components: a stagnant economy (i.e., no economic growth), public spending cuts to local government and public service reforms to the tax and benefit systems. The combination of cuts to public expenditure and increased taxes thereby reduces national deficit.

Austerity policies introduced impacting women [82] are listed below.

2011:

- Changes to housing benefits with a maximum rent introduced
- Child benefit frozen for three years rather than rising with inflation
- Local authority services cut including youth centres and libraries

- £190 one-off payment for women who are at least 25 weeks pregnant and meet eligibility criteria, abolished
- Government cuts any contribution to a child trust fund
- £500 Sure Start maternity grant now only provided for first born child

2012:

- Introduction of the bedroom tax for social houses deemed to have a 'spare' room reducing housing benefit by up to 25%
- Universal Credit (UC) announced, a reform replacing six working-age benefits with one
- Benefits for households capped so benefits could not be higher than average wages
- More punitive penalties for benefit fraud

2013:

- Cuts to covering the council tax for households with benefits payments
- Child benefit no longer given to households with a person earning more than £50,000
- Legal aid cuts reducing the number of people getting help in benefit cases

2014:

- Rollout of UC begins

2015:

- Children's centres begin to close

2016:

- Benefits frozen for four years instead of rising with inflation
- National Living Wage implemented

2017:

- Two-child tax credit cap introduced for children born on/after 6th April 2017

2018:

- Welfare spending reduced by almost 25% since austerity

Alongside these austere policies has been the steady increase in hunger and food insecurity. A study examining the trends in food insecurity across welfare states found that food insecurity has risen since the 2008 crisis, with a significant rise in the UK and across Europe [4]. The steepest rise in food insecurity occurring in welfare states like the UK's (liberal regime) [4].

Thus, in 2011, FSMs were extended to support more children and in 2014 the scheme was made universal for children in key stage one (reception, year 1, year 2) [39]. In 2017 the government announced a £2 million funding pot for pilot projects responding to holiday hunger [83]. Whilst in 2018 Philip Alston, the UN special rapporteur on poverty and human rights shared his report on the UK that found the government responsible of systematically cutting back the social security system that's existed since Second World War with '*a harsh and uncaring ethos'* leading to *'tragic consequences'* [84]. In 2019, the government agreed to introduce the UK's first ever measure of food insecurity as part of the Family Resources Survey [85] see section 3.3. Accompanying the rise in food insecurity and food aid was a discourse of individualised responsibility and moral judgments stemming from false representations of the poor [35]. Political and media rhetoric of '*shrivers and scroungers'* or *'undeserving'* was visible as welfare reform and austerity grew [34, 35].

Austerity did not affect everyone equally. Evidence shows that effects of austerity reforms fell disproportionately on low-income households of working age [86] despite David Cameron's 2010 declaration that *'we are all in this together'* [87]. These measures have not had an equal distribution across the country either. Post-industrial parts of England, such as Northern towns and cities, were hardest hit because of higher reliance on benefits and tax credits [88]. Government cut local authorities' budgets by £16 billion between 2010 and 2020. By 2025, local services will face a funding gap of £7.8 billion based on the cost of providing services at the 2017/18 levels [89]. The more deprived the local authority, the greater the financial hit. This was mainly those in the North, losing around four times as much per adult of working age as those local authorities least affected in the South and East of England. Between 2011/12 and 2014/15 the most deprived local authority lost £222 per head compared to £40 per head in the most affluent local authority, excluding school expenses [90]. A data linkage study in the context of the great recession provides evidence that austerity was associated with increased prescription use. [91]. Employed individuals living in regions that were poorly recovering also had the highest risk of starting a new course of antidepressants [91]. Contrary to this, findings from an 18-month follow-up prospective cohort survey of mental health and wellbeing found a large mental health gap between the least and most deprived neighbourhoods of the case study site, Stockton-on-Tees [92]. However, there was no change over time suggesting that austerity did not worsen inequalities. A potential explanation is the lack of change in the potential pathways which would be required to instigate a change in mental health and wellbeing [92] (see section 3.5 for theories explaining health inequalities). Alternatively, those most deprived already have tough situations, so there is not much further to deteriorate [92]. Most concerning for this research is increasing infant mortality rate (IMR) from 2013. An analysis of trends in

IMR examined that the increasing IMR in England between 2014-2017 was disproportionately affecting the most deprived areas in the country, with more affluent areas unaffected [78]. Moreover, the increase in child poverty rates in 2014-2017 was associated with about a third extra infant deaths in England [78].

Austerity has also hit women harder financially then men [93]. This is because women are more likely than men to access government assistance and use public services [94]. Indeed, as discussed in section 1.2 women are more likely to live in poverty than men with single women at the highest risk of poverty, including lone mothers, thus exposing children in those households to increased risk of experiencing poverty [95]. Austerity has targeted the very jobs that low-income women are more likely to occupy, especially mothers. That is gig-economy, part-time, low pay, flexible, often zero-hour contract jobs, that do not offer statutory sick pay or pensions [96]. Austerity has also targeted social security of which low-income women tend to be the predominant beneficiary [96]. Policies introduced by the Conservative and Liberal Democrat coalition government, outlined in the previous section 2.6, became known as the *'triple whammy'* because of their cumulative impact on women's income, services and employment [96]. Further, the single household payments associated with UC creates potential risk for women's financial independence, especially if a victim of abuse [97]. In this way, austerity highlights how social issues are not equal. Women remain shock absorbers in poor households, and often the first ones to go without food in times of financial difficulty and food scarcity. A woman's right to equality in society and the to chance of optimal health being hindered by austerity policies [96].

Health inequalities policy in the 2010-2020 period was shaped by the Marmot Review [98]. It involved a shift towards addressing health inequalities locally, and the approach was outlined as a new public health system reported in Health and Social Care Act 2012. This included the transfer of public health responsibilities from the NHS to local authorities with the establishment of Health and Wellbeing Boards (between local authorities and local clinical commissioning groups (CCGs) of general practitioners) [31]. Public Health England was also created in 2012 with some responsibility for reducing health inequalities locally and nationally. NHS England and CCGs were also legally responsible for reducing inequality in access to and outcomes from NHS care [31]. A recent study analysing the trends in life expectancy in communities across the UK found that, between 2010-2014, life expectancy began declining for women in one in 20 communities (5%, 351/6,791 local areas) and in one community for men [76]. This decline accelerated and spread between 2014-2019 with life expectancy declining for women in one in five communities (18.7%, 1,270/6,791) and one in nine

communities for men (11.5%, 784/6,791) [76]. Further, this was socially patterned with communities with the lowest life expectancy located in areas in the North, and high levels of poverty, unemployment, and low education [76].

2.6.1 Austerity and hunger – as a re-emerging health inequality

As section 2.1 describes, charitable food aid has a long history in the UK dating back to the 11th century. Austerity brought the issue of hunger and food aid back into public consciousness with food insecurity rising sharply in the UK (and Europe) after 2009 [2]. The numbers of families needing food increased rapidly; the prevalence of food insecurity is discussed in section 3.3. Austere policies meant that the retrenchment of the welfare state and wider services were failing to support families. Evidence suggests that lack of financial security, including unemployment, housing debt and the social security system are major drivers of food insecurity [12, 99]. Indeed, a narrative review of eight quantitative studies found that austerity policies were consistently adversely linked with food insecurity in European countries, including the UK [100]. The review also found that welfare reforms were associated with increased food insecurity and food bank use [100].

In response, much like the 11th century, the charitable sector grew to and took on the role of supporting families in poverty. Prime minister David Cameron praised food banks at the time for embodying his vision for a *'Big Society'* where local communities and volunteers play an active role in service provision [101]. The difference compared with the 11th century though was that the food aid landscape was on a much larger scale and systemised. *"Food aid is an umbrella term encompassing a range of large-scale and small local activities aiming to help people meet food needs, often on a short-term basis during crisis or immediate difficulty; more broadly they contribute to relieving symptoms of household or individual-level food insecurity and poverty"* ([102] pg.4). It can be thought of as a scale moving from emergency to non-emergency assistance, and within those formal and informal models. Emergency assistance provides food for those on low-income at a time of crises with food consumed either onsite such as with a soup kitchen or offsite like food banks [103]. Non-emergency assistance includes for example community centre cooking classes, social food charities, food box schemes, social supermarkets [103]. The re-emergence of hunger as a health inequality since the start of austerity demonstrates how austerity is not just a set of fiscal policies but a lived experience too; in this case impacting daily lives through the inability to access sufficient healthy food.

2.7 Pandemic and hunger (2020-2022)

The COVID-19 pandemic affected the UK and Europe in 2020. In March 2020, the UK Government began to implement public health measures to prevent the spread of COVID-19.

They imposed lockdown measures, banning all non-essential travel and contact with people outside of your household. Schools, offices, businesses, leisure centres, venues and places of worship were all closed as the public were to work from home, socially distance in public and self-isolate if they had symptoms of COVID-19. Police had powers to enforce these emergency laws. This rendered many families' food insecure with demand on food banks increasing [104, 105]. Over the course of the pandemic there were many rapid changes to government public policy to try to protect businesses, employees, children and the wider public. Key policy changes relevant to women and children during the height on the pandemic are shown in appendix O.

Currently, public policy responsibility for addressing health inequalities is shared across local authorities, independent care systems (replacing CCGs), NHS England, and a new national body replacing Public Health England (and with a greater focus on pandemic preparedness and infectious disease surveillance): National Institute for Health Protection [106]. The Government's White Paper Levelling Up has made a commitment to protect the public's health, improve population health resilience and level up unacceptable variations in health [107]. Indeed, mortality from COVID-19 has had unequal impacts on different groups (i.e., ethnic groups and those with disabilities) and exacerbated inequalities. The gap in mortality between the most and least deprived has widened in 2020 to 10.2 years for males and 8.5 years for females, compared with 9.3 years for males and 7.9 years for females in 2019 [41].

2.8 Chapter summary

This chapter discusses the history of the welfare state and poverty demonstrating how food insecurity is an old, yet re-emerging problem in the UK. There are many pivotal moments throughout history influencing women and children's experience of hunger. Firstly, the abolishment of workhouses and a move towards providing a basic minimum security for citizens through a National Insurance Act. The next pivotal moment was the introduction of a welfare state post-World War Two with equality as a key principle. After, the next pivotal moment occurred with Thatcher's ideological shift towards neoliberalism. New Labour followed this with a welcomed focus on health inequalities and child poverty. Thereafter, a decade of austerity measures diminishing the welfare state and a pandemic which has seen the re-emergence of food insecurity as a prominent public health issue.

CHAPTER THREE

3 Chapter three: Literature review

3.1 Chapter overview

This section reviews academic literature. It aims to explore how food insecurity is defined and to paint a picture of what is known, and where the gaps are, in relation to food insecurity, its social determinants, and its impact on nutritional health amongst women and children, by focusing specifically on women of childbearing age, pregnant women and the first 1001 days of life.

3.2 Food insecurity

The terminology around food insecurity has evolved over time in relation to scale from a focus on (inter)national levels to household and individual levels. The Food and Agriculture Organisation (FAO) definition states that food security exists '*when all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life'* [1]. When these features are not met, food insecurity exists. Food insecurity, therefore, can be defined as *'when people do not have adequate physical and economic access to sufficient, safe and nutritious foods that meet their dietary needs and preferences for an active and healthy life'* [1]. From this definition , four main pillars of food security can be identified as shown in figure 1 [108]. They are access, availability, utilisation and stability; each pillar is unpacked in more depth later (see section 3.4). The more recent 2021 UK Food Security Report describes the four pillars as three key links or tests for households [109]. These tests include whether people can do a food shop that includes all they need, pay for it, and prepare nutritious meals, consistently.

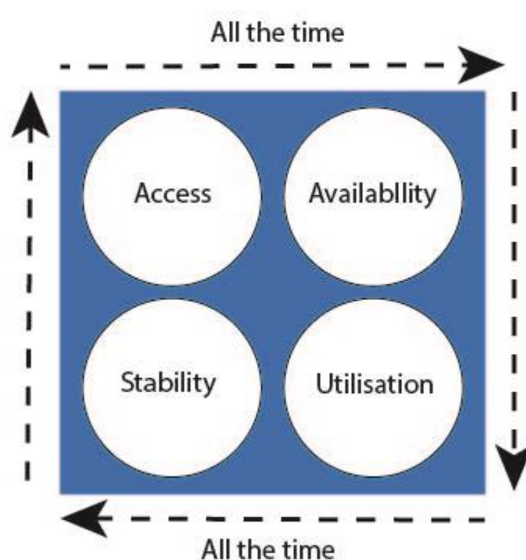

Figure 1: The four pillars of food security created by Zoë Bell

However, the original definition of food insecurity from the FAO (1983, 2006), and its four-pillar framework has limits. Although this definition touches upon personal preferences, it is quite narrow focussing mainly on access and availability. Anderson's [110] later definition encompasses the social dimensions of acceptability and adequacy of food.

> *Access by all people at all times to enough food for an active, healthy life and includes a minimum: a) the ready availability of nutritionally adequate and safe foods, and b) the assured ability to acquire acceptable foods in socially acceptable ways (for example, without resorting to emergency food supplies, scavenging, stealing and other coping strategies). Food insecurity exists whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable foods in socially acceptable ways is limited or uncertain [110].*

The FAO concept of food insecurity is measured in terms of severity: high, marginal, low and very low. Figure 2 depicts the scale of food security and its characteristics at varying severities [111]. The scale identifies some of the core experiences of food-insecure individuals. Taylor and Loopstra [112] describe four stages relating to increasing degrees of severity; experiences of worrying about the ability to obtain food, compromising variety of diet, reducing quantity and quality of food, to experiencing hunger when food security is very low. It is important to remember that this scale portrays that food insecurity is dynamic [112]. The four stages in figure 2 could be expanded to reflect experiences of severity in terms of how many meals are skipped and in the severity of the duration of the episode. Vulnerability to, and severity of food insecurity (at a household or individual level) can change over time, as well as by role within the household and the coping strategies employed to manage the process and deal with the threat of hunger.

Figure 2: Scale of food security and its characteristics ranging from high food security to very low food security (adapted from FAO [111])

3.2.1 Terminology

The concept of food insecurity has been chosen for this research over other concepts such as food poverty and hunger for several reasons. One of the key tensions to address throughout this thesis lies in the recognition of terminology used and whether the issue is one of food insecurity

or food poverty. Within the UK literature, the terms food insecurity and food poverty are used interchangeably as their definitions have similarities, but they do differ. Whilst food poverty is a popular term [113-117], and often used within public health settings, food insecurity is recognised internationally therefore potentially facilitating comparative research. Following Lambie-Mumford [118], this thesis recognises food insecurity as more than a symptom of poverty, but rather a set of experiences that contributes to social exclusion and injustice. As Lambie-Mumford suggests [118] broader theories of poverty can be drawn on, however they predominantly draw upon three principles for understanding the lived experience of food insecurity.

Firstly, food insecurity, like poverty, is *'a construction of specific societies'* ([119] p.3). This means that is that it can be understood as a relative concept like Townsend's interpretation of poverty. Peter Townsend was the pioneer of the relative approach to poverty. Townsend said *'Society itself is continuously changing and thrusting new obligations on its members…they, in turn, develop new needs'* ([120] pg.99). This idea of need being socially determined has a long history, for example Karl Marx observed that people's needs and joys come from society, therefore they are measure by society [121]. The consensual method for measuring poverty, introduced by Townsend, used a nationally representative sample of the population to distinguish between 35 items that were necessary versus desirable to identify a view of what was an unacceptably low standard of living. This method was developed with Breadline Britain 1990, and the 1999 and 2012 Poverty and Social Exclusion surveys [122-124]. Over the years, these surveys emphasised that priorities changed showing that the definition of poverty is dependent on the society in which we live. In the UK, surveys showed that the needs of the population go beyond the basics of food and shelter [122-124]. Townsend's consensual method thus provided a minimum standard of living based democratically on public opinion. The UK government has adopted this approach for official work, although the discourse for an absolute approach to poverty continues in politics.

The second principle from broader poverty theory to draw on to understand the lived experience of food insecurity is that food insecurity is also seen as *'…dynamic, not a static concept'* ([119] p.157). Food insecurity is a complex concept that functions at various levels from international to interpersonal, as well as having a temporal dimension (section 3.4.1.4). Finally, the third principle lies in the *'multifarious ways in which poverty [or food insecurity] is experienced'* ([119] p.176). This recognises how food insecurity is experienced over time, by different people within the same household who might experience food insecurity differently, how different experiences might occur at different life stages or in the context of different health

circumstances [118]. This final principle emphasises the importance of lived experience and portrays how the experience of food insecurity can impact wider social relations, thus potentially contributing to social exclusion. Thus, although this thesis does not use the term *food poverty,* it draws on some of its principles to help understand the lived experience, in addition to the four pillars.

Finally, turning to the concept of *hunger.* Food insecurity as a concept is much more complex than hunger. Hunger relates to a physiological experience, that no doubt everyone has had a temporary experience of. The dictionary defines it as: *'a feeling of discomfort or weakness caused by a lack of food, coupled with the desire to eat'* [125]. Hunger is interpreted at an individual level, in contrast, food insecurity is a concept that can be understood at different levels; the (inter)national, national, community, household and individual level [126]. As Lambie-Mumford [118] argues, the biologically focused conceptualisation does not provide sufficient depth ignoring the social dynamics and processes to the experience. The complexity of food insecurity makes hunger a *potential* consequence of food insecurity but not a *necessary* consequence [127]. Taking these definitions and conceptualisations into account, this thesis focuses on household and individual level food insecurity.

3.2.2 Measuring food insecurity

Many tools exist to measure food insecurity. Ashby et al. [128] reviewed published literature on the measurement tools used in HICs, and their measurement of the dimensions of food insecurity. There were 13 studies in the final analysis, and eight multi-item tools identified. All eight tools measured the dimension of food access whilst two partially assessed either the dimensions of food utilisation or stability over time (Radimer/Cornell [129] and Kuyper Tool [130] respectively). None of the eight tools identified measured food availability. This review concluded that there remains a need to develop a valid and reliable tool that measures all four dimensions of food insecurity at an individual, household, and community level. Not measuring all dimensions of food insecurity causes two problems (1) it results in underestimation of the prevalence of the issue, and (2) measures fail to capture those who are less severely food insecure [128]. The most commonly used tool to measure household food insecurity is the Household Food Security Survey Module (HFSSM) containing 18 questions about food security in the household over the previous 12 months [131]. Ten of the 18 questions are specific to adults, eight are specific to children under the age of 18 years in the household. The questions range in severity of experience like figure 2. The USA and Canada are two HICs where food insecurity is monitored nationally using HFSSM [132]. However, in the UK, until 2019 there had been no national measurement of food insecurity. Therefore, there is relatively

little evidence base for the scale of food insecurity, the social drivers and nature food insecurity. The Department for Work and Pensions (DWP) announced that the Family Resources Survey April 2019 would be the first systematic measure of food insecurity in the UK. It included the 10-item HFSSM survey to measure household food insecurity. They did not, however, implement the additional eight items specific to children [85].

Prior to this, academics, policy makers and activists used proxy markers to gauge the scale of food insecurity, for example, food-related measures in poverty surveys or uptake of FSM or, perhaps more problematically, the numbers of people accessing food banks. Food bank numbers are problematic because they are likely to under-estimate the prevalence of food insecurity, as they only account for those accessing the service, not those in need and unable to access the service. Furthermore, food banks numbers cannot show the extent of unmet need when the number of visits permitted to a service is limited, and a cumulative figure cannot account for repeat visits. Indeed, many food banks are locally run and so figures are not always available to the public either [133].

3.3 Prevalence of food insecurity

The UK announced it would measure household food insecurity for the first time in 2019 [134] Results from the 2020 to 2021 Family Resources Survey showed that in the previous 30 days at time of questioning, 5% of households had marginal food security, 3% had low food security and 3% had very low food security (see figure 2 for descriptions of experiences at these levels) [85]. Geographically, rates varied largely between regions with households in North East England most likely to be food insecure, with 8% of households experiencing marginal food security [85].

In response to the COVID-19 pandemic, The Food Foundation began tracking food insecurity with its own nationally representative survey of Great Britain using a 30-day recall period. It has collected ten rounds of data between March 2020 and April 2022 [135]. They reported that 4.7 million adults in the UK experienced food insecurity during the first six months of the pandemic (March-September 2020). Their survey suggests that, pre-pandemic, 7.6% of households were experiencing food insecurity. Between March to August 2020 this rose to 9.7% and fell to 9% between August and January 2021; with this figure remaining higher than pre-pandemic levels [135]. Feeding Britain conducted a nationally representative survey for the UK in June 2020. From 1,004 responses they found 8.5% of adults experienced low food security and 7.7.% with very low food security [136].

Until 2019/2020 it had been difficult to accurately measure the prevalence of food insecurity in the UK. Proxy measures were used instead such as income, receipt of social security, uptake of FSM and breakfast clubs. The UK relied on secondary data from independent charity organisations such as Oxfam, Think Tanks or reports such as those from the UN for this information. Critical to understanding the picture of food insecurity has been data released every six months from the national food bank charity, The Trussell Trust. The Trussell Trust show that food bank usage has increased since 2010/2011 [4]. In 2016/2017 the Trussell Trust distributed 1,201,286 food parcels, increasing each year until a peak in 2020/2021 during the height of the pandemic with 2,568,579 parcels distributed [137]. In 2021/2022 the number of parcels has dropped to just over 2.1 million, which is still an 81% increase from 2016 [137].

3.3.1 Children

Food insecurity in households with children has been consistently higher than in the general population throughout the pandemic. Results from surveys capturing the first six months of the pandemic, found that 2.3 million children or 12% of households with children in the UK lived in a household that had experienced food insecurity [135]. The Food Foundation reported that 1 million 8-17 years olds' (13%) and their families had visited a food bank over the 2020/21 Christmas period [135]. In the first two weeks of the lockdown, 21% of households with children under 18 years experienced food insecurity. This fell to 9.6% by January 2021 but was still ~3% higher than households without children [135]. Of most concern was that 12% of parents reported that their children had directly experienced one or more forms of food insecurity in May 2020 [135]. The Food Foundation reported that, given that parents often sacrifice to protect their children, this figure was particularly worrying and telling of the depth and scale of the problem [135].

3.3.2 European context

Europe has a longer history of food banks with the European Food Banks Federation (FEBA) active since 1986 [138]. Further, Europe has witnessed a similar picture with a rise in food aid over the last decade [139]. For example, Spain has had a similar trajectory to the UK in use of food banks. For Spain, both the economic crises and austerity measures have meant an increase in food charity demand with the number of people helped increasing from 700,000 in 2007 to 1.5 million by 2012 [140]; this is happening in the context of a weakening welfare state [140]. A study examining food insecurity and social protection in Europe, found that between 2004 and 2012 in countries where social protection spending was higher, the rising levels of unemployment did not lead to higher levels of food insecurity [2]. Meanwhile, in countries where social protection spending was low, reduced household income was connected to

increasing food insecurity. Countries where the increased food insecurity was evident included the UK, Greece, Italy, the Netherlands, and Ireland [2]. In the EU population, in 2020, 8.6% were unable to afford a meal with meat, fish, or vegetarian equivalent every second day [141].

3.4 Four pillars of food insecurity

The four pillars of food insecurity (section 3.2) can help elucidate the causes of food insecurity; the following sections will discuss each one in greater depth.

3.4.1 Access – financial and physical

Food insecurity in HICs rarely exists because of food shortages or food supply issues, but rather due to economic hardship [126, 142-146]. *Access* thus refers to the ability of people to financially, but also physically, be able to acquire food. Chapter two showed how public policy changes to the welfare state and social security provision can influence health and hunger, with austerity Britain a particularly punitive time for women, and households with children. *Access* to food has thus become less secure for those households impacted by welfare reform as their budgets are tighter. Evidence shows that, for low-income households, economic or financial access to food is a key determinant of food insecurity [147, 148].

Further, in the UK, healthy foods are three times more expensive per calorie that less healthy foods [149]. For low-income households in the UK, over a quarter (26.9%), would need to spend more than a quarter of their disposable income after housing costs to meet the costs of the UK's Eatwell guide for a healthy diet [150]. This increases to 42% of disposable income when the household includes children [150]. Indeed, 52% of households with children were unable to meet the minimum income standard's definition of a *'socially acceptable diet'* [148]. Further, evidence shows that diets meeting the needs of the dietary recommendations set out by Scientific Advisory Committee on Nutrition (SACN) are more costly than diets which did not [147].

Another aspect to *access* means to be able to physically acquire food. Public health nutrition research on food environments can help us better understand this. The food environment is the space in which people make decisions about food – what to eat, where to buy it, when and with whom to eat it, it contains the foods available to people in their everyday lives [151]. Hence, food environments play a major role in shaping the diets of everybody, everywhere. Policy has a big impact on shaping the food environment and influencing the options people have when they make decisions about what to eat; nutritional quality, safety, price convenience, labelling and promotion of foods [151]. In England, rather than food deserts, low-income neighbourhoods are densely populated with hot food takeaways, with an average of 0.86 hot

food takeaways and fast-food outlets per 1000 people [152]. The nutrient content of the food sold in these outlets tends to contain more calories, fat, and saturated fat in one portion than homecooked foods. This food, often sold for a low-cost, begins to demonstrate how the environment is a big factor determining whether healthy food is accessible or not.

3.4.2 Availability

Availability refers to a reliable quantity and quality source of safe and nutritious foods being on offer in supermarkets or markets for people. In HICs, this depends on the existence of shops and markets in areas where people live, domestic production and food stocks [109]. The COVID-19 pandemic is one example of how the food supply chain, which is the UK is a *'just in time'* supply chain, can influence food security [105].

3.4.3 Utilisation

Utilisation refers to ensuring an adequate dietary intake of food that the body can metabolise to prevent diet-related ill-health i.e., *'enough food for an active and healthy life'* [1]. This depends on food safety, food hygiene, food quality, proper food preparation and nutritional knowledge. From a public health perspective, concern arises not only from the volume of the diet, but when *quality* of the diet alters due to economic constraints.

3.4.4 Stability – temporal nature

The pillar of stability depicted by figure 2, a scale, indicates how the experience of food insecurity can move up and down along the scale. That is, as discussed in section 3.2.1 food insecurity is *'…dynamic, not a static concept'* ([119] p.157). The FAO describe two types of food insecurity in relation to its temporal nature: chronic and transient [108]. In HICs, transient food insecurity is related to income shocks, such as adverse changes to social security payment or ill-health. Chronic food insecurity is a long-term, persistent issue. Persistence of food insecurity may increase the risk of malnutrition and nutrition-related diseases. The link between food insecurity, nutrition and health is discussed in section 3.6. The FAO also propose a third temporal nature, a cyclical or seasonal one, but argue that this is similar to chronic in that it is normally predictable and follows a sequence of events [108].

With respect to the temporal nature of food insecurity, it is useful to refer to the wider poverty literature on low and middle-income countries [153]. In this context, seasonal poverty is repeatedly experienced by low-income groups at certain times of the year, aggravated by certain seasons or climate changes [153]. In the UK there is evidence that every year the winter months increase the prevalence and severity of food insecurity as do the school holidays when all of a child's meal are to be provided for by the home [154].

3.5 Food insecurity as a re-emerging health inequality

Health inequalities are the differences in health outcomes between different social groups e.g., class, gender, race. It can be defined as *'systematic differences in health between different socio-economic groups within a society. As they are socially produced, they are potentially avoidable and widely considered unacceptable in a civilised society'* [155, 156]. Inequalities are not restricted to differences between most privileged and most disadvantaged groups but affect everyone across the social gradient [157]. The social gradient is important as it means that health inequalities affect everyone (aside from those at the very top) in contrast to poverty that refers to a small group of the population [158]. Health inequalities result from social inequalities, thus reducing health inequalities requires action across the social determinants of health [98], that is *'the conditions in which people are born, grow, live, work and age'* [159]. Figure 3 is the Dahlgren and Whitehead *'rainbow model'* (Dahlgren & Whitehead, 1991). It is widely used to illustrate the range of social factors influencing health status across the general population.

Figure 3: The Dahlgren and Whitehead *'rainbow'* [44]

The rainbow clearly maps an otherwise *'invisible'* relationship between an individual and their environment and health (Dahlgren & Whitehead, 1991). At the centre is the individual and their characteristics that are predominantly fixed e.g., age and gender. The following layers are modifiable by policy. First are individual and lifestyle factors that include personal health behaviours such as diet, smoking or physical activity. Second, are the interactions an individual has with their peers and community. Third, are the living and working conditions and, finally,

the overall socio-economic, cultural, and environment conditions in society. Each layer influences a person's ability to maintain their health. They interact; for example, lifestyle is embedded in social norms and networks and the living and working condition, set within the wider socioeconomic and cultural environment.

Food insecurity in HICs is an example of an issue that is unjust and avoidable. Drawing on the rainbow model, food insecurity at a household and individual level arises due to underlying social, economic, and political factors that affect the accessibility, availability, and utilisation of food over time in the community. Food insecurity subsequently contributes to widening health inequalities because those who experience food insecurity are unable to access a sufficient quality or quantity of food to live a healthy life. Differences in the ability to access healthy food and differences in what people eat across the social groups can affect health and wellbeing and contribute to wider health inequality [160]. Meanwhile, food insecurity is also a socially patterned experience, and experienced more by those within lower socio-economic groups. Although not everyone of lower socio-economic status experiences food insecurity, they are more vulnerable. Social class can be measured in numerous ways, most commonly by occupational class, education or income. These terms are inter-related, thus the term socio-economic status refers to these collectively [155]. Using existing theories that help explain the persistence of health inequalities [161, 162] we can begin to explore the link between food insecurity and its causes; such theories are unpacked in the sections which follow.

3.5.1 Material deprivation

Material deprivation is one pathway through which inequalities in health exist. This explanation emphasises the importance of material conditions. For instance, income, and what income enables someone to have relative to other groups e.g., access to healthcare, better quality housing or higher education. Access to such health benefiting goods and services affects exposure to material health risk factors such as poor housing, lower education, or inadequate nutrition, in turn improving health outcomes [161, 162]. This lack of income inhibits the ability to access and utilise sufficient healthy food which can potentially lead to poorer health outcomes that can accumulate over the life course. As chapter one discussed, women are more vulnerable to poverty and food insecurity, and as chapter two illustrated, women are unfavourably hit by changes to welfare, particularly those in the North of England.

3.5.2 Cultural-behavioural pathway

The cultural-behavioural pathway exerts that everyone has different beliefs, values and attitudes towards health. These differences result in higher rates of health-damaging behaviours in lower socio-economic groups. A more cultural explanation suggests that these unhealthy behaviours

are more culturally accepted among lower socio-economic groups [161, 162]. With regards to food insecurity the cultural-behavioural pathway links to the hypothesis that food insecure groups consume a poorer quality diet compared with food secure groups. Section 3.6 discusses the evidence base for this relationship between food security and diet quality as well as potential mechanisms through which a relationship exists.

3.5.3 Psychological pathway

Another pathway through which health inequalities exist is the psychological pathway. This theory explains the connection between individual psychological risk factors and our sensitivities to the immediate social environment and to broader social structure of modern society [161, 162]. This theory explains the adverse biological consequences from psychological risk factors such as (lack of) social support, work demands and levels of control [161, 162]. There are at least three types of psychological risk factors (1) social status relative to position in society, (2) social affiliations i.e., friendships and support networks, and (3) early life experience i.e., maternal stress in utero or early life [163]. These are all potential sources of chronic stress. With regards to food insecurity in HICs, the psychological pathway presents a potential mechanism through which poorer health outcomes exist as those who are food insecure may be unable to participate in normal consumer routes for purchasing food, or potentially may not be able to partake socially due to a lack of income.

3.5.4 Macro-social pathway

The macro-social pathway asserts that health inequalities arise from overall levels of inequality in society. Unequal levels arise from differences in the circumstances within which we are born, grow, live, work and age, also referred to as the social determinants of health. For example, the social determinant of health being explored in this thesis is food insecurity, or access to sufficient, healthy food [161, 162]. Ensuring access to sufficiently healthy food for people at a macro-level is shaped by policies, economics, and politics which in turn influences the distribution of power, money and resources. As chapter two has shown welfare states are a set of extensive policies that can have a big influence on the extent of health inequalities. They do so by redistributing income through progressive taxation and social security and using collective payments to provide things such as social housing, culture and leisure activities and healthcare [162].

3.5.5 Life course explanation

This perspective proposes that health outcomes in the present and future generation are influenced by environmental exposures, including biological, physical, social and behavioural factors, as well as life experiences, throughout the entire life span [164]. It combines all four of

underpinning theoretical principles and adds a temporal dimension. It is rooted in sociology but has been applied to other fields such as nursing and nutrition [164-166]. Time is a crucial aspect of this explanation. Every day presents an opportunity to influence future health. What an individual consumes on a daily basis forms their dietary pattern. Cumulative health effects result from long-term exposure to factors that affect health, such as long-term poverty [167] whilst *'timing'* means that there are critical periods of time during the life span when health trajectories are particularly affected. Section 3.7.5 discusses the Developmental Origins of Health and Disease (DOHaD) and the first 1001 days of life as a critical window, during which nutrition plays a vital role in shaping health, for better or worse. Adolescence represents another critical time in the life course because this is when rapid growth occurs, with increased nutrient intake needed to support this growth [164].

3.6 Food insecurity, nutrition, and health

It is well established that a healthy balanced diet is an important factor for health. Yet, those experiencing food insecurity do not have secure access to enough quality food for an active and healthy life. This section of the literature review explores the relationship between food insecurity, nutrition, and health amongst women and children.

3.6.1 Diet quality

Income inequalities affect dietary quality, with food being the modifiable factor to household's essential outgoings each month, meaning that food quality and quantity are often compromised as a coping strategy for living in poverty [168, 169]. Dietary quality can be measured in various ways for example by use of 24hr recalls, food frequency questionnaires or healthy eating indexes [170]. A diet close to the guidelines (e.g., provided by SACN, WHO or British Dietetic Association (BDA)) for a healthy is a diet of better quality. Diet quality, especially in relation to fruit and vegetable consumption, are key factors in the susceptibility to non-communicable diseases such as obesity and coronary heart disease [3]. In the UK inequalities in diet and nutrition are evident in national data. Inadequate resources to access a quality diet, as is seen with food insecurity, may lead to malnutrition and have a role in the development of adverse mental and behavioural health as well as physical health [171, 172].

3.6.1.1 Women

In 2007, the Food Standards Agency commissioned the Low Income National Diet and Nutrition Survey (LINDNS) [173]. This survey provides data on the dietary habits and nutritional status of the UK's low-income population group approximately the bottom 15% of the population in terms of material deprivation. Included were a total of 3,728 people from 2,477 households across 528 deprived wards in the UK. Results showed that like the general

population consumption of fruits and vegetables was below the government's recommendations with women consuming 2.5 portions, boys 1.6 portions and girls 2.0 portions. Intakes of non-milk extrinsic sugars were above the 11% recommendation (14% and 17% for adults and children respectively), as were fats above the recommended 35% of total energy intake (total energy from fat 35.2% for women, 36.1% for boys and 35.7% for girls). Data showed a below recommendation consumption of vitamins, minerals and fibre. These results indicate adverse intakes of fruits and vegetables, wholegrains in food insecure adults and children. A limitation of the study is the potential bias in dietary reporting that is inherent in food consumption surveys and can result in underestimation of the mean energy intake of the population.

Yau et al. [174] was the first nationally representative study in the UK to investigate associations of food insecurity with socio-demographic characteristics, diet and health. A cross-sectional analysis of 2,551 adults showed food insecure adults had less healthy diets compared to food secure adults. Odds of consuming fruits and vegetables above median frequency were lower in food insecure adults compared to food secure adults (OR 0·59; 95 % CI 0·47, 0·74 and OR 0·68; 95 % CI 0·54, 0·86, respectively), but higher for fruit juice (OR 1·39; 95 % CI 1·10, 1·75). White British food insecure adults had higher odds of above medium fruit juice intake compared with food secure adults OR 1·50 (95 % CI 1·16, 1·93). Black food insecure adults had lower odds of above medium fruit juice intake compared with food secure adults OR 0·11 (95 % CI 0·02, 0·62). A validated survey, the behavioural risk factor surveillance system fruit and vegetable module was used to collect data on diet and health. However, a limitation is the potential for social desirability bias as this is all self-reported data.

Evidence from North America where research in this field is far greater than in the UK, supports this notion that dietary quality is poorer for food insecure adults than food secure adults. A systematic review examined the association between food insecurity and dietary quality in adults and children from 26 studies [175]. Results showed that food insecure women aged 18-64 years (pooled sample size 39,256) consumed less fruit, vegetables, vitamins and minerals (including vitamin A, B6, calcium, magnesium and zinc), and had lower overall energy intake. Data for saturated fat consumption were mixed, and there was a lack of data relating to carbohydrates and protein. These results indicate adverse intakes of fruit and vegetables and dairy products in food insecure adults.

Johnson et al. [176] systematically reviewed twenty-four studies focusing specifically on food insecure women's dietary outcomes between 1995 to 2016. Women aged between 18-60 years living in Canada or the USA who were primarily responsible for caregiving and food provision in their household were recruited. Results showed that food insecure women consumed higher

amounts of carbohydrates than food secure women, and had less dairy, fruits and vegetables, vitamins and minerals (including vitamin A, calcium, magnesium and folate). A limitation to this review is that 13 of the 24 included studies for analysis were deemed to have high-risk of bias and were considered low quality. Bias was attributed to measures used for dietary quality, whilst low quality resulted from un-carefully planned timing of assessments of food insecurity and dietary assessment or not providing contextual data to understand the chronicity or temporal nature of food insecurity.

3.6.1.2 Children

For children the evidence is less consistently associated with poorer dietary quality. Hanson and Connor's [175] review included 16 studies from the USA contributing data relevant to children up to 18 years (pooled sample size 46,410), with most children at adolescence stage. The review found no evidence of an association between food insecurity and consumption of grains, and very limited and mixed evidence with vegetable consumption. An adverse relationship between food insecurity and fruit consumption amongst children and adolescents was found, but of the 14 studies reporting on fruit consumption, four showed an adverse association in adolescents and children, whilst the other 10 were non-significant or ambiguous. This highlights the lack of consensus of the relationship between food insecurity and dietary quality amongst children and suggests that children may be successfully shielded from food shortages by adults in the household [175].

There are several potential explanations for the lack of consistency in the relationship between food insecurity and dietary quality amongst children. Some relate to study limitations. A lot of studies reporting on children's dietary quality rely on parental reporting. Nord et al. [177] report inconsistency between adult and adolescents reporting of their own food security and diet quality. Indeed, Fram et al. [178] argue that children report their own experiences best, and parental reports lack validity and impede effective intervention. Further, with adolescents parents most likely aren't aware of everything their child eats outside of the home environment. Another limitation is that under reporting of dietary intake can be higher among those with lower socio-economic status [179]. This is important as food insecure parents are mostly of lower socio-economic status and this may exaggerate reports of an adverse impact of food insecurity and dietary quality. Another limitation are the methods used to capture dietary quality that potentially explain the lack of consistency in the relationship between food insecurity and dietary quality. For example, 24hr recall is one method used to collect data in the literature. This method uses a structured interview process where the participant recalls everything they had to eat and drink in the previous 24-hours in a chronological order [170]. 24hr recalls provide

information about the individual's total energy and nutrient intakes, intake of specific nutrients or food, meal composition, fluid intake and eating environment for a 24-hour period. Multiple recalls allow for an individual's dietary patterns and habitual diet such as frequency of eating and meal compositions to be captured. However, if used at one time point 24hr recall cannot capture the reality of the nature of food insecurity that fluctuates [170]. A final possibility is that mothers are sacrificing their own diet quality to try and give their children a better diet.

Focusing specifically on the early years, The Southampton Women's Survey (SWS) is a longitudinal study that examined an association between food insecurity, dietary quality and body composition [180] amongst 1,631 women and children through pregnancy until 3 years old. It found clear differences with food insecure 3-year-old children having poorer dietary quality compared to children from food secure households. Measured as weekly frequency of consumption, with median inter-quartile range, food insecure 3-year olds had a significantly greater intake of white bread (7.0 (2.0- 14.0) and 4.0 (1.0- 7.7) respectively, p= 0.001), processed meat (8.0 (5.0- 10.5) and 6.0 (4.0- 8.8) respectively, p= 0.002) and chips and roast potatoes (3.7 (2.2-5.2) and 2.7 (1.5-4.4) respectively, p= 0.001) alongside a lower intake of vegetables (7.5 (3.5-13.5) and 10.0 (5.6-15.0) respectively, p=0.019). A limitation to the SWS is that mother's socioeconomic data was collected prior to pregnancy, whilst assessment of food insecurity was taken when the child was 3 years old. However, if the mother was food insecure, it is not expected that much would have changed in that time. Another limitation is the use of the United States Department of Agriculture (USDA's) short 10-item survey lacking questions specific to children's food insecurity rather than using the additional 8-items specific to children. It also assessed diets using a food frequency questionnaire over a shorter period than the food security survey covers potentially not capturing the full extent of the effect of food insecurity over a time.

The Born in Bradford study found similar results [181]. This study reports on 1735 women and children of White British and Pakistani-origin in an urban-deprived city of Bradford, UK. At 12 and 18 months postpartum infant dietary data was collected from the mother. Children's diets were assessed using a validated food frequency questionnaire of the foods eaten in the previous month and adjusted for mother's age. Results showed that both food insecure Pakistani-origin and White British children consumed poorer quality diets than food secure children, such as consuming more sugar-sweetened beverages, savoury snacks and fewer vegetables. A limitation to this study is the relatively small sample size of individuals that were food insecure, and that food insecurity was only assessed at one point in time (the 12-month

follow-up assessment, capturing the previous 12 months) despite households being able to cycle in and out of food security.

3.6.2 Food insecurity and weight

Another major public health issue in HICs, including the UK, is obesity. The relationship between food insecurity and obesity is complex, and the question of whether food insecurity is a cause of obesity was raised in 1995 [182]. By some, the relationship is labelled a paradox [183], but others do not agree, drawing on adaptive evolutionary theory to explain why [184]. Most of the literature base exploring the association comes from the USA, with studies reporting associations that differ by sex and age [25, 171, 172, 185]; these are explored in the following sections.

The literature consistently finds a positive association between food insecurity and high body weight (overweight and obesity) for women, but not (or less so) for men and children. However, a meta-analysis is best placed to assess the strength of the association between food insecurity and high body weight and examine potential moderators of association strength [184]. Nettle et al. [184] included a total of 125 papers reporting 305 associations in their meta-analysis. This study found that overall, there was a positive association between food insecurity and high body weight; the odds of high body weight being around 21% higher for food insecure participants than food secure participants. This association was not uniform, but driven by adult women (LOR: 0.30, 95% Cl: 0.22 to 0.37) in HICs (LOR: 0.24. 95% Cl: 0.19 to 0.29) and was absent or weaker amongst men (LOR: 0.02, 95% Cl: -0.05 to 0.10) and children (LOR: 0.08, 95% Cl: 0.01 to 0.15). No association was found in low or middle-income countries (LOR: -0.24, 95% Cl: -0.13 to 0.04). These findings were consistent with those of previous reviews [171, 185, 186]. Amongst children there was a significantly weaker association than amongst adults, the age of the child did not affect the association overall. However, there was a sex difference beginning to emerge in older children like the pattern amongst adults [184]. A potential explanation for these findings amongst children is that studies generally used parental reports to measure food insecurity, thus not truly reflecting their food security levels. Additionally, measuring fatness in children is complicated by growth [184]. Interestingly, although food insecurity and high body weight are both socially stratified (the more deprived in society experiencing both food insecurity and high body weight [15]), the meta-analysis found that their association was independent of them both being associated with socio-economic status [184].

3.6.3 Pregnancy

Food insecurity during pregnancy can reduce access to healthy foods that are critical to support a healthy pregnancy and post-partum period. This can affect both mother's health and well-being and child's growth and development [23]. A key outcome related to maternal health during pregnancy is gestational weight gain, with both insufficient and excessive weight gain associated with negative maternal and infant health outcomes [187]. Indeed, the 1st 1001 days of life (from conception to a child's second birthday) is recognised as a critical window in the prevention of childhood obesity [24], see section 3.7.5 for further discussion on the DOHaD.

The literature is lacking a systematic review and meta-analysis of the association between food insecurity and gestational weight gain amongst pregnant women in HICs. However, Arzhang et al. [188] conducted a review and meta-analysis including 15 studies from HICs (n=11), upper-middle (n=2), lower-middle (n=1) and low-income (n=1) countries. The odds ratio of 7651 individuals in these studies were pooled for the meta-analysis. They found that food insecurity was associated with both inadequate and excessive gestational weight gain. Pregnant women with food insecurity had a 49% higher odds of inadequate weight gain (OR: 1.49, 95%Cl: 1.26 to 1.76; p= <0.001) compared to food secure pregnant women. A moderate heterogeneity was found between studies (I^2 = 50.5%, P= 0.016) based on country classification by income and type of food insecurity data collection i.e., interview or self-report. A significant association between food insecurity and excessive weight gain was found (OR: 1.27, 95% Cl: 1.05 to 1.54, P= 0.012), with study design and food insecurity data collection explaining moderate heterogeneity between studies (I^2 = 61.9%, P= 0.001). These findings of an association with both inadequate and excessive gestational weight gain are consistent with another meta-analysis [189]. Explanations for inadequate gestational weight gain have been linked with appetite, stress levels and energy expenditure, which in the second and third trimester, increases to meet physiological changes such as a growing foetus. Section 3.7 explores potential mechanisms to explain excessive gestational weight gain.

3.6.4 Early years

Exposure to food insecurity during childhood may be crucial to a child's weight trajectory. There is evidence that compared with children who have normal weight, children and adolescents with obesity are five times more likely to be with obesity in adulthood [190]. Particularly important are the first 1001 days of life (from conception to 2 years old). This is a critical period because it's when the most active neurobiological and physiological development occurs throughout the life course [191]. Therefore, it is a time when a child is particularly vulnerable to adversity such as poor nutrition (see section 3.7.5 for further

discussion). However, as section 3.6.2 touches upon, the evidence for a relationship between food insecurity and weight is mixed amongst children including the early years [192-194].

3.7 Mechanisms linking food insecurity, dietary quality and weight status

This section explores potential mechanisms underlying the associations between food insecurity and weight status described in the previous section. These mechanisms fall into two broad categories, physiological and behavioural.

3.7.1 Behavioural - Energy-density and cost framework

In 1992, Basiotis first explained a behavioural model in which households living on a low-income consumed cheaper food [195]. With tight or diminishing budgets, households meet their energy intakes at a lower cost, a strategy that compromises food choice. Basiotis's work in validating the food sufficiency scale in the US, found that limited food choice was a factor food insecure households experienced with participants responding *'enough to eat but not the kinds of food we want to eat'* (Basiotis, 1992 as cited in [196]). The hypothesis is that a substitution occurs. This means that food insecure households strategically choose lower cost, higher energy-dense foods to save money. As food budgets decrease and total spend on food further decreases, dietary energy density increases. Given the high palatability of these foods and the uncertainty of when food will next be available, overconsumption is possible, thus total energy intake may increase [197]. Figure 4 shows this energy density-cost curve [197], that potentially explains the relationship between food insecurity and high body weight [197].

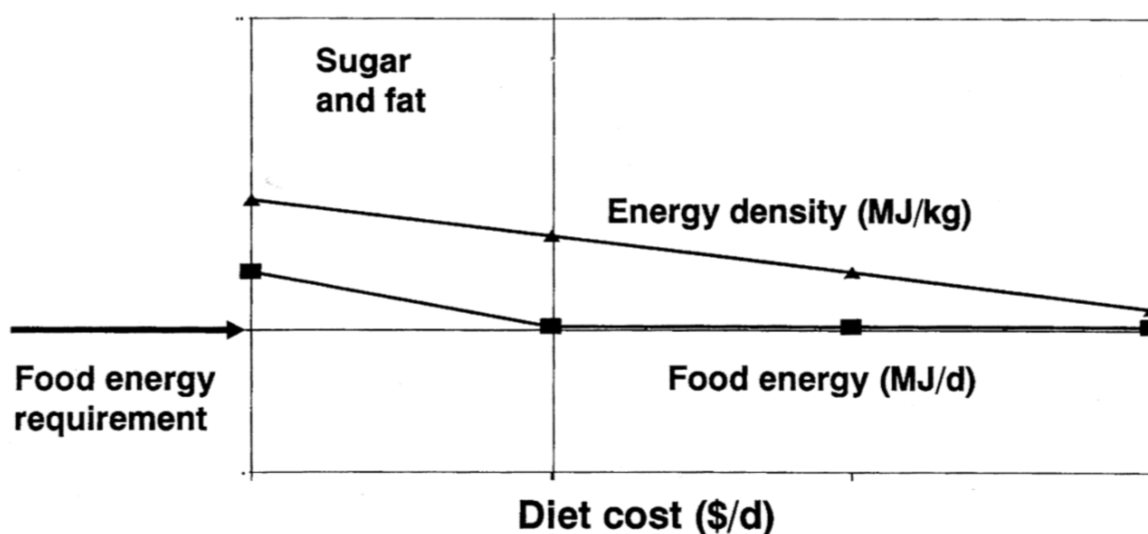

Figure 4: Energy density-cost curve showing the relationship between dietary costs, energy density and energy intakes (Drewnowski [186])

Section 3.6.2 demonstrated that a positive association between food insecurity and high body weight was only strong in HICs. This energy-density and cost framework may explain why. In HICs the food landscape in abundant with cheap, high energy dense foods [197]. Therefore, food insecure individuals are able to consume a high number of calories when they have access to food, even if this is intermittent as section 3.7.2 describes.

3.7.2 Behavioural - Cyclical nature

The cyclical nature of food insecurity is another potential mechanism underlying its relationship with body weight. As early as 1985, it has been reported that amongst people experiencing food insecurity, food intake occurs in monthly cycles with shortages more prevalent at the end of the month [198]. In the UK, the 2012 welfare reforms introduced a new social security system, UC (see section 2.6). This included modifying payments of benefits from weekly to monthly, thus potentially increasing the risk of budgeting issues for those not used to managing their money monthly [199]. This heightens the risk of monthly cyclical cycles of food shortages at the end of the month. Other cycles food insecure households face regarding food intake are during the winter months when energy bills are higher and summer school holidays (when households have to feed their children more meals) [154].

Further, the sacrifice theory is a well-documented strategy adopted by mothers to protect their children from scarcity. Reduction in energy intake occurs when budgets are squeezed, for instance at the end of the month. This is a well-documented strategy that perhaps explains the consistent relationship between food insecurity, poorer dietary quality and overweight amongst women, whilst results for children remain mixed [186]. Moreover, how the cyclical nature of food insecurity affects body weight may be explained by the insurance hypothesis (IH) in the section below.

3.7.3 Physiological – Insurance hypothesis

Dietz ([182] pg.766) was the first to suggest that high body weight might actually be *"an adaptive response to episodic food insufficiency"*, and later Nettle et al. [184] investigated this so called IH. The IH is a hypothesis rooted in adaptive evolutionary thinking [184]. It centres upon four key principles: (1) storage of fat is an adaptive strategy for mammals to buffer themselves, (2) fat storage has costs, (3) level of body fat to store therefore depends on level of food security with the risk of unavailability increasing the amount of fat the individual should optimally store, and (4) mammals possess decision-making mechanisms to adaptively regulate their fat storage [184]. Thus, it suggests that the function of storing fat is to provide a buffer against shortfall in the food supply. Therefore, uncertainty about accessing sufficient food cues the body into fat storage mode. This hypothesis challenges claims that the relationship between

food insecurity and high body weight is paradoxical by providing a reason as to why the body stores fat during times of food insecurity; arguing that it is an adaptive evolutionary response to our decision-making and circumstances [184].

Section 3.6.2 presented the findings from a meta-analysis testing this hypothesis. The results support the role of the IH within women. However, section 3.6.2 also provided evidence for a lack of an association between food insecurity and high body weight amongst men. This suggests that the IH is not solely responsible as an explanation for the relationship between food insecurity and high body weight, that rather a combination of mechanisms is involved, such as those discussed throughout section 3.7.

3.7.4 Physiological – Chronic stress

Chronic stress is another potential mechanism underlying the relationship between food insecurity and body weight. Food insecurity is a source of psychological stress as section 3.5.3 explains. Chronic stress has been shown to increase an individual's desire to consume high-energy, dense foods thus influence visceral fat accumulation, altering metabolism and increasing risk of chronic disease [200, 201]. Visceral fat is a type of fat that is more harmful metabolically, as compared to subcutaneous fat. Visceral fat accumulates in the abdominal area, near vital organs and is metabolically active, thus increasing the risk of impaired glucose and lipid metabolism, insulin resistance and in turn chronic disease [202].

3.7.5 Physiological – Developmental Origins of Health and Disease

Over the past 25 years, following the initial work of Professor David Barker and colleagues, it has become accepted that during early fetal life aspects of a person's adult physiology and their long-term susceptibility to non-communicable diseases can be permanently determined [203]. This is described as *'developmental programming'* or the DOHaD [204]. This hypothesis states that the embryo in utero can modify how it develops (*plasticity*) to best fit the environment that it will be born into. This is an evolutionary mechanism referred to as predictive adaptive responses or PARs [203]. PARs may operate in the embryo, or later the foetus sensing maternal factors such as nutrition and using this to set metabolic criteria for the offspring that would match the predicted postnatal environment. However, if the pre- and post-natal environment are different, PARs may be maladaptive and increase susceptibility to adult-onset metabolic diseases [203]. Thus, DOHaD is a biological mechanism of *plasticity*, in which living beings respond to cues to adapt their phenotype to the environment [205]. Importantly, prenatal malnutrition with low birth weight predisposes a child to obesity, high blood pressure, heart disease and diabetes in later life [205]. Food insecurity is thus important to be considered through the lens of DOHaD, as it by nature increases risk of malnutrition. Further, section 3.6.2

concluded that food insecurity is positively associated with high body weight amongst women in HICs. This is concerning as pregnancy conditions such as maternal obesity and gestational diabetes are also associated with similar risks for the mother and her child [205].

3.8 Chapter summary

This chapter provided a critical overview of the concept of food insecurity by addressing the tensions within the terminology used across the academic literature. It did so by reviewing the concept of food insecurity and its four pillars. It drew on existing theories to explain health inequalities and explore how food insecurity is a re-emerging health inequality. This review of the literature highlighted the need for qualitative work to explore the underlying mechanisms linking food insecurity, dietary quality and body weight amongst food insecure women (and pregnant women) in HICs. It also highlighted the need to explore infant feeding practices within food insecure households given the mixed relationship between food insecurity and pre-school aged weight status. Moreover, there is a need to explore the qualitative literature for food insecure children's own voices of their health given the mixed relationship between food insecurity and weight reported quantitatively. Thus, the rest of this thesis builds on an existing body of work, contributing to furthering our understanding of food insecurity and health in HICs amongst a vulnerable population group. I do this by using the research aims identified in section 1.4 to guide my thesis.

CHAPTER FOUR

4 Chapter four – Original PhD, its collaborative nature, and reflections

4.1 Chapter overview

This chapter provides an overview of the original three-stage PhD proposal formulated during the first year of my PhD. It describes using a partnership approach to bridge the gap between research and practice, and then describes and reflects on using a researcher-in-residence (RiR) approach within a local authority setting as part of the scoping phase of the PhD. It moves on to present results from the scoping phase. It then describes plans originally set out to conduct an ethnography within a food bank in Gateshead, North East England alongside in-depth, serial interviews with pregnant women and mothers with children in the first 1001 days of life, accessing food aid services across Gateshead. Due to the COVID-19 pandemic, I made major adaptations to the PhD. Proposed options for a plan B are outlined and the revised plans are described in the following chapters.

4.2 Original PhD

This PhD used a partnership approach with Gateshead Council's public health team to address health inequalities in early life. The original PhD plan had three stages, described in more detail later in the chapter.

- **Stage 1**: Scoping phase, RiR in Gateshead Council's public health team
- **Stage 2**: Ethnography in a local emergency food aid service as a volunteer-researcher over 12 months
- **Stage 3**: Semi-structured, in-depth interviews with women accessing emergency food aid in Gateshead

4.3 Collaborative PhD

4.3.1 Partnership approaches

Partnership approaches to working in the field of health stem from an awareness of a lag between published research and its impact in practice; a 17-year lag between reported for evidence-based medicine [206]. This lag represents a *'know-do'* gap i.e., a separation between those who create and *'know'* evidence with those who make use of the evidence and *'do'* things in practice [207]. Conceptualisation of this gap over the years has identified two approaches to mobilising knowledge. The first approach was termed 'knowledge transfer' [207]. In this sense, knowledge is a product transferred from those who *'know'* to those who *'do'* through *'push'* and *'pull'* strategies. The *'know-do'* gap is addressed by a *'push'* from the research community to practitioners through guidelines and evidence-based summaries, and *'pulled'* from practitioners who are informed about the research process [208]. This approach has been

relatively slow in *'bridging the gap'*, hence knowledge transfer was re-conceptualised to *'knowledge creation'* or *'co-production'*. The idea that the most effective way to '*bridge the gap'* might be to co-produce knowledge is not new. Barton [209] (as cited in [210] pg. 1562) commented in a medical journal that *'the scientific man has been too scientific and the practical man too practical, and the result has been unfortunate for both'*. This second approach to mobilising knowledge sees knowledge as something that is socially constructed and emergent [211]. To bridge the gap through co-production requires creating a culture of partnership approach between those who *'know'* (academic community), those who *'do'* (practitioner community) and the decision-makers [211]. The premise of co-produced evidence is that knowledge is created *'on the ground'* which provides better insight into issues and makes the research directly applicable to the local context, therefore more easily incorporated into policy and practice locally, reducing time-lags [212].

Participatory approaches are a research paradigm enabling co-production of knowledge by bringing together academic and practitioner communities. Participatory research is characterised by wanting to solve practical problems, provide practical solutions and a commitment by the researcher to collaborate with stakeholders [213]. Co-produced research is by nature translational research i.e., it accelerates the pace of change in frontline practice or policy-making approaches towards those that are informed by the latest evidence-base [214]. As Marshall et al. ([213] pg.220) say *'for research to have impact, both knowledge producers and users need to be involved in its creation and application'*. Working in partnership to co-produce research helps overcome some difficulties that arise in influencing policy and practice [215]. These are accessibility of research (can it be understood?), lack of actionable output (research evidence describes the issue and its causes, without providing solutions), lack of application to local context (raising concerns that local context is counter indicative) and timing of the research evidence (not available when decisions are being made) [216, 217].

4.3.2 Partnership approaches in public health

In 2013, responsibility for delivering public health moved from the NHS to local government. The NHS and local government value different types of evidence and have different approaches to using evidence [218]. The NHS values evidence-based medicine in-line with academia, whilst local government traditionally use more tacit or *'soft'* evidence such as in-house research or local intelligence which is informally published or not at all [217]. In local government more than research evidence is needed to gain financial backing to implement change. First, it needs to be localised evidence [219]. These varying definitions of *evidence* represent one structural barrier to implementing research evidence into policy and practice. Public health issues are

embedded in wider social divides, therefore, working with public health departments involves a wide range of stakeholders each with their own perspective on the issue. Stakeholders might not agree on the research evidence and using a participatory approach to co-produce knowledge can help overcome this. In other words, by engaging stakeholders in developing the purpose and scope of the research (and throughout the process), the research is more likely to be applied i.e., accessible and deliver an actionable output [220].

Another structural barrier to research evidence influencing policy and practice is money. This is two-fold; both from a public health and researcher perspective. Austerity measures implemented in 2010 tightened local government budgets (section 2.6). Smaller budgets mean public health departments are (wisely) spending money based on what works. What works however, requires evidence that is not only scientifically rigorous but also relevant to the local context, and practically useful [217]. This type of rigorous and applied research is a costly process, often beyond local government budgets. On the other side, for researchers, the type of evidence required within public health departments might not make the research eligible for funding or meet the research excellence framework, a national assessment of the UK Universities' research performance. In other words, the research design might be at detriment to a researcher's career within the current incentive structures in academia. Although there has been a shift toward funding collaborative, potentially high-risk research, this is not the normal research design funding bodies fund [217].

Another barrier is timing. Research evidence timescales often do not align with the policy process that works much faster requiring a solution within months. Rigorous research takes time. One limiting factor is gaining positive approval from an ethics committee. This creates a tension as research evidence is not delivered at a fast enough pace to be available when decisions are being made in policy and practice. To overcome this issue a partnership approach between academic researchers (those who *'know'*) and public health professionals (those who *'do'*) is critical to be able to actively mobilise research evidence [221]. Whilst other disciplines have been using participatory approaches for years [222, 223], the field of health has not been as quick to adopt this paradigm. However, one model that has gained traction is the Embedded Research (ER) or Researcher in Residence (RiR) model [213]. ER or RiR are models of knowledge co-production within the participatory research paradigm. McGinty and Salokangas ([224] pg. 3) define ER as *'a mutually beneficial relationship between academics and non-academic, host organisations . . . [which involves] individuals or teams who are either university based or employed undertaking explicit research roles within host schools or other educational organisations, legitimated by staff status/membership with the purpose of*

identifying and implementing a collaborative research agenda'. A review of the literature for studies using an embedded approach found eight healthcare-related studies and nine non-healthcare related studies [211]. Two examples of the ER role within public health in local government are Cheetham et al. [225] and Duggan [226]. Cheetham et al. [225] used an ER approach over 12 months in the North East to evaluate an integrated wellbeing model; a preventive, asset-based approach that supported individuals, families, and communities to improve their health and wellbeing, whilst Duggan [226] was a PhD student using an ER approach to collect evidence to inform the development of initiative aimed to increased collaboration in children's services.

4.3.3 Researcher-in-Residence

The RiR model is a *'way of working'* to co-produce knowledge to meet the needs of the organisation [227]. The model can employ a range of different academic approaches, in this case an ethnographic approach was deemed appropriate for the PhD aim. The RiR approach is still in its infancy, hence Vindrola-Padros et al. [211] found that variation exists across studies regarding its defining characteristics. They propose a series of four key characteristics:

1. **Dual affiliation** of researcher with both an academic institution and an outside organisation, thus the researcher is working in a state of *'in-between-ness'*
2. Development of **relationships** with staff at outside organisation, thus the researcher is seen as a member of the team
3. **Co-production of knowledge** between researcher and local teams, thus it responds to the needs of the host organisation
4. Building **research capacity** in host organisation

Figure 5 illustrates the iterative stages of using RiR approach [227]. It can be thought of as three distinct phases through which the four key characteristics of the model become clear. Stage 1 comprises a scoping or introductory phase where the researcher develops relationships with staff, becoming seen as a member of the team. Building relationships moves beyond immediate team members, to those in wider networks relevant to the research interest. This enables the researcher to understand the needs of the host organisation making the research directly applicable to the local context. Stage two is built upon these relationships and knowledge. Research is shaped with input from practitioners on the ground and actionable findings communicated. Stage three aims to incorporate the findings into change in thought, attitudes, values, and practice. This step requires further *'on the ground'* insight into appropriate ways to communicate with certain groups. Through being embedded within the host organisation, the

researcher will be aware of the multiple perspectives on the issue and able to identify any potential tensions in incorporating or communicating findings.

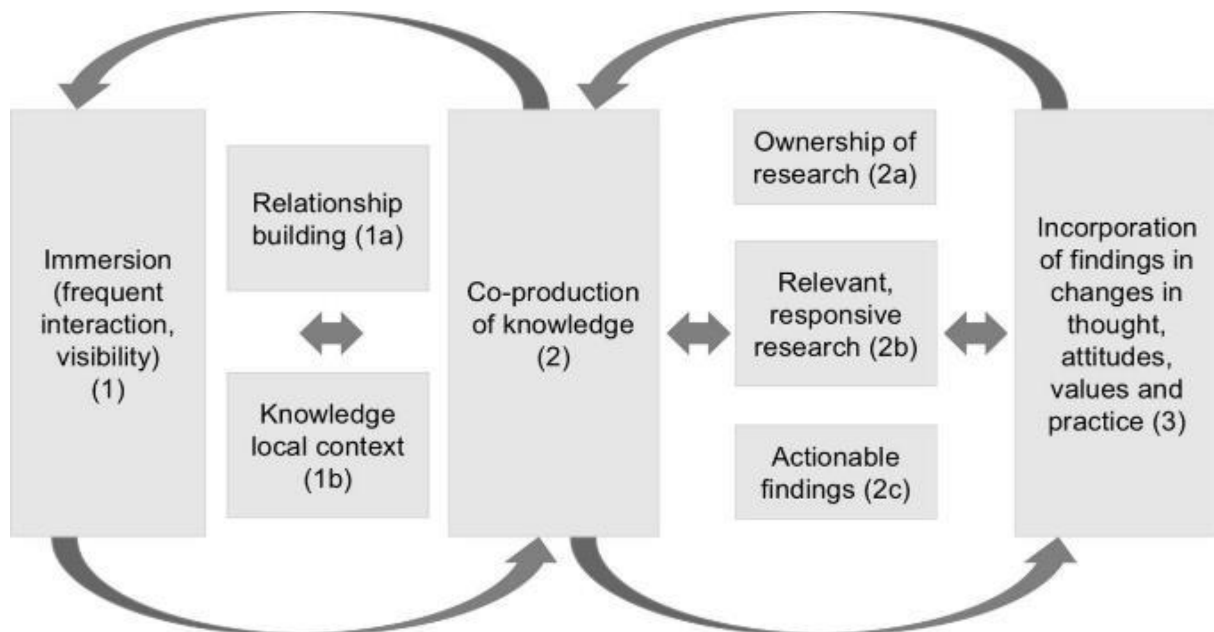

Figure 5: Researcher-in-Residence Model [227]

4.4 Stage one: scoping phase

During the scoping phase I was an embedded within the public health team three days a week for five months. As a RiR, I had a desk within the team office, email account, access to files and meetings within the Council. Using a RiR approach, we hoped to facilitate the co-production of evidence that was sensitive to the local Gateshead context, in line with the priorities of Gateshead, and ultimately help tackle food insecurity and make improvements for women and children unable to access sufficient healthy food within the borough. The values and challenges of applying this model in practice are discussed in section 4.5.

The objectives of the scoping phase were:

- To understand Gateshead as an area, the food aid system, and wider networks
- To build relationships with people in the food aid system, and wider networks
- To understand how they make decisions and how evidence is used to influence policy

4.4.1 Scoping Gateshead's food aid services

To understand Gateshead as an area and the food aid system was essential to finding a relevant site for conducting a 12-month ethnography; both in terms of physical space in the setting and population group attending services. I had conversations with members of the community who pointed me to resources to create a list of all services offering free or subsidised food in

Gateshead including organisations involved in the summer scheme helping to prevent holiday hunger, 'Fill the Gap'. As the list of services offering free or subsidised food grew (n= 37) it was clear some were not appropriate for my study i.e., aiding the homeless or elderly. It was also clear that different models of food services existed in Gateshead, for example, pay-as-you-feel cafes, food banks, food co-operatives, community gardens. Some examples of these services in Gateshead are listed in table 1. I decided to narrow my focus to services offering emergency free food parcels in Gateshead (n= 8). People using these services were likely to meet one of the PhD's main eligibility criteria of living with food insecurity given that they were accessing free food parcels, a proxy marker of severe food insecurity. A map of Gateshead populated with services offering free food parcels plotted against overall index of multiple deprivation for 2019 and number of FSM eligible pupils, is shown in figure 6.

I contacted each service co-ordinator and visited them. It was an opportunity to introduce myself, see and learn about their service. It was also an opportunity to understand the model of service they had i.e., food bank, food cooperative or voucher system or membership system. This information along with figure 6 helped provide a rationale for choosing the service to undertake stage 2 of the research, ethnographic observations as a volunteer-researcher. This decision was based on both empirical evidence and practicality. Specifically, the reasons for selecting the service for my researcher-volunteer role were: (1) They are based in one of the 10% most deprived wards of Gateshead, (2) They were an independent food service; and current literature lacks qualitative studies set within an independent food aid service, most of which had been conducted with Trussell Trust Foodbanks in the UK, (3) Compared to the other options, this site physically had space for an ethnography and offered a regular food parcel service and, (4) Of the independent services offering food parcels, this one didn't have the highest, but had one of the greatest numbers of women and children using the food aid service based on my scoping work whilst co-located at Gateshead.

Terminology	Definition	Examples in Gateshead
Food Co-operative	Community owned, operating as food distributors offering a 3-day emergency food parcel. Proof of need via voucher varied. Free membership required.	Bensham Community Food Co-operative Felling Food Network Lobley Hill
Foodbank	Providing services similar to a *'food bank'* but registered as a name to the Trussell Trust. Proof of need with a voucher is required [228]. The Trussell Trust is a charity whose mission is to end hunger and poverty in the UK. Founded in 1997 it began providing food parcels, creating the UK Foodbank Network in 2004 [228].	Gateshead Foodbank -Gateshead -Blaydon -Birtley
Community fridge	Located in a public space, often a community centre, community fridges are places where food surplus is shared for free.	Birtley Community Partnership
Soup kitchen	Provides onsite emergency free food to low income, high need service users	Soup Lunch
Community café	Provides low cost or subsidised food, often with very low costs and staff overheads [228].	Dunston Community Café
Community centre and 'drop-in' centre	Various forms of food provision, free or subsidised, as part of a wider support system, which can be targeted at demographic or socioeconomic groups [228].	Ebert's & Pattinsons House St Chad's Birtley Community Partnership Peace of Mind
Community gardens and growing initiatives	Community-focused, and often community- initiated, horticultural programs. Aim to increase access to organic healthy food and may train disadvantaged groups in horticulture. May also help to support biodiversity and improve green spaces.	Comfrey Project The Cosy Crows Café Cook 2 give lunch
Social food charity	Offers home-cooked food made from surplus and locally grown ingredients, to be eaten communally, for very low cost or on a pay-as-you-feel basis.	The Cosy Crow Café
Pay-as-you-feel (PAYF)	A participative pricing mechanism that delegates the price determination to each customer and requires the seller to accept any price. Also known as *'pay-what-you-want'*.	Gateshead Family Church The Cosy Crows Café Birtley Community Partnership
FareShare	A charity that redistributes fresh, quality and in date surplus food from the food industry to other charities. Membership basis. Weekly or bi-weekly deliveries.	Delivered to many of Gateshead's services

Table 1: Terminology, definitions, and services within the food aid system in Gateshead (adapted from Madeleine Power [228])

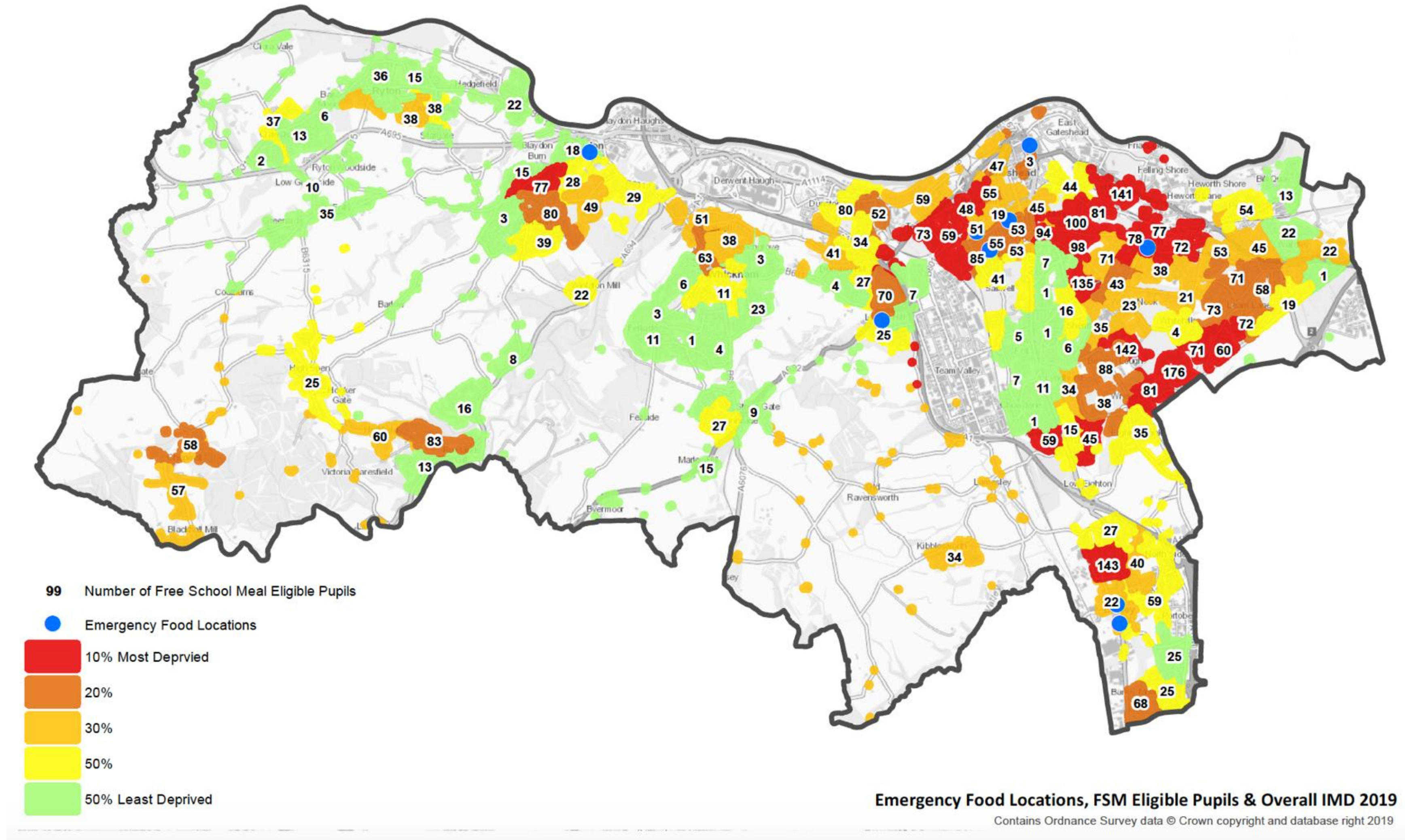

Figure 6: Map of Gateshead with eight services offering free food parcels plotted against overall Index of Multiple Deprivation for 2019 and number of free school meal eligible pupils

4.4.2 Gaining access for an ethnography

Put simply ethnography is the study of a social system, culture, social life, and activities of daily life through observation [229], although the literature shows huge variety in its definition. In the context of this doctoral work, its use would potentially enable the breadth of sociocultural factors that underpin both food and poverty to be holistically explored and contextualised [230]. Ethnography's roots in British social anthropology, American cultural anthropology and the qualitative sociology of the Chicago School [231] provide us with some characteristics from which good ethnographic practice is based upon. Ethnography evolves in design through the research process and uses an iterative inductive-deductive process [231]. It is a holistic research approach in that it views the social issue at hand as a whole, within context to get a basis of explanation of the observable issue i.e., the research occurs in the field [232]. The ethnographic text respects the irreducibility of the human experience, acknowledges theory and acknowledges the researcher's own role and views [231]. Ethnographers undergo an embodiment activity through fieldwork to gain an emic view as well as etic view to understand the everyday life, practices and beliefs of the people it is studying [233]. An emic perspective is one from the inside of a culture whilst an etic perspective comes from the outside of the culture [233]. Although ethnography has been used in health research for many years, some studies dating back to 1932, only since 2010 has there been a real recognition that it should play a vital part in adding to the evidence base of nutrition and health research [230, 234].

Over the last century participant observation (PO) has been one of the more distinctive characteristics of ethnography, although some now argue the superiority of other methods [235]. It is a method that in its broadest sense encompasses being with people, observing people and talking to people in naturalistic settings [233]. PO requires the researcher to take on the role simultaneously of both *'insider'*, acting as a participant experiencing events from within, and *'outsider'*, observing, detached, making notes and analysing. For me, gaining access to a site where PO could take place was a multifaceted process. It was first important to understand the area where the research was to be carried out and all potential sites (see previous section 4.4.1). Also important was building relationships with key stakeholders in the community, to gain trust and respect; a process that took time. The RiR model helped facilitate the choosing of a site as I learnt about what services women and children experiencing food poverty visited and which sites had the physical space sufficient to carry out PO. However, this privileged access did not guarantee a secure site for PO.

Another consideration was whether to have single or multiple sites for PO. Multi-site ethnography is not uncommon. Thompson et al. [236] carried out observations across four

different food banks over five visits, totalling nine hours. In addition, nine separate observations were carried out over 20 hours with local authority organisations. Having multiple sites for observations was essential in her research as it was looking at the food banking system to understand the health and well-being challenges of this system in London. Using one site would not have been sufficient to cover such a large, diverse area. In my research, multiple sites were an option, this could have enabled an understanding of geographical trends. However, spreading my time across multiple sites may have impacted the value of PO and gaining the *'insider'* perspective across such a small geographical area. Strong relationships with individuals might not have developed due to less frequent visits, resulting in arguably a less in-depth analysis compared to undertaking a researcher-volunteer role in one site. Less frequent visits might have also jeopardised the researcher-volunteer role, as food aid services asked for a commitment to regular (weekly) attendance like other volunteers. Garthwaite et al. [34, 237-239] previously used this more active form of PO within a single foodbank to explore health of foodbank users in Stockton-on-Tees.

4.4.2.1 Ethical considerations of an ethnography

Part of gaining access to a site for an ethnography involved discussions with, initially, my supervisory team, followed by the potential site coordinators to cover ethical considerations, responsibility, and safety. Ethnographers often find themselves in liminal situations on the margins between different worlds of themselves and *'others'*, often leaving a feeling of insecurity and anxiety [237]. Lindolf and Taylor [240] explain that ethnographers should be curious and open to the unexpected without an expectation that these feelings will be resolved. An offer to participate in an activity whilst observing can be unexpected, requiring the researcher to quickly think whether this is appropriate or not [240]. As a researcher, certain boundaries can be implemented to mitigate situations where the ethics or researcher's responsibility may be tested. For example, I felt it was important for me to select a site where I was not involved in choosing which women or children use the service, or where I was not delivering personal care and thereby creating a sense of dependency. This made taking on a formal volunteer ethnographer role beneficial as responsibilities were set [237, 241, 242]. Without a formal volunteer role, I would have needed to have negotiation talks prior to commencing the role to ensure that the service was clear on the research priorities, and that I had the ability to refuse to take part in an activity that provided conflict with those priorities; discussions that would have continued over the course of the ethnography.

During PO in the field many people come and go. Making my identity as a researcher known to everyone who accessed the site or referral agencies in contact with the site was important.

Other researchers have provided information sheets rather than individual consent forms; something I felt was more meaningful in a community food place setting too [237, 243]. Having conversed with the collaborative service we decided that I would introduce myself, and they would introduce me to any members and any external visitors as a *'student from Newcastle University here doing research, if you are able to help Zoë then go and speak to her'*. I would provide information sheets at the welcome desk for anyone interested further. Whilst on site, field notes would always be kept confidential and on me, not left out for others to view. When time capacity allowed, I could spend time writing notes without others within close distance. We also agreed that I would rotate roles in the food bank, so I had experience of each dynamic with members accessing the service.

4.5 Values and challenges as a researcher-in-residence

This section reflects on the values and challenges of being a RiR within a local authority's public health team and as a PhD student. Learnings from this experience may help further develop the model for use in the future within health, given the relative novelty of the model in this field.

4.5.1.1 Public health environment

Key for me was immersion into the public health environment; being physically located in the public health team in the civic centre, with a desk space, IT login and operating as a staff member. Office desks were arranged in bundles according to teams i.e., admin, public health consultants, public health practitioners and Making Every Contact Count Team. I instantly felt like a valued part of the team as my desk was situated with team members I worked closest with. This position gave me a sounding board to bounce ideas off with the team. As a first year PhD student it was invaluable listening to conversations in the office about on-going projects and/or campaigns and listening to those who had responsibility for delivering and commissioning services, noticing the language being used. I was able to attend team meetings and once settled informally present to the team or provide updates at meetings, gaining informal feedback. This helped me begin to understand where my PhD sat within the wider context of public health and understand Gateshead's priorities as a local authority.

4.5.1.2 Relationships

A key characteristic of RiR is developing relationships with staff, to the point where you are part of the team [211]. Also important is that people from different levels within the (public) health system are invested in the research process to enable co-production of knowledge with a sense of ownership of the research. To facilitate networking a health improvement practitioner acted as a 'champion' at the Council setting up introductory meetings with the team as well as

other local authority staff who would have a link to the research. This led to a snowballing effect and establishing a wider network of contacts. This included the neighbourhood team, 0-19 years services, health visitors, paediatricians, head teachers, councillors, voluntary sector organisations, CCGs and other non-governmental organisations. Members of the Council's neighbourhood team gave me tours of relevant sites linked to my research on their patches, introducing me to co-ordinators of food services. These conversations and in turn being invited to attend Gateshead Community Food Network helped raise my awareness of local food and poverty issues and understand the varying perspectives on the issue.

Having a *'champion'* was invaluable to me as an RiR. It meant that from the start I had a supervisor figure in the Council who helped me navigate the new and very different environment. Interactions with each team member in initial meetings was invaluable to helping me settle in. I would not have been able to create a connection or understand each team member's role as quickly from just chatting in the office, which was a busy space. The first month was a busy period, there was a lot of new information to process. Having a champion meant I went *unblinded* into meetings, with some understanding of the sorts of things each person could help me with, with regards to my research. It gave me guidance on how to approach people (I've learnt the approach is as important as the information you must present). It also helped me gain access to key figures like Councillors because my 'champion' acted as a kind of reference for me.

4.5.1.3 Getting to know Gateshead

Members of the neighborhood team took me out to relevant sites on their patches linked to my research, introducing me to coordinators of food services. This helped me get to know Gateshead at a physical level. I also visited sites on my own to introduce myself to coordinators or to further build the relationship and get insight into which services women and mothers with young children were accessing. However, being embedded meant I also had access to the public health team's shared drive, to their needs impact assessments which provided local data, as well as the team's data expert, who helped me map the services offering free food aid in Gateshead, figure 6. All of this helped in shaping the focus of my research. For instance, during the scoping phase I was coming across a higher proportion of women with children 2-5 years than first 1001 days. This information helped inform the decision to widen the scope of the recruitment for stage three of the PhD to women with children 0-5 years; fitting the public health priority 'Birth to Five Matters'.

4.5.1.4 *Dual affiliation*

A value but also a challenge during the scoping phase was having a dual affiliation, and this boundary between being an academic researcher and a staff member within the Council. The challenge was that during the scoping phase I felt more like a public health member of staff than an academic researcher, the team were so welcoming, and I was based at the Civic Centre 3 days a week. This led to me feeling a sense of isolation from the academic arena. Perhaps because I was working on my own as RiR on this project, a default of being a PhD student, which in and of itself can be a lonely task. To overcome this, a few months into the scoping phase, my supervisors and I engaged in better communication with more regular email updates and whole team meetings, which provided me with the support I needed. As I was working alone maintaining a researcher diary was particularly helpful in processing my thoughts and experiences.

4.5.1.5 *Mutual benefit*

McGinty and Salokangas's [224] definition of ER emphasises *'a mutually beneficial relationship between academics and non-academic, host organisations…'*. An important aspect of RiR, was whether the relationship between Gateshead Council's public health team and myself has been equal, if I contributed enough. As Duggan [226] states it is difficult to determine parity due to the diverse and intangible contributions that were exchanged. Gateshead Council gave me a desk space, IT login and access to seminars, meetings, and wider teams in the Council all valuable to my research. In return, I helped plan and facilitate a Healthy Weight Workshop on implementing a whole systems approach. I wrote a business case linked to access to healthy food in Gateshead which involved me creating a survey distributed to the public to determine need, mapping the independent fruit and vegetable groceries in Gateshead, and writing a business case. I shared information for other meetings linked to healthy weight, food, and poverty, as well as sharing early findings of my research at team meetings. Due to the COVID-19 pandemic, the RiR role was disrupted. From my perspective, I believe that there was adequate contribution from both party's pre-disruption from COVID-19, although mutual engagement has continued since (section 11.2).

I felt pressure following in the footsteps of a more experienced researcher who had undertaken an ER role within the same local authority and team. Like Duggan [226], a fellow embedded PhD student, I was conscious that although I had research training, parts of my PhD topic were new to me, and I had not yet undertaken a significant piece of research or published any peer-reviewed work to gain credibility. Initially I had feelings of doubt in what I could contribute to the public health team. These subsided as I began to get engage in my PhD scoping phase and

simply show up to meetings and begin to understand the variety of ways in which I could contribute to the team. For instance, having conversations with team members about the research resulted in food banks linking with library services for children's books. Further, I was able to give team members advice on searching literature for their work and referencing.

4.6 Ethics

Prior to phase one of the PhD starting, I had a few joint meetings with the director of public health and my supervisors to agree on the expectations of this collaboration. For example, what support would be provided by Gateshead Council, the intended effect of my role as RiR, supervisions, contribution from both party's perspectives, duty of care and intended outputs. I undertook the relevant 'new staff' trainings when starting at Gateshead Council, including modules discussing their standard operating procedures and policies on health and safety, working in community in a team or alone, confidentiality, and data protection. For stages two and three of the PhD, I received a positive ethical approval from the Faculty of Medical Sciences Research Ethics Committee part of Newcastle University's Research Ethics Committee (Ref 1876/1149/2020 – see appendix A). Given the community aspect and vulnerability of the women I was due to be working with in Gateshead, I sought additional approval from Gateshead Council's Research Governance team and was given a positive ethical opinion.

4.7 Impact of COVID-19 pandemic on PhD – proposed plan B's

Figure 7 presents a timeline mapping the impact of COVID-19 on the original proposed work discussed thus far in this chapter, and the steps to a revised thesis fieldwork and focus. The COVID-19 pandemic brought unexpected challenges to the original PhD plan. On Tuesday 17th March 2020 Newcastle University and Gateshead Council implemented protection measures against COVID-19, shifting to home working. On 23rd March 2020 UK Government imposed lockdown measures to prevent the spread of COVID-19. These protection measures impacted my research plan. The nature of the original plan was community based, involving face-to-face contact, an option no longer feasible or appropriate. I received a positive ethical approval, 29th March 2020 for stages two and three of my original PhD projects. This approval came at a time when there was still uncertainty regarding a timescale for data generation and lockdowns. To address concerns, I sought advice from my supervisory team and continued conversations with a co-ordinator from the ethnographic site for stage two of the project. Conversations with them affirmed that the role of volunteer-ethnographer was not appropriate at that time. The food co-operative was still open but on a smaller scale, with deliveries made where possible. Week by week they were determining feasibility to remain open. Conversations with my collaborators, Gateshead Council, affirmed that research was not a priority as they

moved into emergency, responsive procedures to handle the pandemic. Stage two of the original PhD, the ethnography, was at this point deemed no longer viable.

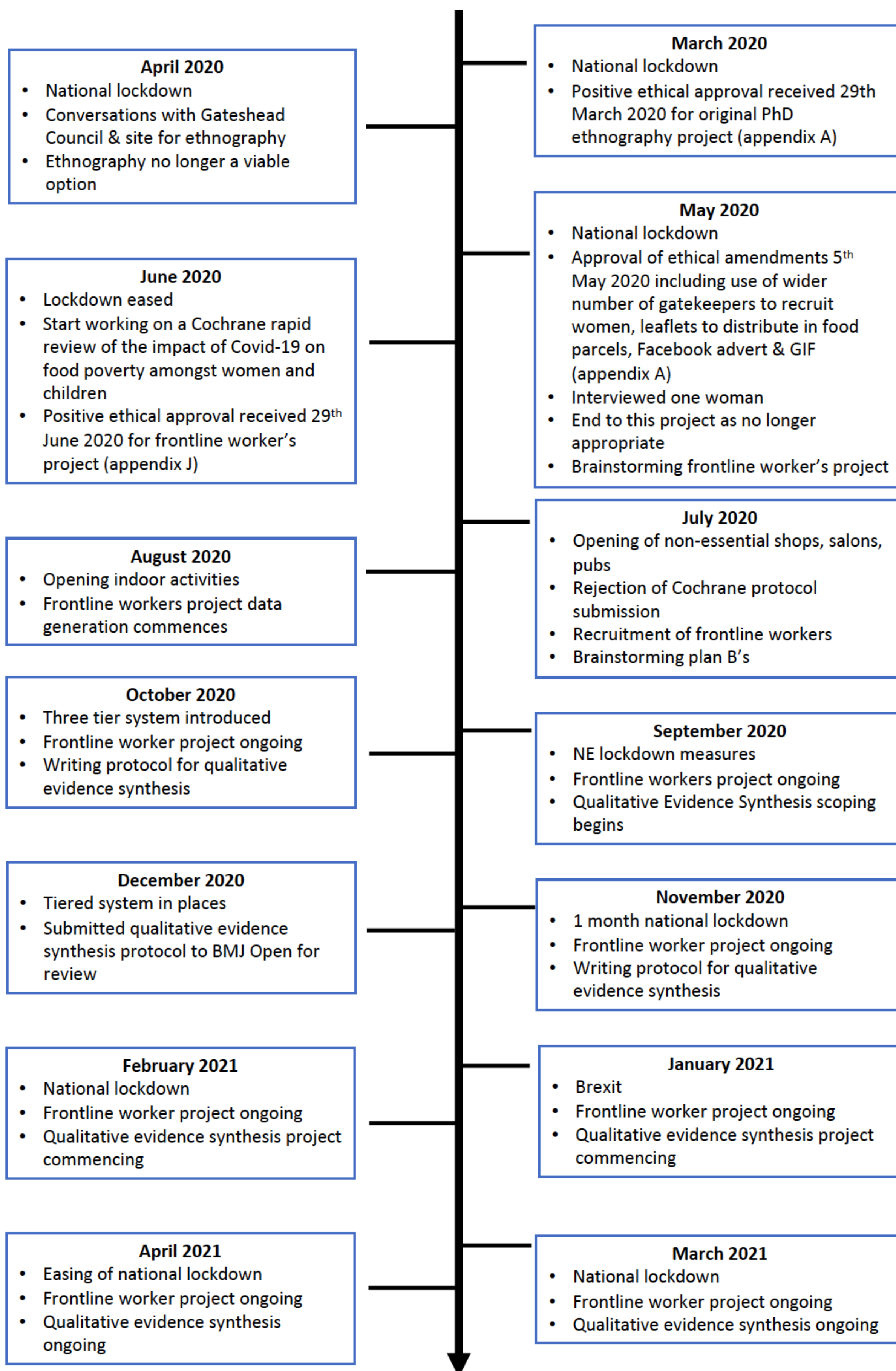

Figure 7: Timeline mapping the impact of COVID-19 on the original proposed work and conduct of revised thesis fieldwork and focus

Several plan B options were identified in response to the impact of COVID-19 on my PhD. Careful consideration and exploration were given to five options (Table 2). Option one and two were both continuing with the original plan, but delaying its start point. For option one (interviewing women accessing food aid services), I put in an amendment to the ethics application and, after administrative delays due to COVID-19, received positive ethical approval 5th May 2020. This enabled me to alter the recruitment strategy to using social media advertisement, pamphlets handed out with food parcels in addition to food aid co-ordinators as gatekeepers. Pursuing this option would not change the fact that I was no longer able to recruit face-to-face, build trusting relationships with women in community and reduce potential power dynamics. This option would not eliminate the challenges in recruiting a vulnerable group of women through existing gatekeepers either. Indeed, during a pandemic which saw a rise in the number of people accessing food aid [135], gatekeepers had increased pressures of their own, further limiting engagement with research. Advertisements for the research were put out across Gateshead Council's social platforms alone reached 16,675 people on Facebook and had 572 impressions on Twitter. The e-poster and GIF were posted in local Facebook groups such as 0-19 years' service page and local food aid groups' pages. Only one woman made contact after seeing a Facebook advert through a local group page and was interviewed for the study (see appendices B-D for this study's documents). Gatekeepers from eight food aid services offering free food parcels in Gateshead (see figure 6) were contacted to request their permission to distribute pamphlets. Pamphlets would be distributed with food parcels to families with young children 0-5 years or women of childbearing age. Five organisations responded and 100 pamphlets were distributed. Gatekeepers of two organisations wrote letters with the pamphlets to encourage women who they thought may be in a position to participate. These gatekeepers later advised that they felt the increased vulnerability of women during a pandemic and sensitivity of the topic meant that those women they had in mind to participate were unable to do so at this time. Other gatekeepers felt they were unable to distribute pamphlets or help further due to either the temporary closing down of their service, or the adaptations to a delivery model service which meant they no longer had a conversational relationship with service users. From my perspective, it seemed clear that it was not an appropriate time to conduct option one, interviews with women experiencing food insecurity, in the midst of a crisis.

Options	Advantages	Disadvantages	Notes
1. Original plan adapted – interview women accessing food aid services moving face-to-face interviews with women to online or telephone	• Gather in-depth individual data over two time periods • Capture lived experience of food insecurity over a pandemic • First study of its kind in the European context	• Difficulties with recruiting • Reluctance of some gatekeepers due to timing of study and their own pressures • Increased vulnerability of women during a pandemic and sensitivity of the subject	Twitter reach = 1572 impressions Facebook reach = 16675 Facebook interaction = 112 Pamphlets delivered in food parcels to women /families = 100 1 woman responded & interviewed **Challenge**: low response rate recruitment
2. Original plan adapted – shortened ethnography when food aid services re-open	• Volunteer-researcher role gathering participant observations • Gather emic perspective • Engage with services on the frontline throughout the process • Member-checking of data & developing theories	• Safety issues during a pandemic • Obtaining ethics from university • Redefining consent process • Less interaction with those accessing services due to social distancing and/or delivery model of service • Unable to experience diversity of roles within the foodbank due to strict 'bubbles' at work regulations	• Conversations had with ethnographic site during lockdown one (March-July 2020). They were closed for periods and sporadic upon re-opening. • It was felt that an ethnography at this time would not best reflect the work they do
3. Review	• Gather pre-existing primary data • Desk-based, own time management • Removes issues with recruitment • Safe to conduct in a pandemic • Novel review contributing new theory, generating new research questions, providing robust evidence for health and policymakers, potentially reducing duplication of studies	• Not 'original' data for the thesis • International / National level data	• Method has been used within the health discipline to provide robust evidence to inform policy-making decisions • No recent qualitative reviews were found focussing on PhD aims
4. Frontline workers within the food aid system	• Gather individual data • Understand food insecurity from a different perspective • Diversity of experiences within this group • More likely to have consistent access to credited mobile or computer device for communication • Easier to access group	• New ethics application • Consideration of consent process • Pressure of working on the frontline during a pandemic, responding to a reportedly worsening situation	• Ability to advertise study through social media platforms • Explore the changing landscape of food insecurity from those working on the ground • Healthcare professionals were difficult to recruit despite talking with gatekeepers for contacts as many staff re-deployed in NHS • Conversations with collaborators deemed headteachers, teachers and schools' nurses inaccessible to interview following attempts

Options	Advantages	Disadvantages	Notes
5. Media analysis	• Gather pre-existing individual lived experience data or analyse rhetoric • News media analysis using Nexis database • Potentially no ethics required • Desk-based, own time management • Removes issues with recruiting • Safe to conduct in a pandemic	• Difficulty setting boundaries on volume of data when accessing online forums or social media sites, and verifying people behind profiles	• Mumsnet, Reddit, Facebook groups, Twitter were all potential options for data

Table 2: Plan B options

Option two meant delaying the start date of the ethnography. This option would allow the RiR model to continue in its original form, building upon the scoping phase already completed. There was no major work to be done in setting up the project as positive ethical opinion had already been given, but minor amendments could be made if necessary. Conversations with frontline workers during the pandemic, however, emphasised how sporadic independent food aid services were in remaining open. It was felt that an ethnography at that time would not best reflect the work they do. Given the limited time left of the PhD and the continuing uncertainty around the likelihood for an ethnography (and interviews with women) other options were considered.

Option three considered reviewing pre-existing primary data. In June 2020 my supervisory team and I discussed conducting a rapid review titled 'Impact of COVID-19 on food poverty amongst children and mothers in the UK'. However, after putting together a proposal, Cochrane decided not to pursue the protocol. This allowed the team and I to re-focus option three focusing solely on the qualitative evidence base; a methodological approach more aligned with my overall PhD aims and objectives, albeit widening from Gateshead, North East England to a HIC context. This approach would enable me to continue to explore the lived experiences of food insecurity on the health of women and children, despite being unable to collect primary data myself. It would also bypass the issue of recruiting during a pandemic whilst still contributing robust evidence to inform policymaking using an approach previously used in health research.

Option four would involve recruiting frontline workers from within the food aid system either for an interview or as part of a focus group. The rationale was that frontline workers would have first-hand experience illustrating how women and children experience food insecurity, as well as their own experiences of being on the frontline within a rapidly changing public policy landscape. This option would provide some conceptual challenges. For example, recruiting frontline workers would alter the conceptual focus of the research study from a study focusing on lived experience of food insecurity and its impact on health to those of frontline workers working within the food aid system witnessing the health impacts. Recruiting frontline workers with a background or position as a healthcare professional might help overcome this challenge given that they are heightened to the health impacts. A benefit to recruiting frontline workers as participants is that they were likely to be more approachable and less vulnerable during a pandemic than food insecure women. Frontline workers wouldn't require gatekeepers, could be approached independently and likely have IT equipment with consistent access to internet or online communication platforms such as Zoom or Teams. The scoping phase of the PhD was thought to help facilitate this project as my network included a diverse range of frontline

workers who could help advertise recruitment or be interviewed. Option four provided an alternative route to one of the longer-term outcomes of the PhD of helping a local authority understand food insecurity to improve the services and resources available for food insecure women and children. A positive ethical approval for this project was received in June 2020.

Option five considered a media analysis. This was a desk-based option eliminating issues with recruiting and potentially negate any requirement for ethical approval. There were two routes a media analysis could take. One gathers individual lived experience data through social media platforms or forums such as Facebook, Twitter, Mumsnet and Reddit. Some challenges with this approach include finding a data source with individual level data that fits the PhD research aims and objectives. Another challenge is the difficulty in setting boundaries around the volume of potential data included, especially when using social media sites like Twitter, where volumes can be vast within a 24-hour period alone. Secondly, as a researcher you are limited in knowing who is truly behind the comment and being able to verify the participant is indeed who they say they are. Social media platforms such as Twitter could also be analysed to see what conversations were ongoing within a period providing a snapshot of conversations about food insecurity [244]. Alternatively, databases could be used to search for newsprint media to analyse how they construct and frame messages around food insecurity. To date, much of the published literature has focused on media coverage of the food bank phenomenon or poverty and families' experience according to newspaper media [245-247]. No research at the point of discussing plan B options had attempted to analyse media coverage within the first 1001 days of life (I subsequently co-supervised an undergraduate nutrition student on a project titled: UK news media portrayal of mothers living in food insecurity).

Following attempts to continue with my original PhD plan, and to design a protocol for a rapid review, and after considering embarking on a media analysis, ultimately options three (a qualitative evidence synthesis) and four (interviews with frontline workers) formed the remainder of this thesis.

CHAPTER FIVE

5 Chapter five- Qualitative systematic literature review and meta ethnography

5.1 Chapter overview

To date most reviews exploring the effects of food insecurity on nutrition and nutrition-related health outcomes have reviewed quantitative studies (see chapter three). An initial scope of the qualitative literature highlighted a smaller evidence base that sought to understand the relationship between food insecurity and nutrition-related health outcomes from lived experiences. What was also missing was a systematic analysis of these experiences since the 2008 global financial crisis, a key moment which catapulted prevalence of food insecurity and food aid use. This chapter describes a qualitative systematic literature review and the methods used to synthesise the data within and across studies. The results are discussed in chapter six and chapter seven.

5.2 Methodology: Qualitative evidence synthesis & meta ethnography

A systematic review is a process of searching, sifting through, reading, quality checking and describing relevant evidence for the posed research question [248]. A qualitative systematic review was chosen for this research given the qualitative nature of the PhD. Synthesising evidence is a distinct process involving extracting data from each individual included study and interpreting and representing these studies in a collective form [248]. Qualitative evidence synthesis is the broad umbrella term for several different approaches to synthesising qualitative studies. Approaches range from summative and aggregative to interpretive methods. Summative or aggregative approaches involve transforming qualitative data across included studies into quantitative data, answering *'what works'* type of questions [249]. Interpretative methods lead to descriptive level findings, summarising themes and concepts across included studies [250]. Moving beyond this, synthesis can lead to development of new theory by considering the interpretation of data from different contexts; in this review public health nutrition and sociology of health [251]. Development of new qualitative evidence synthesis (QES) methodologies have occurred in response to the needs of policymakers and healthcare professionals wanting to answer questions beyond *'what works'* [251]. QES is furthering understanding on a phenomenon of interest, answering how and why questions. This review does this by seeking to understand food insecurity in greater depth from lived experiences of women and children experiencing it.

Developed by Noblit and Hare [252], meta ethnography is one of the most developed and structured methods to synthesise qualitative findings. It was born out of their attempt to synthesise five ethnographic studies for educational policymakers [252]. Meta ethnography places studies side by side to see how key themes can be translated between studies whilst

considering similarities and differences across varied contexts. Translation refers to a process of systematically comparing the meaning of themes and their relations across study accounts to identify a range of themes [253]. This interpretive approach moves beyond describing or aggregating findings, instead aiming to *'synthesise understanding'* [252]. Meta ethnography has seven-steps: 1) Getting started, 2) Deciding what is relevant to the initial interest, 3) Reading the studies, 4) Determining how the studies are related, 5) Translating the studies into one another, 6) Synthesising translations, and 7) Expressing the synthesis [252].

A key feature of meta ethnography is that *'metaphors'* (other terminology includes concepts, themes – from herein themes is used) can be translated across studies whilst comparing similarities and differences [250]. Central to meta ethnography is preservation of the relationship between themes and their meaning. This is achieved by using the same word for word terminology authors have used, or using idiomatic translations of the meaning of the text, and extracting relevant study details of research setting and design to contextualise the synthesis [250]. When applied to appropriate research questions it is able to explore the range and depth of individual participant's experiences and accounts, whilst preserving context and meaning during synthesis [254]. There is no *'gold standard'* way of conducting meta ethnography. Reporting guidelines have emerged to improve transparency about the synthesis process and maximise meta ethnography's potential to contribute to the evidence base of various disciplines or applied settings [255].

The synthesis processes can take three forms. Studies can relate to one another in a reciprocal translation (directly comparable), refutational translation (directly oppose) or together they may form a line of argument [250]. This approach to synthesis enables in-depth exploration of themes from individual studies to be related together by the researcher [255]. Themes relevant to the review question are extracted from the studies and organised into Schutz's notion of first-second-third order constructs. First-order constructs are direct quotes from participants. Second order constructs are author's interpretations of participant's experiences. Third order constructs (also, a higher level of analysis compared to other forms of QES) are the review researcher's own interpretations of the first and second order constructs into a new model or theory [252]. Third-order constructs represent the unique aspect of meta ethnography compared with other qualitative synthesis, a new level of interpretation rather than aggregation, taken from second-order constructs that are also used as raw data. Figure 8 provides an applied example of Schutz's order of constructs.

First order constructs	Food insecure women's experiences and accounts of their nutritional health & wellbeing
Second order constructs	The author's views and interpretations of women's nutritional health & wellbeing (themes and concepts in study)
Third order constructs	Views and interpretations of the synthesis team (metaphors and key concepts)

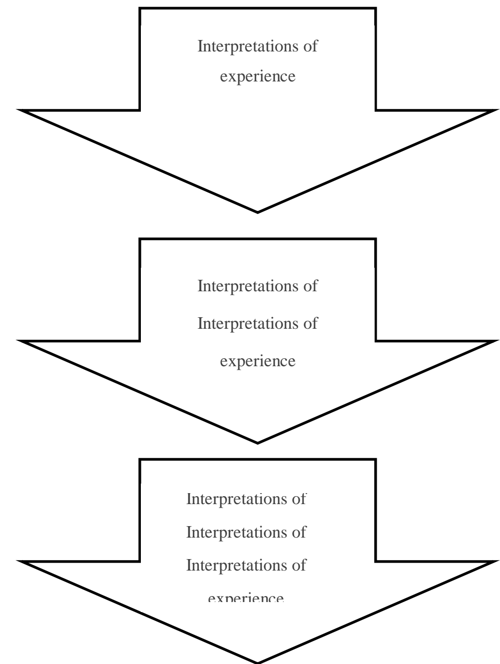

Figure 8: Working definition of 1st, 2nd, 3rd order constructs for research question one regarding women (drawing from Noblit & Hare's and adapted from Malpass et al. [256])

Many meta ethnographies use Schutz's notion during the analysis stage, but its usefulness remains unclear [254]. Its usefulness is unclear because accessing participant's experiences (first-order constructs) in published studies is problematic [254]. Authors have selected participant quotes from the dataset, what the meta ethnographer reads does not reflect the totality of the participant's experiences. Author's interpretations (second-order constructs) can be more insightful to the whole dataset if interpretation rather than description is provided. Difficulties can arise in distinguishing between first and second order interpretations and the level of influence on the author's interpretations [254, 257]. Further debated is whether and how to critically appraise studies, see section 5.4.4 for discussion.

In my field, meta ethnography has been used as a synthesis approach in reviews, for example, exploring young people's experiences of disadvantage [258], exploring how low-income mother's coping strategies in poverty shape the place of food in the household [169], and understanding lay perspectives of health inequalities [259]. Attree [169] states that using a meta ethnographic approach enabled a higher level of conception, generating new knowledge to the evidence base, in turn contributing to policy agenda. Meta ethnography was chosen as the method of synthesis in this review through informed conversations about the nature of the evidence available, the review questions and purpose (22).

5.3 Step One – Getting started

An initial scoping phase found little qualitative literature around food insecurity, pregnancy, the first 1001 days of life and nutrition. Papers were limited to food insecure women's accounts of infant feeding practices for which there was an ongoing review reported on PROSPERO (The International Prospective Register of Systematic Reviews) [260]. I widened the search to include pre-school children 0-5 years and found that studies reporting on this age group tended to include parents perspectives of the wider family unit, including their views on children of all ages within the household. Due to the large number of included studies, the review split after the full-text screening stage into two research questions. Review question one focused on women of childbearing age and pregnant women's accounts. Review question two focused on the wider family unit's experiences of their children's nutritional health and wellbeing, including both caregiver's and children's own accounts (see eligibility criteria).

This QES and meta ethnography thus aimed to identify and synthesise findings from the literature that considered the impact of food insecurity on the nutritional health and wellbeing of women and children in HICs, within the context of post-2008 global financial crisis. It was felt to be important to set the study within the context of the last 14 years as, post-financial crisis, all HICs suffered an economic crash alongside increasing poverty rates (see chapter two). For the rationale for focusing on women and children, see chapter one. These reviews will further our understanding of the experiences of food insecure women and children in the context of nutrition to help guide health and policy practice to support food insecure women and children from HICs.

5.4 Step Two – Deciding what is relevant to the initial interest - search

5.4.1 Search strategy

Search terms were informed by existing literature within the field and an information specialist from Newcastle University provided guidance with piloting and scoping searches. The strategy consisted of four main concepts in accordance with the PICOS tool (22); Participant (women, children and caregivers), Intervention (food insecurity), Comparison (not applicable as this is a systematic review of qualitative studies), Outcome (nutritional health and wellbeing), and Study type (those describing qualitative literature). Examples of the search strategy are in appendix E.

Searches of six databases Scopus, MEDLINE, EMBASE, CINAHL, Applied Social Science Index (ASSIA) and Web of Science were conducted from 1st January 2008 until 13th July 2021. The search strategy was developed in Scopus and tailored for other databases that work in

different ways. A check for tracer papers was conducted in each database. Tracer papers were key papers identified during the scoping phase to verify the effectiveness of the search strategy at retrieving records relevant to the research question. Searches were supplemented by grey literature database searches using Open Access Theses and Dissertations (OATD), OpenGrey Europe (for information on Grey Literature in Europe) and Trove (links to Australian grey literature). Relevant stakeholder websites were also searched (appendix E). Descriptive titles of qualitative studies can lead to inappropriate indexing, posing challenges in finding relevant studies when searching bibliographic databases alone [254]. Therefore, database searches were supplemented with examination of included study reference lists and citation searches using google scholar. The search strategy was restricted by date to include studies published from 2008 onwards. Only publications in English language were included, although translations of papers were searched prior to exclusion for language.

5.4.2 Eligibility criteria

Studies were selected according to the inclusion and exclusion criteria outlined in table 3. Eligibility criteria are outlined in accordance with the modified PICO tool, PICOS which is deemed appropriate for use in qualitative evidence reviews [261, 262].

PICOS	Inclusion	Exclusion
Participant (P)	• Food insecure women of childbearing age of all ethnicities (review one) • Food insecure households (parents, primary caregivers, children) of all ages and ethnicities (review two)	• Studies restricted to a specific type of population not directly related to women and children/ wider population with clinical needs, that necessitates a specific diet (e.g. studies in the context of people living with HIV, type 1 diabetes etc.) • Studies based on university campus with college students (unless in the context of also being a parent) • Perspectives of those outside the household family unit i.e. grandparents, healthcare professionals, teachers or food programme coordinators (Review Two)
Intervention (I) or Exposure	• Food insecurity • Other terms used to describe food insecurity and included are for example food poverty, food deprivation, food insufficiency, hunger	• Food secure population groups • Studies that were qualitative process evaluations of food insecurity-related interventions/services and focused on women and/or children
Comparison (C)	• Not applicable – systematic review of qualitative studies	
Outcomes (O)	• Experiences and accounts of the effect of food insecurity on nutrition and nutritional health and wellbeing	• Experiences and accounts not explicitly related to food
Study type	• Qualitative studies of any design including but not limited to: • Ethnography, interviews, focus groups, photo elicitation, visual techniques, phenomenology, grounded theory, case study, feminist research, action research • Mixed method studies	• Quantitative studies • Reviews • Expert opinion articles • Editorials • Policy documents • Conference abstracts • Qualitative research that reports no lay perspectives but has analysed text i.e. discourse analysis

	Inclusion	Exclusion
	• Primary data sources from grey literature and relevant stakeholder websites	• Grey literature that does not include primary qualitative data
Study period	• Published between 1 Jan 2008- 13 July 2021 • Studies with data collected from 2008 onwards	• Literature published before 1 Jan 2008 and 13 July 2021 • Studies reporting data only collected before 2008
Setting	• High-income countries (as per OECD definition, see appendix F)	• Non-high-income European countries, low-middle-income countries
Study language	• English	

Table 3: Eligibility criteria for screening studies

Studies were considered eligible if they were qualitative (including mixed methods, if the qualitative data could be extracted) and explored the experience and accounts of the impact of food insecurity on women of childbearing age, or children's (from the perspective of the child or wider family unit) nutritional health and wellbeing. In the context of this review, nutrition outcomes could be reported as accounts of diet (quality and quantity of food, eating behaviour, eating pattern), food practices (i.e. food acquisition, food preparation, organisation and storage of food in the house) and infant feeding practices (breastfeeding, infant formula and complementary feeding behaviour). Nutritional health and wellbeing outcomes for women and children included physical (e.g. perspectives on their weight or growth and development of a child) and mental (e.g. anxiety about household food running out). Studies were eligible whilst encompassing other terms for food insecurity, including, for example, food poverty, food deprivation, food insufficiency and hunger. Also included were studies reporting on those who were experiencing low-income, in receipt of income benefit, accessing food aid and those accessing food through public health programmes for example Special Supplemental Nutrition Programme for Women, Infants and Children and healthy start vouchers (HSV). This is because, in the UK at least, many people with low-income are experiencing food insecurity (albeit they may not be accessing food banks). Studies were ineligible if they were process-evaluations of public health service interventions because these programmes are often *'baseline'* programmes that support women and children with food insecurity. Studies were eligible if they were conducted in a HIC as per the Organisation for Economic Co-operation and Development (OECD) definition.

Studies were considered ineligible if they had a sole quantitative focus and did not report primary qualitative data, and if they reported views outside of the household. Studies were ineligible if they explored food insecure women and children's health more broadly, unless the health effects were explicitly linked to nutrition. Examples of non-nutrition related health

effects of food insecurity included stress, anxiety or depression experienced in the context of being unable to pay the household bills or generally living in poverty when there was no mention of food. Studies were ineligible if they focused on specific population groups such as women with HIV or Type 1 Diabetes because these groups have specific nutritional needs where food insecurity could impact on the management of the condition. Therefore, it was not necessarily about the general nutrition and health but rather about the impact of food insecurity on disease status, which was not the focus of this review.

5.4.3 Selection of studies

All studies were imported into EndNote version X9.3.3 [263] for de-duplication, then imported into Rayyan [264] an online program for systematic reviews. All titles and abstracts were screened by me (ZB) and a second reviewer (split between SS, SV and NH). Full texts were also double screened independently. Discrepancies were resolved with a third reviewer. A pilot exercise screening 30 titles and abstracts was carried out across the screening team (ZB, SS, SV) to calibrate and test the full-text review form. A third reviewer was not required to assist to resolve any disagreements. Reasons for exclusion at the full-text stage were recorded and a PRISMA flowchart was used to report each stage of screening (located section 5.8) Reference and citation screening of included studies was conducted until no further studies were found. If authors published multiple papers of the same study all were included. Similarly, if a paper and report were published of the same study, the publication with the most relevant, rich data was included.

I identified 11,596 records through database searches, including grey literature databases. I identified 23 records through stakeholder website searches, and 142 records through reference and citation searches. Due to the high number of studies at the full-text stage and limits of a PhD timeframe, the eligibility criteria were refined at the full-text screening stage to include only those set within a HIC in a European context. Sixty-seven studies from the database searches were then eligible for full-text screening. A strength of this narrowing is that it helps reduce heterogeneity in terms of food insecurity, social security and food aid between countries so more meaningful conclusions can be drawn from included studies. The ambiguity of study titles, with poorly structured abstracts, made eligibility decisions difficult at this stage. For example, it was often not clear whether intervention studies or process-evaluations of public health programmes reported on the general experience of food insecurity in the context of nutrition, or solely focused on experiences with the intervention. An inclusive approach was taken therefore at this stage to avoid excluding potentially rich primary data. Full texts were double screened independently (split between SS, SV and NH as second reviewers).

Full text studies were exported from Rayyan into Excel spreadsheet. A standardised screening spreadsheet was piloted using a sub-set of studies. After, a data extraction form was created in excel and piloted using a sub-set of included studies. This was created through referring to published systematic reviews and in discussion with the review team. The following data were extracted from included studies: study design, location, participant characteristics, study period, sample size, methods of data collection and analysis, main findings, verbatim quotes and theoretical frameworks. This information formed tables of the characteristics of included studies (see chapter 6 and 7). Data was extracted by ZB and verified by SS, SV and NH. At this stage papers were coded as having either a primary or secondary focus. A primary focus meant the study's aim focused on the experience of food insecurity within a food insecure population. A secondary focus meant the population group was part of the wider research, for example the study's aim was set within a wider poverty context i.e., HSV, and the experience of food insecurity was secondary to the primary aim of the study.

5.4.4 Quality appraisal of included studies

Quality appraisal (QA) of studies is a key step in the process of a systematically reviewing the evidence base [265]. With quantitative reviews, there is consensus on which QA criteria are of importance, how and when they should be applied [266]. Yet, the same is not true for qualitative research. There are several checklists and quality criteria available with no agreement currently on the best tool to assess the quality of qualitative studies. The first debate is whether QA is necessary. At the core of this question lies concern about the diversity of qualitative research in terms of its philosophical and epistemological approaches. Popay and colleagues [267] described both sides; one arguing against the use of criteria to judge quality, rejecting an approach that was developed for quantitative reviews, believing it is meaningless and has little to no benefit in the review or synthesis of qualitative evidence. The other side argues qualitative research requires its own distinct QA criteria, acknowledging the multiple accounts that can be produced about a phenomenon because of the active role of the researcher and the methods which influence the knowledge generated [268, 269]. I agree that QA is a necessary step in QES. Not only do journals require it for publication of review findings, but appraisal is an important step ensuring that researchers review each study carefully and systematically. The purpose of QA is to assess a study's validity, results, and relevance before using it to inform a decision [265]. That decision can be whether to include the study in a review, whether to weight studies according to quality during the synthesis or for use in exploration and interpretation of qualitative research to inform the synthesis and policy or practice recommendations [267].

This review used the Critical Appraisal Skills Programme (CASP) qualitative checklist [270]. The 10-item checklist assesses rigour, relevance and reliability of studies, and has been used in other published reviews [271]. The intention of CASP in this review was not to exclude studies that were low quality but to inform the data synthesis stage and provide an overview of the quality of included studies. This is because CASP merely assesses reporting quality, thereby potentially excluding rich data. Also, a primary aim of a review is to report on the landscape of the literature therefore CASP informed discussion on the strengths and limitations of the evidence base. CASP criteria was applied to each study by one reviewer (ZB) rating them using the *'yes', 'can't tell' 'no'* scale. A sample was double reviewed (SS) and any disagreements were recorded and resolved through discussion so that ZB could independently apply the criteria systematically across all studies. The CASP tool does not recommend using a scoring system (low, good, high), however, a system was used to aid reporting quality of the landscape of literature. *'Yes'* scored 2 points, *'Can't tell'* scored 1 point, and *'No'* scored 0 points, totalling a potential score of 20. Scoring 20 points indicated a *'high'* quality study, 16-19 points indicated *'good'* quality study and ≤15 points indicated *'low'* quality.

5.5 Step Three – Reading the studies

Noblit and Hare's [252] comment of *'reading the studies'* was interpreted as a step to become familiar with the studies' content and details and start extracting themes. This comprised in-depth reading of included studies independently (ZB, SS, SV, NH). This process revealed that the team understood in similar ways key themes in the included papers. For the women's review a difference centred on data extracted i.e., ensuring that women above child-bearing age, unless mothers, were not included in the data. We discussed this as a team to clarify what was and was not included as part of that review. The process of extracting themes and author's interpretations was trickier for some papers where the focus of the study was not primarily on food insecurity, or not solely focused on women of childbearing age or mothers' perceptions. Whilst extracting data, I had a sticky note on my desk as a reminder of the aim of the synthesis [254]. Figure 9 below illustrates a sample of included studies and the themes emerging from this stage.

Study	Original metaphors identified in the included studies			
Garthwaite (2015)	Various strategies employed to negotiate food insecurity	Inability to meet nutritional needs, negative physical & mental H&W impacts	Cyclical pattern of eating	Food assistance a 'lifeline' but the food provided had negative health consequences
Harden (2015)	Insecurity/ worry around financial capacity to buy food	Shopping practices balancing quality and quantity	Healthy Start Vouchers covering general costs	
Jolly (2018)	Limited to employ health knowledge & meet needs	Money saved by altered food practices, growing food was valued	Maternal sacrifice made food last	
Lucas (2013)	Fruit & vegetables would 'fall off the list'	Unable to employ healthier eating preferences	Healthy Start Vouchers a 'huge relief' and nutritional safety net	
Neter (2020)	Food parcels accessed not meeting nutritional needs	Aware of & dissatisfied with own dietary quality		
Nielsen (2015)	Compromised dietary quality & food enjoyment	Socialising with food involved was missed	Reduced quality of life due to strategies implemented	
Ohly (2018)	Reduced dietary quality due to unaffordability of F&V	Resource prioritisation through maternal sacrifice of nutritional H&W	Healthy Start Vouchers - a nutritional safety net / alleviating other poverties	
Power (2018)	Food practices to 'make ends meet' within households	Food acquired through internal support networks before external networks	Religion & culture had a role in experiencing FI	Maternal sacrifice of nutritional H&W
Purdam (2016)	Food practices altered to cope	Maternal mental H&W impacted negatively	Maternal sacrifice of nutritional H&W	Foodbanks a reassurance

Figure 9: Emerging themes from some of the included women's studies

Next involved creation of study sub-sets, line-by-line coding and extracting of first and second order themes (ZB). At this stage, 10% of papers were duplicate-coded and discussed with the review team. The purpose of this was to view the data through different perspectives (i.e. a form of investigator triangulation) rather than to check for consistency in coding between reviewers, in a similar capacity to the process of pragmatic double-coding in empirical qualitative data analysis [272]. Different approaches can be taken to do this third step. Initially I followed Toye et al. [273] approach to meta ethnography using NVivo 10 software [274]. Using NVivo provided a clear step-by-step process [273]. I coded conceptual findings wherever they appeared in each study and wrote a memo, summarising each theme using the same word for word terminology authors used or idiomatic translations of the meaning of the text to keep important details.

5.6 Step four – Determining how studies are related

The next stage was to determine how the studies were related. Using NVivo made it difficult to see all the data so I moved to a word document. I used a tabular form of first order themes (interpretations) and second order themes (interpretation of interpretations) with grouped studies to create *'meta-themes'*. Studies included in the women's review were grouped according to emerging themes. Studies included in the children's review were grouped according to the perspective i.e., caregiver, child, or a combination of both perspectives.

5.7 Step Five and Six – Translation and synthesis

The next two steps involved translating studies by checking first and second order themes against each other. My approach to translation was similar to Noblit & Hare [252] involving comparing themes individually account by account [253]. I compared themes in study one with themes in study two. The synthesis of those two accounts were then compared with themes in study three. This continued until all studies had been included. The order in which themes are compared can influence the resulting synthesis [253]. A chronological approach can be taken when studies range over a long period, or significant shifts in services or policies are important to capture. An alternate approach is to choose an index paper that is deemed significant to the analysis. For example, an index paper in these reviews could be one with a primary focus. In these reviews, I chose an index paper to start with then continued translation and synthesis in a chronological order. The index paper was chosen as it had the most emerging themes that related to other studies [72, 239]. The context of the studies was preserved in the process of translation through translation of sub-groups of studies according to country and population type i.e., lone mothers where possible.

5.8 Step Seven – Expressing the synthesis

Step seven is the expression of the synthesis written up. To assist the writing up process I followed the emerging reporting guidelines eMERGE [255]; presented in following two chapters. Figure 10 shows the results of the search strategy (section 5.4.1). 33 studies in total were included from this search strategy; 8 studies had findings that could be included in both the women's and children's review, 14 studies could only be included in the women's review and 11 studies could only be included in the children's review. Reasons for exclusion at the full-text stage are recorded and reported using a PRISMA flowchart.

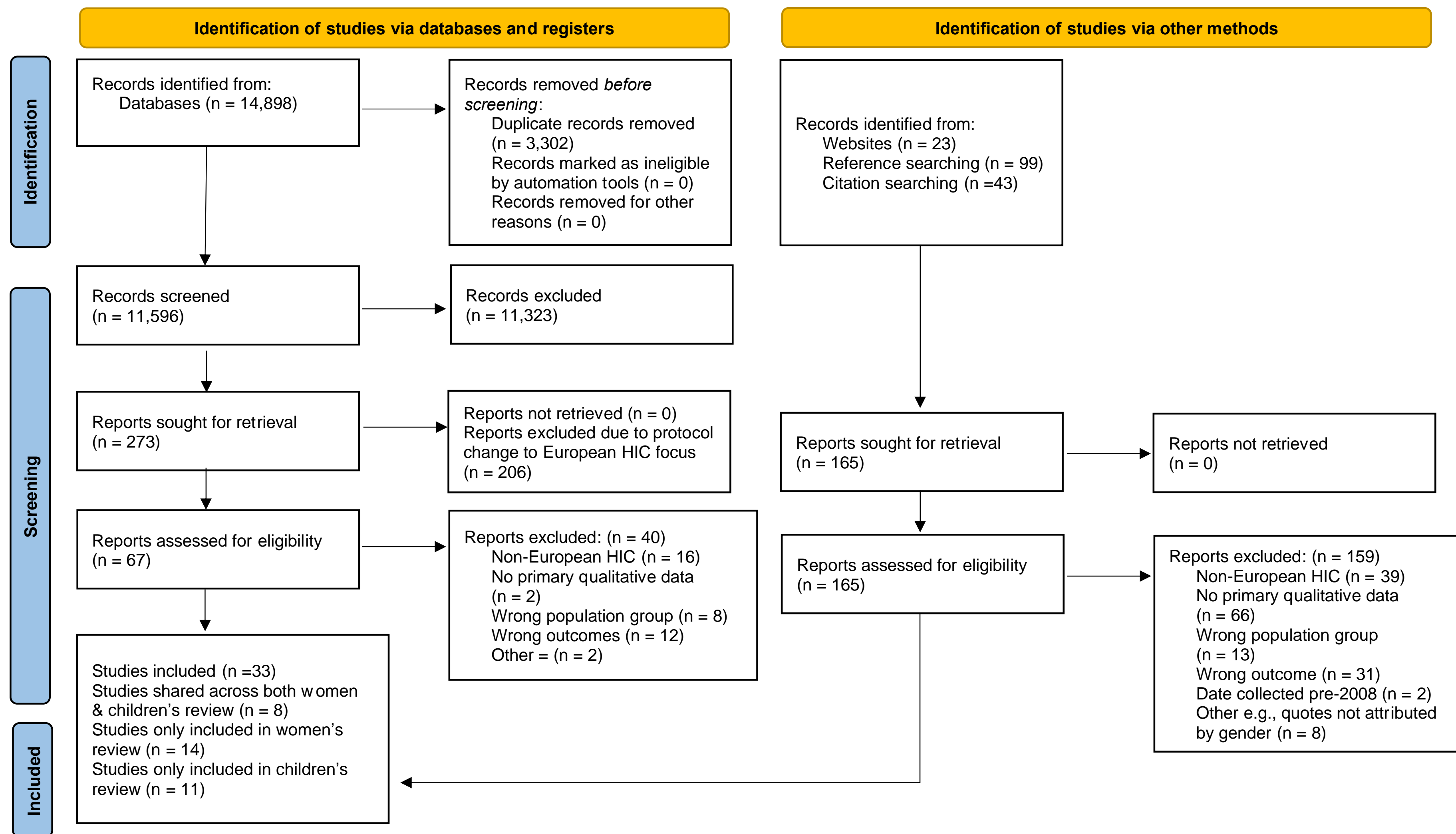

Figure 10: PRISMA diagram. From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: http://www.prisma-statement.org/

5.8.1 Member-checking workshop

Review findings of chapter six were also sense-checked at a patient, public involvement workshop involving seven participants with lived experience of food insecurity. The aim was to explore the findings further and see how they resonated with lived reality in Gateshead, North East England [275]. While this was not intended to be completely representative of all women with experience of food insecurity [276], this process helped to broaden the perspectives on the results and whether they reflected some of the lived experiences in this review. This took place after the synthesis of included studies and helped to inform our interpretation of the dataset as well as the implications of this work for further research, policy and practice, see section 6.6.1.

5.8.2 Method

Using my network from the scoping phase of my PhD (see section 4.4) I reached out to local food banks and women's services in Gateshead, North East England to find a group of women to member check the QES findings. A positive response from the co-ordinator of the Salvation Army meant a group of six women were part of the workshop. Six was an appropriate number as this workshop intended to broaden the perspective on my findings rather than form another method of data collection. Further, given that I was the only researcher in attendance, six women was a manageable number for the purpose of this workshop. Phone call conversations with the co-ordinator helped establish preferred means of communication (telephone) and gain understanding of the group. From time spent in community during my scoping phase, I was aware of some of the potential barriers women might face in attending and participating in this workshop, such as travel, childcare and literacy. Thus, for the patient, public, involvement activity I drew upon a participatory approach (which represents a collaborative way of understanding an issue with those impacted by it, for the purpose of action and change [277]) to design the workshop. This was important to ensure that women's needs were met throughout the process [278]. Conversations with the co-ordinator (and later women) were valuable in highlighting this group's barriers. Regarding travel, I was told by the co-ordinator that it would be best if I travelled to the site where women were already travelling too. Further, women had insecurities around the concept of a workshop, level of reading and writing, and an inability to concentrate for any length of time due to medications. Therefore, during the preparation phase of the workshop I went along to the women's cooking and budgeting class to introduce myself, the research and aim of the workshop. This put women at ease and established the kinds of activities and workshop format they were comfortable with. Thus, every 10 minutes the workshop had a short break to help ease women's concerns about their ability to concentrate. The workshop was formatted so that the breaks gave women space to think about a response to

the information provided during the previous 10 minutes. The workshop was delivered using minimal written text, but predominantly images, with responses given orally rather than written.

The workshop began with a photocard game relating to our favourite food memories. I then used a persona I had created to model the women included in chapter six. Personas are fictional characters used to represent typical participants, created from a synthesis of data from real people, used to communicate ideas and problems [279]. For this review, a persona helped me as a researcher use storytelling to thread together a unified character which de-personalised the findings. It allowed me to facilitate discussion of the review findings without directly asking women about their lived experience which could have induced more harm than benefit. I told 'Mary's' story (appendix H) using the prompts shown in figure 11 to facilitate discussion of the review findings. I asked questions like would 'Mary' use these strategies if she lived in Gateshead to manage feeding her family on a tight budget and what the advantages and disadvantages of each approach might be and how 'Mary' might feel. Women opened up, speaking of their personal experiences in relation to food insecurity, however. I continued to refer to 'Mary' when asking questions or reflecting on what the women told me to continue to create space between me asking them personal questions. At the end of the workshop, I ensured they had my university email address so they could contact so any concerns could be addressed.

Figure 11: Prompts used to discuss review findings at workshop

CHAPTER SIX

6 Chapter six – The experiences and perceptions of nutritional health and wellbeing amongst food insecure women in Europe: a meta ethnography

6.1 Chapter overview

This chapter presents the findings of the systematic review and meta ethnographic synthesis of studies from European HICs exploring food insecure women's experiences and accounts of their own nutritional health and wellbeing. The chapter starts by summarising the characteristics of included studies, it then presents the narrative synthesis and meta ethnography that arose from the unfolding story developing through the themes. Included are twenty-two studies from six European countries, using seven different qualitative methods set within the context of the period between the 2008 global economic recession to 13th July 2021.

6.2 Characteristics of included studies

Table 4 on the following pages includes the characteristics of included studies. The 22 studies represent 647 women with a sample size ranging from 2 to 133 female participants between 16 and 55 years of age. Women were of a variety of ethnicities including White, European, Black Asian and Minority ethnic, Arabic, Indian, Anglo-Indian, Bangladeshi, Pakistani, Moroccan, Surinamese, Curacao, and Polish. Seventeen studies were conducted in the UK, two in the Netherlands, one in Denmark, and one in the Republic of Ireland. One study included data from multiple countries (UK, Portugal, and Norway). Eight studies took place in a community setting (e.g., community centres or organisations, university or café); four within a food bank setting; two in an undefined space convenient for the participant; four in the participants' homes; and five study settings were not stated.

Eleven studies focused primarily on food insecurity. Five of these used food bank access as a proxy measure of food insecurity; one used the 18-item HFSSM[1], one adapted survey questions to identify those having financial difficulty in relation to food; and five used socio-economic status as a proxy measure for food insecurity. Eleven studies discussed food insecurity as a secondary focus in the context of wider research, for example with the primary focus being austerity or HSV. None of these studies reported a specific measure of food insecurity. None of the studies with a primary focus on food insecurity discussed pregnant women, whereas two of the studies with a secondary focus on food insecurity discussed pregnant women within a wider sample [280, 281]. None of the studies focused solely on pregnant women.

Quality appraisal

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[1] United States Department of Agriculture, Household Food Security Survey Module

Ten studies rated *'high'*, ten studies rated *'good'* quality, and one rated *'low'* quality (see appendix G). Studies were strong in stating clear relevant research aims, using appropriate methodologies and research design. *'Good'* and *'low'* scoring studies consistently scored lower by not adequately discussing reflexivity or showing how, beyond a positive ethical approval, ethics had been considered. In addition, the study scoring *'low'* was not clear on its recruitment strategy.

Study	Primary or secondary^	Country	Study aim	Method	Country and setting	Participants	SES	Measure of food insecurity
Canton, 2018 [282]	Secondary	UK	To explore lone mothers' experiences of economic crisis and austerity, examining the ways in which their social relationships help them cope and adapt	Semi-structured interviews	Bath or Bristol Southwest of England	• N = 30 lone mothers^^ • Age = 21-52 years^^ • Ethnicity = Not stated	15 mothers were in paid employment Just over half of the participants had an undergraduate degree or more	Not stated
Dabrowski et al. 2017 [283]	Secondary	UK	To explore how differently positioned young women live with and navigate through austerity	Interviews Group discussions	Brighton, Leeds, London	• N = 61 young women (23 mothers, 37 non-mothers)^^ • Age = 18-35 years • Ethnicity = 39 White, 2 Pakistani, 9 Black, 6 Bangladeshi, 2 Indian, 1 Anglo-Indian, 1 Mixed other	27 working class, 33 middle class women 21 reliant of state support, 2 unemployed, 2 volunteers, 6 students, 30 employed	Not stated
Garthwaite et al. 2015 [239, 284]	Primary	UK	To examine the relationship between ill health and food insecurity among foodbank users in the UK	Participant observations Interviews	Foodbank Stockton-on-Tees, Northeast England, UK	• N = 42 foodbank users (20 female, 22 male)^^ • Age = 18-51 years^^ • Ethnicity = Not stated	All participants were on low income or accessing a form of social security	Accessing a food bank
Halligan, 2019 [285]	Secondary	UK	To explore the lived experience of nineteen working-age benefit recipients affected by 'welfare reform' in Newcastle upon Tyne, North East England	Longitudinal interviews over 21-month period Photo-elicitation	Community centre, university, café Walker, Newcastle, North East England	• N = 19 (9 male, 10 female) ^^ • Age = 20-69 years^^ • Ethnicity = Not stated	All participants were in receipt of a working-age benefits that had been affected by welfare reform 15 participants were unemployed, 4 were employed part-time (all women included in study were unemployed)	Not reported
Harden and Dickson, 2014 [286]	Secondary	UK	To explore the food practices of low-income mothers with young children, over time and situating those practices	Longitudinal interviews 18 months apart	Community Organisations Lothians, Scotland, UK	• N = 13 mothers • Age = 6 women 18–22 years, • 4 women 23–29 years, 3 women 30–40 years (all children below 6 years)	Low-income mothers (n=10 not in employment, n=3 part-time employment) 7 = lone parents 6 = co-habiting	Not reported

Study	Primary or secondary^	Country	Study aim	Method	Country and setting	Participants	SES	Measure of food insecurity
			within an understanding of their everyday lives			• Ethnicity = Not stated		
Jolly, 2018 [287]	Primary	UK	(1) To understand the experiences of food poverty for families who were at risk of destitution because of their immigration status. (2) To identify transferable learning for practitioners to improve social work and social care practice with this service user group.	Series of semi-structured interviews	Play sessions at the project where the researcher worked Birmingham, England, UK	• N = 7 parents from 6 families^^ • Age = Not stated • Ethnicity = Variety of backgrounds and immigration status. 1 Eastern European accession country, 1 asylum seeker, 1 with discretionary leave to stay in the UK, 4 undocumented after overstaying their visas	All had experienced destitution and were in receipt of services by local authority for their children Living in a range of housing; privately rented, temporary bed and breakfast, sofa-surfing	Not reported
Lucas et al. 2013 [280]	Secondary	UK	To understand the views and experiences of families using Healthy Start scheme (including unsuccessful applicants)	In-depth interviews	Community health & welfare services 13 research sites across England, UK	• N = 107 (100 mothers, 6 fathers, 1 grand-mother)^^ (14 women pregnant) • Age = 16-48 years (50 parents of children under 12 years, 43 parents of children 12+ years)^^ • Ethnicity = 17 Black, Asian and Minority Ethnic, 4 White, non-British, 86 White British	Low-income (currently or previously eligible for HS including unsuccessful applicants)	Not reported
MacLeod, 2018 [288]	Primary	UK	To better understand the experiences of people who struggle to afford food, and in particular to explore	Interviews	Participant's homes Glasgow, Scotland	• N = 4 mothers ^^ • Age = 25-39 years • Ethnicity = 2 British, 2 unknown (refugees)	2 unemployed lone parents, 2 coupled (1 unemployed with partner working full-time, 1 working part-time with	Participants reported in prior survey assessing level of financial

Study	Primary or secondary^	Country	Study aim	Method	Country and setting	Participants	SES	Measure of food insecurity
			why people might not use food banks				partner working full-time)	difficulty in accessing food
McFadden et al. 2014 [289]	Secondary	UK	To evaluate Healthy Start from the perspectives of women and health practitioners	Participatory workshops Focus groups Telephone interviews	Children's centres, community and housing association centres and a Young Person's Education centre Yorkshire and the Humber, and London, England	• N = 105 women, 4 men (none identified as pregnant) • Age = 12 women <20 years, mean age 21-30 years • Ethnicity = 43 White British, 8 White other, 30 Asian, 20 Black, 1 Arab, 2 Mixed, 5 Other	Low-income women who were eligible or borderline eligible for healthy start, 58% in receipt of healthy start, 12% had received but no longer eligible, 18% unsure of eligibility, 5% not eligible 40% reported English not their first language, 67% were unemployed.	Not reported
Mort, 2017 [290]	Secondary	UK	To understand migrant families' experiences of services in the UK and how austerity had affected their everyday lives	In-depth semi-structured interviews with one or more participant	Homes of participants Manchester, England	• N= 9 families (12 individuals; 9 mothers, 2 fathers 1 daughter) • Age = Not stated • Ethnicity = 3 Pakistani, 2 Turkish, 1 West African, 1 Kurdish, 1 Romanian, 1 Iranian, 2 Moroccan, 1 Portuguese	3 families had refugee status, 4 EU migrants, 2 families a combination of EU migrant and third-country nationals, 5 families from the EU were onward migrants, 1 family a European minority	Not reported
Neter et al. 2020 [291]	Primary	Netherlands	To gain insight in Dutch food bank recipients' perception on the content of the food parcels, their dietary intake and how the content of the food	Focus groups	Food bank or a location near food bank Netherlands	• N = 44 (22 women, 22 men)^^ • Age = 20-64 years^^ • Ethnicity = Not stated	Majority of participants had medium level of education (high school, general intermediate and lower vocational education, general secondary and	Accessing a food bank

Study	Primary or secondary^	Country	Study aim	Method	Country and setting	Participants	SES	Measure of food insecurity
			parcel contributes to their overall dietary intake.				intermediate vocational education). Duration of foodbank use ranged from 1 week to 3 years	
Nielsen, 2015 [292]	Secondary	Denmark	To provide insight into typical patterns of coping among budget-restricted households	Interviews	Homes of participants Denmark	• N = 30 Danish individuals (gender breakdown not stated)^^ • Age = Not stated • Ethnicity = Not stated	Women with low-income Women had implemented changes to food practices due to economic restraint	Not reported
O'Connell and Brannen, 2021 [72]	Primary	UK, Portugal, Norway	To examine how experiences of food poverty are shaped by social contexts and social positionings	In-depth interviews Tour of kitchen with follow-up interview with parents Vignettes Photo-elicitation interviews	Participant homes Inner London or coastal town in South East of England Urban / Sub-urban areas of Lisbon or Rural areas further away Urban areas across Oslo or Rural / semi- rural areas in non-urban Eastern Norway	• N= 145 children and young people, 133 parents or caregivers (mostly mothers) ^^ • Age = Parents or caregivers age not stated • Ethnicity = White British, Portuguese, Norwegian, Angolian, Roma, Somalian	Families were all deemed low-income by themselves i.e., their income was below what they needed 41 UK families, 44 Portuguese families and 6 Norwegian families met the relative low-income measure employed as poverty (income decile 1 or 2)	Not reported

Study	Primary or secondary^	Country	Study aim	Method	Country and setting	Participants	SES	Measure of food insecurity
Ohly et al. 2019 [293]	Secondary	UK	To explore potential outcomes of the Healthy Start programme used by low-income pregnant women (including intended and unintended outcomes) and develop explanations for how and why these outcomes might occur	Semi-structured interviews Realist interviews Vignettes	Convenient place for participant Barrow-in-furness and Blackburn, North West England, UK	• N = 11 women (5 pregnant women, 6 had recently been pregnant, only 3 took part in realist interviews) • Age = 7 women 18-25 years (including 3 teenage pregnancies), 4 women 26-35 years • Ethnicity = White British	Low income as in receipt of Healthy Start vouchers	Not reported
Power et al. 2018 [294]	Primary	UK	(1) To explore the lived experience of food in the context of poverty amongst Pakistani and white British women living in Bradford. (2) To present their perspectives on and experiences of food insecurity and charitable food aid, with a particular focus on ethnic differences	3 focus groups 1 interview	Community initiative Better Start Bradford Bradford, a city and metropolitan area in West Yorkshire, UK	• N = 16 women • Age = 18-48 years (half the sample under 25 years)^^ • Ethnicity =8 Pakistani Muslin, 8 White British	Women living in severe deprivation, as well as those in low income households 3 women with no HH income, only social security 3 women in a HH where role was administrative or junior management 13 women lived in a HH with 1 adult in paid employment	Not reported
Purdam et al. 2016 [6]	Primary	UK	To understand the concerns food bank users have when visiting a food bank. To explore the sustainability of local voluntary-led food aid policy models	Four case studies Interviews	Food banks in Northwest England, UK	• N = 34 (23 women, 7 men, 2 were couples) • Age = average age was 51 years^^ • Ethnicity = Not stated	25 participants had children 3 employed, 31 in receipt of different welfare benefits or waiting for application approval, some paying benefit sanctions	Accessing a food bank

Study	Primary or secondary^	Country	Study aim	Method	Country and setting	Participants	SES	Measure of food insecurity
Share, 2020 [295]	Primary	Republic of Ireland	To understand the dynamic relationship between people, space and food in the particular context of homeless accommodation provision	Interviewer-administered background survey In-depth photo elicitation interview	Dublin, Ireland	• N = 10 parents / families (4 male, 6 female^^) • Age = Mean age 34.4 years • Ethnicity = Not stated	4 parents in couple households, 6 in single-parent households 4 parents in hostel for homeless, 3 parents in budget B&B for homeless & tourists, 2 parents in commercial hotel geared for tourists, 1 parent in budget hotel for homeless	Not reported
Soriano-Rivera, 2017 [296]	Secondary	UK	To explore how lone mothers respond to the context of economic recession and austerity	Retrospective semi-structured interviews	South Tyneside, Northeast England	• N = 25 lone mothers • Age = Reported as adult-life stages with 9 'emerging', 10 adults, 6 middle life • Ethnicity = 24 White, 1 non-White	6 'least formally educated' (3 routine/manual job, 2 unemployed, 1 intermediate job) 12 'young, never married' (12 never worked) 7 'middle class' (4 managerial job, 2 intermediate, 1 routine/manual job)	Not reported
Spellman, 2021 [297]	Primary	UK	To explore the experiences of women visiting a food bank alongside the role of the food bank within this	Participant Observations Interviews	Independent food banks UK	• N = 15 women^^ • Age = < 18 to 60 years • Ethnicity = Not reported	All women experiencing in-work poverty 10 single mothers, 2 single women, 1 with a partner, 2 undisclosed personal status	Accessing a food bank
Spencer, 2015 [298]	Secondary	UK	To investigate the relationship between urban living, food, and diet	Semi-structured interview	Community setting Aberdeen	• N = 15 (9 female (3 women on low income) 7 male,)^^ • Age = 25-45 years • Ethnicity = Not stated	2 women single, unemployed living in 10% most deprived area of Scotland, renting housing from council, 1 woman part-time	Not reported

Study	Primary or secondary^	Country	Study aim	Method	Country and setting	Participants	SES	Measure of food insecurity
							employment, divorced, renting from housing association	
Stack and Meredith, 2018 [299]	Primary	UK	To explore the impact of financial hardship on personal health and wellbeing amongst single parents, and their attempts to seek help to cope with the impact of financial hardship	Semi-structured interviews	UK wide	• N = 15 lone mothers • Age = 18-55 years^^ • Ethnicity = Not stated	7 women working full-time, 3 women working part-time, 2 women returning to work from leave, 3 not working Participants identified themselves as lone or single parent. All were raising at least one dependent child (10 women had one dependent, 5 women had two dependents age range 9 months to 15 years)	Not reported
van der Velde et al. 2019 [300]	Primary	Netherlands	To gain a better understanding of the needs and perceptions regarding healthy eating behaviour of people at risk of experiencing food insecurity living in disadvantaged neighbourhoods in the Netherlands	Interviews	Place convenient to participant The Hague, Netherlands	• N = 10 (8 mothers, 2 fathers. One parent per household) ^^ • Age = 35-55 years ^^ • Ethnicity = (All had migrated to The Netherlands) • 3 Moroccan, 1 Colombian, 4 Surinamese, 1 Curacao, 1 Polish	8 households below basic needs budget, 2 households above basic needs budget 4 two parent households, 6 single parent households	18-item USDA Household Food Security Survey Module

Table 4: Characteristics of included women's studies

^ Primary = studies with food insecurity as the focus. Secondary = studies where food insecurity was discussed as part of the wider research ^^ Only data relating to food insecure women of 18-45 years included in the analysis, unless a mother lived with a dependent child then age was irrelevant

6.3 Findings

Chapter five discussed how included studies shine a light on different aspects of the topic but when brought together form a new interpretation; the synthesis of this review represents both reciprocal and refutational translation. Noblit and Hare [252] propose the notion of a *'line of argument'*, whereby from the synthesis a storyline unfolds through the development of key themes and sub-themes. The storyline for this meta ethnography is presented in the proceeding sections through two core themes: accessing sufficient food and embodying food insecurity. Within each core theme are several sub-themes that describe the concepts in detail: strategic food practices, accessing charitable food aid, informal support networks, HSV, inability to meet own nutritional needs, maternal sacrifice and physical and mental health and wellbeing impacts. Table 5 details which key themes and sub-themes emerge across included studies. Figure 12 represents the storyline developed through the themes and sub-themes, capturing the embodying of food insecurity from a women's environment to a biological level. The outer layers represent the context within which food insecurity exists and women live. The central part of the figure has three levels. The household level where strategic food practices are exercised to access sufficient food. The individual level where more personal coping strategies are practiced, and the impacts of food insecurity begin to be felt. The biological level represents the pathways to the embodiment of food insecurity. Throughout the next section, direct quotations from women are presented in italics within quotation marks, whilst author's interpretations are included in italics within inverted commas.

Key themes	Sub-themes	Context
Accessing sufficient food	**Strategic food practices** [6, 239, 280, 283, 285-288, 292, 294, 295, 299-302]	• 10 UK, 1 ROI*, 1 Denmark, 1 Netherlands, 1 UK, Portugal and Norway based study • Ethnicities ^ included White, Danes, Pakistani, Portuguese, Norwegian, Black, Black Asian and Minority, Bangladeshi, Indian, Anglo-Indian, Mixed other, Angolian • 3 studies including asylum seekers, refugees, or those with migrant status • 1 study in context of temporary accommodation provision
	Accessing charitable food aid [6, 239, 283, 287, 288, 291, 294, 297, 302, 303]	• 8 UK, 1 Netherlands, 1 UK, Portugal and Norway based study • Ethnicities included White, Danes, Pakistani, Portuguese, Black, Black Asian and Minority, Bangladeshi, Indian, Anglo-Indian, Mixed other, Roma, Somalian, Norwegian, Angolian • 1 study including asylum seekers, refugees • 2 studies including lone mothers
	Informal support networks [6, 288, 294, 302, 304]	• 4 UK, 1 UK, Portugal and Norway based study • Ethnicities included Pakistani Muslim, White British, Roma, Somalian, Norwegian, Angolian • 2 studies including asylum seekers, refugees, or those with migrant status
	Healthy start vouchers [280, 286, 289, 293]	• 4 UK based studies • Ethnicities included Black, Asian and Minority Ethnic, White British, White-non-British • 2 studies included pregnant women
Embodying food insecurity	**Inability to meet own nutritional needs** [239, 287, 291, 292, 295]	• 2 UK, 1 ROI, 1 Netherlands, 1 Denmark based study • Ethnicities not stated • 1 study including asylum seekers, refugees
	Maternal sacrifice [6, 287, 293, 294, 299, 302]	• 5 UK, 1 UK, Portugal and Norway based study • Ethnicities included White British, Portuguese, Norwegian, Angolian, Somalian, Pakistani Muslim • 1 study including asylum seekers, refugees • 1 study including lone mothers
	Physical, mental health & wellbeing impacts [6, 239, 286, 287, 292, 293, 299]	• 6 UK, 1 Denmark • Ethnicities included White British, Danish • 1 study including lone mothers • 1 study including asylum seekers, refugees

Table 5: Key themes and sub-themes emerging across included studies

* Republic of Ireland, ^ Ethnicities (when reported in studies)

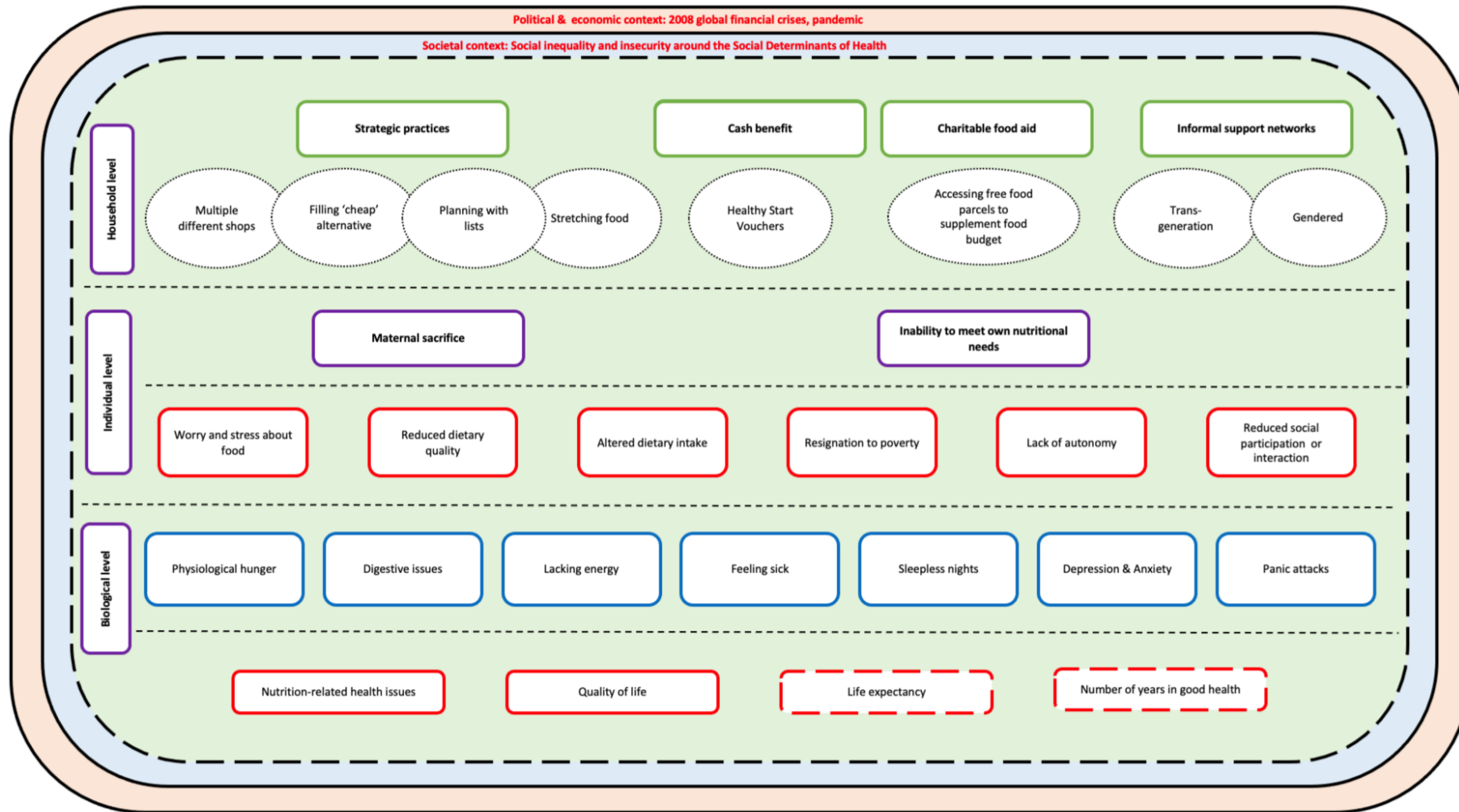

Figure 12: A figure representing the storyline for this meta ethnography capturing the embodiment of food insecurity from the political and economic environment through to a biological level

* The figure represents how women are set on a trajectory towards sub-optimal health through the embodiment of food insecurity. This might lead to reduced life expectancy and number of years in good health, represented in red dashed boxes because the findings did not explicitly find these outcomes.

6.4 Theme one: Accessing sufficient food

The most common theme to emerge from the included studies related to the various ways women described trying to access sufficient food. This included a sub-theme related to the strategic food practices women employ to cope with a low budget and access food in acceptable ways, the tension that arises between women and their relationship with charitable food aid, the role of (gendered) informal support networks used by some women to access food, and the role of HSV as a 'nutritional safety net'.

6.4.1 Strategic adjustments to food practices

Food insecurity impacted women's food practices, which in turn influenced their nutritional health and wellbeing. It did this by influencing their ability to use food to socially connect with others and their dietary variety, pattern, and quality. Across the studies women spoke explicitly about adopting various food practices to access sufficient food on their low budget. The first adaptation that women described in response to food insecurity was to stop eating out in order to increase their capacity to buy sufficient healthy food "*we don't go out to eat anymore…it is once in a lifetime, because otherwise it is not possible to make ends meet…"* [292]. Neilsen et al. [292] report that this approach had often long been implemented by women in poverty and that this lack of eating out was by necessity rather than choice and linked to a drop in quality of life. Quality of life was poorer in terms of enjoyment of food, family togetherness and social relations which eating out can harness. Similarly, Stack and Meredith [299] found that lone mothers social eating was impacted. For lone mothers, the embarrassment of having little money had a negative impact on social connections. They tended to withdraw and isolate themselves. One mother talked of how her friends will occasionally decide to get a treat at the park, but she can't afford to, so due to embarrassment she withdraws herself and her child altogether *"…they might get a treat or go for a coffee. And I just thought I don't have three pounds to do that, so we'll just stay at home and do things ourselves*" [299]. Amongst mothers, Purdam et al. [6] found that instead of stopping all social eating, some mothers still invited friends with their children round to their home for dinner, but their guests "…*brought the food to share with her"* as *'she could not afford to provide food for all of them'*. Indeed, other women spoke of being unable to enjoy regular family meals, or share meals on special occasions like birthdays and barbeques because of its unaffordability [288].

Across all studies women negotiated their food insecurity by strategically employing food shopping strategies to enable them to continue to access food in socially acceptable ways. Such strategic practices were adopted within externally determined limitations, hence constraining their food choices. Thus, women reported feeling the impact of the economic recession and

found it increasingly difficult to '*stretch'* their food budgets with rising food prices. Garthwaite et al. [239] demonstrated that food shopping practices helped mothers get '*maximum food consumption with a minimum means'*. Mothers shopped around for cheaper or reduced items and would favour processed, '*filling*' cheap alternatives, highlighting how managing diets with minimum means can directly influence nutritional health and wellbeing through poor dietary quality. Similarly, Harden and Dickinson [286] found that mothers with young children negotiated food insecurity by adopting specific food shopping practices to ensure that their '*limited resources stretched as far as possible'.* One woman remarked on the 'insanity' of needing to apply these strategies to get enough food "*...so you're going to like 5 different shops to get, who's got the best, sort of thing, it's just ridiculous*" [285]. Strategically, shopping for food was a time-consuming process, requiring planning and money management [280, 287, 300] *"I have a list of everything I need and where to get things from and then I just go to all the places and get everything"* [301]. For migrant mothers, food shopping emerged to be even more precarious. Jolly [287] described the importance of cost saving among migrant mothers "*the frozen stuff is £1, and we'll go to Aldi, and it's 99 pence, and we're still saving a penny"* [287], and van der Velde et al. described the embarrassment of buying cheaper brands "*I used to be ashamed to buy cheap products […]. I really thought those people would think that I don't have money"* [300].

In turn, food insecurity influenced women's food practices within the household. Neilsen et al. [292] and Power et al. [294] found that women and mothers on low incomes were aware of the need to fully utilise their food *'to make ends meet'*. This meant being able to efficiently make use of the food they were able to access, achieved by eating the same meals for several days and only buying limited ingredients to avoid having too many ingredients at once, limiting food waste. This pressure on budgets forced compromises to dietary quality, and in turn enjoyment of food for women, *"it is not that I have a problem eating the same dish two days in a row, but I would like things to be more varied"* [292]. Recipes with long ingredient lists could be expensive, "…cause you need a pinch of this and a pinch of that…that's why I end up having cheese on toast" [298]. Women cooked from scratch, in bulk and made meals with the food available within the household which could mean cooking *"not healthy stuff"*" but *"just what I could get really"* [294]. For asylum seekers, refugees and migrant women, chronic experience of food insecurity was evident throughout their accounts of how food practices were employed by necessity rather than by choice to *"save money"* and *"make food last"* as "*essential for survival"* [287]. One woman compared food directly to money, arguing that not wasting food was an essential survival strategy for living on a very low, irregular income *"...to put it in the bin, that's like throwing money away"* [287].

Across the studies it was evident that a wider poverty lens may be useful as food insecurity was about more than access to food. Accounts described issues around utilisation of food due to pressures of gas, electricity, and the physical space to cook. Purdam et al. [6] reports that for some women and mothers accessing food banks, only food heated using a microwave was eaten because the cost of using the cooker was too high, "*I've got a cooker at home but use the microwave as it uses less electricity. All my money goes on gas and electricity*" [6]. This portrays poverty and its different aspects that women and mothers are constantly juggling. One woman explained how a constant negotiation between food and poverty impacted dietary quality "*You used to be able to buy lots of fruit but it's so expensive…I just get it when I can afford it…"* [6]. Mothers would *"take out of my mouth to put uniforms on my kids"* [283]. The struggle of '*heating and eating'* surfaced in studies to varying degrees. Thus, women asked the question *"…do I starve or go without electric? Do I freeze but have something to eat?"* [284]. Some women were left with as little as £9 per week after gas and electric bills for food, whilst others were unable to afford their heating bills and feed themselves at the same time [283, 285]. For mothers living in emergency accommodation, their physical space meant they were unable to store, cook or eat certain foods. This impacted their dietary quality with women expressing how they relied more on ready-meals, snack foods and takeaways than they had done before they became homeless. At best, they described this space as restricted in relation to cooking, storage and consumption "*It is very bad because you can't cook as you want, you can't eat what you want…it is busy and you have to wait, and so you go, and no space to cook so I left"* [295]. This often resulted in women eating "*...meals on the beds in their rooms"* [295]. At worst, they described this living environment as hostile, "*You have to buy daily because if you buy for long it is going to spoil and if you put it downstairs, they are going to steal it."* [295].

6.4.2 Accessing charitable food aid

Some women needed to rely on charitable food aid to increase their food provisions. Although women showed gratitude towards food aid, there was also evidence of unhealthful consequences from accessing food in this way. Garthwaite et al. [239] show how consuming food provided by foodbanks had negative health consequences for women, especially those with food intolerances. Women in this study spoke of having difficulty digesting wheat and dairy, yet dairy and wheat containing foods were in their food parcels. The tension emerges when these same women describe foodbanks as "*a lifeline"*". The insecurity around their financial and nutritional situations was perhaps the reason for this tension "*Knowing there is the food bank there is less of a sense of panic"* because *"I am constantly looking in my purse"* [6]. Further, for migrant mothers the foods supplied were not culturally appropriate [287], whilst mothers from a study in the Netherlands were dissatisfied and frustrated with the content

of their food parcels in terms of nutritional balance [291]. They spoke of how they often miss foods to prepare a complete meal, that there is "*a lot of or even too many sweets and salty snacks"* [291]. One woman said, "*I have never had so many sweets and salty snacks in my pantry*" [291] and that she would prefer a bag of potatoes, apples, or a bunch of bananas instead. Some foods reported as frequently missing in the parcel were: dairy, fruit, meat, fish, coffee, and fresh foods in general. Food safety was also a concern, with inclusion of foods close to or even beyond their expiry date. Women, therefore, reported the extra burden and labour of checking the food, with one participant stating "*On Friday, when I receive my parcel, I spend all afternoon preparing the food. I store it in the freezer so that it stays fresh*" [291].

Leaning on charitable food aid exemplifies how women are excluded from participating in normal acceptable ways of accessing food. Being dependent on a food bank went hand in hand with sense of shame, humiliation, guilt, embarrassment, and loss of dignity. Purdam et al. [6] described these unhealthful consequences of accessing free food in terms of '*hidden costs'*. Having to rely on others to merely survive rather than thrive dampened any perceived sense of autonomy. There was a sense of being seen as a '*failure*' for not being able to afford sufficient food for their family. One mother was embarrassed to attend the food bank "*I thought about coming but wasn't sure and was embarrassed…"* [6] whilst another describes the loss of pride because of attending *"It throws your pride out of the window … I am doing it for my kids, I am not going to make my kids suffer just because of my pride"* [6]. Yet women and mothers felt a sense of reassurance knowing there was a food bank. Amongst women experiencing in-work poverty guilt was particularly evident because they perceived others to deserve it more than them. This experience was felt inter-generationally "*My mum didn't feel too happy about it…she felt bad…she felt like…guilty. She personally felt like other people deserved it more than we did"* [297]. Further, Power et al. [294] report on how the psycho-social costs of accessing a food bank was a key reason as to why it was avoided at all costs. Both Pakistani and White British mothers reported that accessing food banks was a last resort. Women found support from family first, "*There would definitely be some form of intervention before it got to the stage where someone was going to a food bank. The family would intervene and help out financially*" [294]. Indeed, some Pakistani women did not know about food banks, perhaps highlighting how protective an informal support network can be to mitigating the experience of food insecurity.

6.4.3 Informal support networks

Women accessed food aid out of necessity rather than choice, preferring to lean on informal support networks (e.g., family, friends, neighbours) to access sufficient food. Informal support

tended to come from other women [6, 294], and there was a '*gendered organisation of care'* with food insecure women seeking informal support from other women, their mothers, and their partner's mothers [294]. Purdam et al. [6] found this gendered care highlighted both inter-generational poverty and the selflessness of mothers, with those helping sometimes sacrificing their own food in the process, "*When the grandchildren come, they eat properly. I usually manage on some toast and eat at night"* [6]. Another woman said this about her mum, "*My mum gives me and the children food, but she's not really in a position to help*" [6]. A similar reference was made from a grandmother forgoing food for her grandchildren. However, for some women inter-generational poverty meant family were not always able to help. Further, women drawing on assistance from their families often substituted the food they were offered with their unpaid labour as a way of retaining self-esteem and autonomy, *"I would help out a lot at home to repay the debt. I would work really hard, I would clean and cook…".* Cultural and religious frameworks were also found to strengthen informal support networks, particularly for Pakistani women [294]. Within this culture, *"food is always circulating"*, not only within families but also between neighbours "*neighbour gives to neighbour",* "*it is bad not to give food to your neighbours if someone is hungry while you are well fed*" [294]. Religious festivals presented a particular occasion for food sharing for Pakistani women but it also happened outside of that, *"part of Islam to give to your neighbours, even if your neighbours are non-Muslims…you must give to them if you have a full stomach and they have gone hungry…even when you don't know they are hungry – you can't ask*!" [294].

6.4.4 Healthy start vouchers a 'nutritional safety net'

An alternative approach to accessing sufficient healthy food was HSV, a form of social security provided in the UK (see section 2.5). Both Lucas et al. [280] and Ohly [293] found that the vouchers had varying impact for mothers in terms of the financial assistance they provided to influence women's diets. The vouchers were used to: (1) buy additional fruit and vegetables or, (2) subsidise food costs. For some mothers, the vouchers were deemed critical in providing a financial safety net for food "*You're sort of relying on the vouchers just to get you a little meal"* [280]. For some women, without the vouchers, fruits and vegetables were classified as non-essential. These items would often "*fall off the list",* one woman said *"without the vouchers I wouldn't buy fruit and veg"* [289]. Thus, for some women, vouchers were used to increase the amount of fruit and vegetables bought.

These women carefully planned their shopping as they were unwilling to compromise on the quality of their diet '*we can get clothes from the charity shop, and we do that, but food is important to me*" [280]. Again, this links to the juggling act women face when balancing

poverty; in this instance women chose to prioritise healthy food. For most mothers, the vouchers were described as a *"big relief"* or *"big help"*. One mother illustrated how the vouchers helped cover some of the cost of formula when breastfeeding is not going well, saying that it *"…takes away the worry about how to feed your baby…"* [289]. One woman described how the vouchers provide a "*sense of fairness"* because *"it wouldn't be fair if people like myself couldn't afford it without the Healthy Start vouchers"* referring to the fact that she can now afford to buy the fruit and vegetables she needed [293]. However, some families felt that *"£3.10 a week was not enough"* and did not influence their food shopping practices or help them, "*It's sometimes frustrating that they don't cover the cost of formula, if we're a bit skint that week it's trying to find a bit of money in a tub somewhere…"* [280]. Some mothers used the vouchers to *"alleviate some of the stress associated with providing for the family"* [293]., thus the vouchers provided a *'nutritional safety net'* freeing up money without having to reduce the number of healthy foods they bought.

6.4.5 Theme one summary

In summary, across the studies women's accounts have shown how food insecurity can impact women's food practices as they try to continue to access sufficient food in socially acceptable ways. These strategies impacted their dietary quality, psycho-social health and wellbeing and overall quality of life. Translating the studies suggests that the gendered informal support networks that some women lean on to access food may be protective, but the inter-generational poverty exposed in some of these studies may be a limiting factor for some women to exercise this coping strategy. For some women, leaning on food banks was necessary and these studies showed the potential unhealthful consequences of doing so, raising questions about the suitability of charitable food aid as a long-term response to food insecurity.

6.5 Theme two: Embodying food insecurity

The second theme related to the progression from women's awareness and frustration at their experience of food insecurity, to the embodiment of food insecurity. This includes the tension felt between women's nutritional desires and their inability to meet them, the sense of resignment to food insecurity, the personal sacrifices mothers make when living with food insecurity, and the embodiment of this experience as it establishes both physical and mental health and wellbeing impacts.

6.5.1 Inability to meet own nutritional needs

Women's understanding of healthy eating and their own nutritional needs was evident across the studies, yet women were unable to fulfil their nutritional needs or desires. Most women described healthy eating in terms of fruit and vegetable intake. There was a lack of

corresponding reference to other healthy eating measures, for instance, saturated fat, sugar, or salt intakes. Nevertheless, women had a clear understanding of what they were missing in their diets and how this impacted their health and wellbeing *"I really do need lots of broccoli, lots of things with iron in it and meat is one of those things that's higher in iron and we're really struggling on that score at the moment"* [239]. They were aware of how their personal health needs should be aligned with their nutritional needs, but fulfilling that need was an issue because of the financial barrier to accessing healthy foods. Garthwaite et al. [284] describes how women were '*favouring processed, cheap alternatives'* over fruit and vegetables but there was a sense of frustration at their situation with women doing *"…the best I can with what I've got like I say it costs so much to get the food that I need"* [284]. One woman was pushed towards buying "*tinned foods that are often out of date"* rather than fresh produce to prevent the possibility of food waste. She was aware of her health needs, but again unable to fulfil them, constrained financially, and she felt she needed to defend her nutritional knowledge *"... I'm not unintelligent, I know what I need to keep my levels going…"* [239]. Jolly [287] supports the notion that women are aware of their nutritional needs with one woman identifying, "*If I had the resource, more fresh fruit and vegetables, and ... a cleaner diet really, and more cleaner living, at the moment you just have to work with what you've got*" [287] . Women were not satisfied with their overall dietary intake in terms of dietary variety, lack of quality, choice, and food type [285, 288, 291]. A sense of frustration can be felt through some unwelcome compromises, "*I think about how much meat's actually in processed food. That's what I think about. Cos I don't like gieing [giving] them junk*" [285]. However, the frustration went beyond the self and being unable to meet nutritional desires. There was an ethical trade-off between different types of food, where women were unable to meet their ideals of consuming sustainably. They wished for products of higher quality in terms of ingredients but also in relation to the way they had been produced and processed. Women were conscious of how environmentally-friendly products were, and how their food parcels and overall diet did not meet their values [291].

6.5.2 Maternal sacrifice

Not only were women unable to fulfil their own nutritional desires but mothers across the studies spoke of sacrificing the food they did have for their children. Maternal sacrifice was cross-cultural, with all mothers prioritising food for their children over themselves. One migrant mother living in Birmingham, UK, says that she would *"... spend a whole day when I don't eat at all, or a day when I just eat once"* or eat "*whatever he's left over, or otherwise I just get some smart price noodles or bread, 40p bread"* to ensure her children can eat. Sacrifice helped maintain children's nutritional intake whilst coping with irregular access to food [287]. This

sacrifice impacted dietary quality, quantity, and pattern. This is seen again in Power et al. [294], where both Pakistani and White British mothers prioritise their children's needs before their own, *"I won't eat breakfast, I won't eat dinner, I won't eat tea, just to make sure there is enough food for the kids"*. Mothers felt, as Ohly [293] reports, a '*strong sense of responsibility'* toward their children. For some women this meant they were willing to make sacrifices for their born children whilst pregnant. For example, a pregnant woman and mother of a 2 and 4-year-old spoke of how vouchers were being used as a bundle for her family. Even whilst pregnant she would go hungry for her toddlers without questioning her actions *"…you are always going to give it to your children first. You would leave yourself hungry for your children."* [293].

This sense of responsibility was heightened for lone mothers, who spoke of reducing their own food intake and going hungry, thus impacting their dietary quality. This sacrifice was used strategically to meet the demands of poverty and its different aspects. Meals would be skipped to pay utility bills, or to ensure that debt associated with bills was not accumulated *"I've got £5 at the end of the week or whatever, this has either got to go on electric or, or something else… I will skip meals"* [299]. Mothers were constantly having to re-evaluate their priorities to ensure they had enough money to buy some food for themselves and their children, *"I'm not going to do that extra load of washing, just because I don't know if I can afford it, and I need to make sure I've got money in my purse to go and do food shopping"* [299]. However, maternal sacrifice was not just of food, some mothers sacrificed their pride to attend food banks so they could access sufficient food for their children, perhaps due to perceptions that being able to feed your family is a marker of *'good mothering'* [288]. Finally, maternal responsibility did not switch off once the child turned 18 years old or when women became grandparents. Power et al. [294] and Purdam et al. [6] both found that maternal sacrifice of food was inter-generational One grandmother attended food banks so she could access sufficient food whilst saving money to pay for the bedroom tax for the bedroom her grandchildren used when they stayed with her, "*The Benefits Agency told me to ask my daughter for the extra money for the bedroom tax … I need the room when my grandchildren come to stay. I am too embarrassed to ask her so just save on other things and come here as well"* [6].

6.5.3 Physical, mental health and wellbeing

Across all the studies it was clear that women were not getting enough food, or the right kind of food, and that they absorbed the misery. The cost was embodied by women which manifested physically and mentally moving them on a trajectory towards sub-optimal health. Food insecurity directly impacted physical health and wellbeing. Mirroring the depletion of income at the end of each month, Garthwaite et al. [239] describes how the cyclical nature of food

availability within the household influenced one woman's body weight *"I'm putting weight on in the first week and then I'm losing it on the second week cos there's no more food"*. Whilst for another woman with difficulty digesting wheat and dairy, the cyclical nature of dietary quality impacted her gut health "*so we'll maybe have a healthy week but then we'll maybe have quite a poor nutrition week…the other week I bake a lot so we eat scones, there's no meat involved, we'll have pasta just with a plain sauce cos there's no fruit or veg to put into it…but without any fruit or veg in it, that's when I start to get stomach problems…"* [239]. Yet, despite the negative health consequences felt by these women they were unable to make changes to the quality of their diet, as one woman says *"… but we can't afford to do anything other at the moment*" [239]. For other women food insecurity was embodied as light headedness or panic attacks, whilst for lone mothers it was reported that ongoing uncertainty around access to sufficient food resulted in '*sleepless nights'* and physical feelings of sickness [299]. Indeed, the impacts of poor nutrition on health had an impact on some women's ability to function productively. This contributed to some not being able to hold down a long-term job role. One woman described needing to *"nick some of the sugar from the coffee machine"* to see her through to lunchtime. Not only was she experiencing a lack of energy to perform her role but she felt conscious of colleagues perceptions of her and her work identity [297].

Fundamentally, across the studies, food insecurity impacted women's mental health and wellbeing. This began as worrying about having enough money to buy food "*You do think 'what if I get to the checkout and I've not got enough?... So aye, you're constantly thinking"* [286], but became ingrained in almost all aspects of life. Embodied into their everyday lives was worry around sufficiency of resources alongside the ongoing re-prioritisation of resources. An internalised manifestation of this insecurity was dampened self-esteem. Thus, self-reliance in relation to food was important for women to feel a sense of agency, and women spoke of needing their cupboards to be full, and having food in reserve, to feel secure, yet this was often not the case. Further, for mothers this inability to feed their family was perceived as their inability to be a *'good mother'* [297, 304]. For lone mothers this experience of worry felt heightened. They described feeling *'trapped'* or *'hopeless'* at needing to rely on other people, and in turn spoke of how they experienced ruminating thoughts and ongoing worry and stress about financing food. For some, feelings of hopelessness and depression were experienced "*I've had sleepless nights and nights full of tears, where I've just thought I literally don't know how I'm going to get through the next few days. I've got no food, no money…So yeah, definitely times where I've felt very, very depressed about the situation and can't see a way out of it almost*" [299]. Jolly [287] provides an example of how, whilst wanting a better diet, some women were resigned to the reality of what they could afford, one woman said "*I can't change*

nothing about my diet because when you're poor, you just have to live with what you've got…" [287]. This sense of resignment was echoed by women in Stack and Meredith [299] where lone mothers had sole responsibility for their children, *"I'll be having toast for dinner. That's, that's kind of life really"*, "*there are cases where I will skip meals"*. This indicated that over a period, women have lost hope in moving out of poverty.

6.5.4 Theme two summary

Women were unable to meet their own nutritional needs due to financial constraints and were dissatisfied with their own diet, persistence of which led to women resigning to their poverty. This section discusses how women felt responsible for their children and family's food, and so often sacrificed their own nutritional needs as a coping strategy for the financial pressures they were under or sacrificed their pride to access food in socially unacceptable ways. Food insecurity negatively impacted these women's physical and mental health and wellbeing.

6.6 Discussion

This review provides a progressive storyline of women's experiences of food insecurity and the ways in which: they attempt to access sufficient food, they are unable to meet their nutritional needs, this is embedded into their everyday lives, and embodied in unhealthful physical, social, and mental health and wellbeing impacts. The discussion that follows considers the analysis in relation to the original aim of the review and the broader literature.

Resonating with previous literature [169], this meta ethnography illustrates that women were aware of what healthy eating meant and how to meet their own nutritional needs. At a European level, the food and nutrition action plan by the WHO for Europe encourages member-states to promote the gains of a healthy diet throughout life especially for most vulnerable groups [305], for example by adopting a health-in-all-policies approach. In the UK, where the majority of included studies were set, women referred to fruit and vegetables reflecting the widespread public health campaigns promoting five-a-day and Better Health [306, 307]. They showed a responsible attitude toward budgeting for, procuring and preparing food, with studies portraying the ongoing juggling act women and mothers faced daily. Yet they were still unable to access sufficient healthy food for their families. Structural factors, such as income, social security and inflation, limit decisions around food choice and practices, for example, the increase in food and living costs [11]. Healthy foods are three times as expensive as less healthy foods per calorie and the poorest fifth of UK households would need to spend 40% of their disposable income on food to afford the Eatwell guide [308]. Inequality in material resources at individual and community level accumulates over the life course. Being unable to access a nutritious, balanced diet will, over time, result in poorer health outcomes. There is a need for income-based solutions

to address this root cause of food insecurity, which is poverty. The 2021 National Food Strategy, an independent review of England's food system, proposed various recommendations to reduce diet-related inequality [16]. Relevant to women, these included: extending the Healthy Start scheme a cash benefit, and trialling a 'community Eatwell' programme enabling GPs to socially prescribe fruit and vegetables along with food-related education and social support to those with food insecurity [309]. However, this suggests that those who are food insecure need food-related education, which does not align with the findings of this review. Moreover, this perception has the potential to amplify stereotypes and stigma around those who experience poverty i.e., being low in competence and personally failing [310].

Instead, this review explicitly recognises the multiplicity of poverty and inequality which policy and research has fragmented over recent years, e.g. into *'food poverty'* or *'fuel poverty'* [311]. A whole system poverty lens emphasises that lived experience of food insecurity is about more than access to food, including access to fuel, space, and equipment to cook. This was explicitly shown amongst women living in temporary accommodation, for whom access to a (non-hostile) kitchen to cook food and a space to enjoy meals was not guaranteed. The ongoing cost of living crisis that has hit people with increased food, fuel, and electricity bills will not alleviate pressure on these multiple poverties [312]. Responses from respective governments across Europe will determine whether this contributes to increasing food insecurity [2, 4]. In this review, women and mothers were constantly re-prioritising resources to balance sufficient food within the household with other essential needs, reflecting what Lister describes as the '*work'* involved in getting by when living in poverty [119]. The post-2008 recession is the longest, deepest and widest recession, worse than the *'great depression'* of the 1930s [313]. It is well recognised that the recession and austerity in response to the 2008 global financial crises have unequally impacted the most vulnerable people with them facing the largest cuts to public budgets and increasing unemployment (section 2.6). Despite a 17 year gap since Attree's systematic review of qualitative studies on the lived experience of poverty [169], this review similarly found that food insecurity is a managed process, with *'strategic adjustments'* embedded within women's daily lives. Further, it is apparent that women's everyday lives are embedded within wider socio-economic situations; the context of economic recession (for some, austerity) was palpable. Although women did their best to negotiate this context, the reality of increasing food prices, benefit cuts and lack of flexible, secure employment were unconducive to protecting the basic human need of healthy food.

FEBA was established in 1986 [138]. However, shifts in the growth and need of food aid have occurred over the last few decades. For example, in Spain, 2008 was a particular juncture of

growth of food aid and need [314] whilst for the UK this occurred in 2010 [314]. In Portugal, food banks have proliferated with increasing demand since 2008 [72]. These shifts appear to coincide with regressive changes to social policy and welfare reform underpinned by neo-liberal ideologies [4, 72, 314]. This review highlights food aid as a last resort, despite perceptions of food bank misuse in the media [315]. Women described it as a '*lifeline'* reiterating their position of desperation. Echoing previous research [316, 317] there was a tension surrounding women's experiences with food aid. Women who accessed food aid described both gratitude towards it and the hidden costs of its use, mainly psychosocial. Embedded within accounts were what Retzinger (1995: 1107) calls *colloquialisms of shame*; verbal cues signalling the emotion and psychological impact of being unable to meet expectations set by themselves or society [316, 318]. Chase and Walker [316] describe poverty as a breeding ground for shame given the society we live in, where material resources facilitate participation in the social world and are a marker of success. They argue that shame can take on a dynamic of its own, playing a role in human behaviour. The women who felt shame in our review distanced themselves from the socially constructed 'them' by avoiding social situations that highlighted their limited resources, such as eating out, despite leading to social isolation or feeling ostracised. Such poverty-related shame can lead to people pretending they are coping when they aren't, because the risk of losing pride is too great [316]. Pride for women was linked to *'being a good mother'*, which entailed providing sufficient food for their family. Requiring food aid signified an inability to meet this expectation set by themselves and the rhetoric of society. Consequently, this became entrenched into narratives of failure, linking to a feeling of powerlessness alongside physical and psychological deterioration. This shows how food is about more than nutrition but intertwined with feelings of dignity and worth. Healthy Start vouchers were viewed as a more *'dignified'* approach to accessing sufficient food for women. In 2021, modifications to the Healthy Start scheme meant increased value (from £3.10 to £4.25 per week), and the voucher switched to a top-up card available to use anywhere accepting Mastercard, with the option to save money toward a larger one-time spend. Whilst there is yet to be an evaluation of this new approach, women in this review reported the *'nutritional safety net'* of vouchers, which reduced stress and worry. A potential pathway linking food insecurity to poorer mental health and wellbeing outcomes is via this economic uncertainty women live within. Uncertainty generates physiological stress and uncertainty about future outcomes can result in anxiety [319, 320].

In this review the role of both informal and external support networks was evident. External support focusses on redistribution strategies such as food banking [321], whilst informal support uses reciprocity strategies, such as mutual aid groups [322]. Although, for Pakistani women their cultural and religious frameworks strengthened their informal support networks,

mitigating food aid use. Women in this review often substituted the food offered for unpaid labour to retain self-esteem and autonomy despite their networks providing unconditional support. Informal networks of care were protective against food insecurity and helped facilitate opportunity for social eating. These networks fostered a gendered organisation of care; despite progression in female employment and education, gender inequalities persist in terms of unpaid work, with women providing the bulk of informal multigenerational care for both children and other members of the household [323, 324]. This creates a more difficult conflict for women than men between work and home obligations, which entails more than food i.e., child or elderly care. This gendered obligation is seen across high-income European countries including Denmark, the Netherlands, Sweden and the UK [323]. Furthermore, this review shows that women remain shock absorbers in poor households and are the first to go without when food budgets are tight. Like Attree's 2005 review [169], this review found that across all studies *'maternal sacrifice'* was used to manage food insecurity, consequently impacting maternal diet, nutrition, and health. Maternal sacrifice suggests that other coping strategies have been ineffective at providing enough food. Mothers therefore are sacrificing nutritious foods, substituting for cheaper, energy-dense foods alternatives or skipping meals reducing their overall intake [186]. Despite facing economic difficulties, women engaged in the moral narrative of 'good mothering' through their food practices [286]. By sacrificing food for their children, women demonstrated their role as a mother as a priority and central to their identity. Further, our review demonstrates maternal sacrifice remains gendered and trans-generational.

In this set of studies women talked about the variety of strategies used to negotiate their food insecurity, such as stopping socially eating outside of home and with others. Eating together, referred to as *'commensality'* creates bonds and builds community [325]. The inability to participate in social eating thus, negatively impacted women's quality of life because of reduced social connection and enjoyment around food. Evidence shows social eating is pleasurable and enhances the taste of food, whether good or bad [326-328]. Eating is a biological necessity, but food is also social and cultural [329]. Fischler [325] proposes eating as the *'primary social function'* because traditionally acquiring, preparing, and distributing food was done co-operatively, with meals eaten in a social context. National data from the UK supports this, concluding that social eating may be an evolutionary mechanism designed to increase social bonds [330]. This review found that some women maintained commensality by having friends bring their own food to their home, demonstrating perhaps a strong bond with these friends prior to their experience of food insecurity, or their acknowledgment of the importance of social eating to their wellbeing. Whilst for Pakistani women, hospitality was of importance culturally, and food was a vehicle for the expression of enjoyment, therefore they sacrificed other luxuries

for food. The emergence of social eating initiatives, such as pay-what-you-can cafés which re-distribute surplus food without a set price or need for referral, offer a *'more than food'* approach where the value that participants contribute is attributed differently [331]. These offer a hybrid form of commensality wherein the domestic, charitable, and eating out forms of commensality intersect by offering an alternative mode of food provisioning that challenges the charitable food aid system [332]. This may fulfill two needs, the first of achieving social goals through *'alimentary participation'* [333], as well as fulfilling a material necessity about pooling resources.

This review details the progression of women's experiences of food insecurity from awareness and frustration to the embodiment of this experience as it establishes both physical and mental health and wellbeing impacts. Dowler explains how food insecurity can impact health. "*Not having enough food is a very private issue. […] It is an issue of private shame. […] And it is an issue of private suffering. If you are not good at getting enough food, or the right kind of food, you absorb the misery yourself. The cost is embodied by you. It is your body that becomes unhealthy"* [334]. In other words, the body keeps score of what we are experiencing and embodied reminders influence the way we move (or can't) in the world [335]. The concept of embodiment comes from eco-social theory of health inequalities [336]. Briefly, embodiment acknowledges that as humans, we are both social beings and biological organisms. It recognises that like other living organisms we incorporate biologically, the world in which we live, that is, both our societal and ecological circumstances [337]. Over time, the environment is embodied into bodily characteristics such as weight status, or specific gene expressions through both conscious and unconscious processes. This review demonstrates that women's interaction with their precarious food insecure environment can lead to temporal transformation of bodily characteristics through both conscious and unconscious processes. Conscious processes refer to when someone lacks agency over their decisions [337]. Women lacked choice over the foods they ate, whilst also being aware of their social position through their inability to access sufficient food in socially acceptable ways, which impacted on mental health and wellbeing. As Halligan [285] explains, the impacts of poverty on exclusion from mainstream consumer society highlight the way that these people feel *'different'*, impacting their sense of pride and self-worth. For women in this review, experiences of insecurity over time led to a sense of resignment and hopelessness. Further, for lone mothers, this progressed to feeling trapped, rumination, experiencing depression and suicidal thoughts. Anxiety and depression are compounding factors of metabolic disease over time and food insecurity is strongly associated with anxiety and depression [338]. Arenas' (2019) systematic review and meta-analysis conducted in the USA amongst adults with food insecurity found a strong association between

food insecurity, depression, anxiety, and sleep disorders although a limitation is that results were all from cross-sectional studies [338].

Unconscious processes of embodying food insecurity include the physiological effects resulting from the consumption of inappropriate foods for dietary needs, or the inability to maintain consistent dietary patterns. These review findings support Basiotis's work that households with tightening budgets meet their energy intakes at a lower cost by purchasing cheaper energy dense foods to save money (Basiotis, 1992 as cited in [196]) (see section 3.7.1) Nevertheless, this review is not able to link energy dense diets to being *'obesity promoting'*. Most accounts from women did not link their dietary quality with weight status, although they did indicate that their dietary quality was linked to gut health issues and feelings of sickness. However, several women described the impact of the cyclical nature of food insecurity on weight status, providing evidence of the cyclical nature mechanism and potentially insurance hypothesis mechanisms amongst food insecure women. At the end of the month further tightening of budgets resulted in mother's restricting their food intake, leading to cyclical weight loss and gain. Mothers often skipped meals throughout the month to ensure that their children had enough to eat, and they could afford other competing expenses. The inability to afford enough food for their family led some women to have sleepless nights from the ongoing emotional distress (i.e., worry and stress). Thus, revealing chronic stress (section 3.7.4) as a potential pathway linking food insecurity, diet quality and weight amongst women. Sleep duration is linked to overweight and obesity with short sleepers (less that 6hrs per night) twice as likely to develop obesity [339] Short sleep not only means there is a greater window for eating and drinking but also leads to dysregulation of hunger hormones increasing ghrelin and lowering leptin resulting in higher energy intakes [339]. In other words, food choices sway toward higher high fat, sugar and salt products which have increased reward sensitivity [339]. In addition, tiredness can lead to less physical activity [339]. Women in this review felt ongoing stress. Stress arises due to activation of the sympathetic nervous system. Prolonged activation of the sympathetic nervous system is damaging for health, resulting in reduced biological resilience over time. Research shows chronic stress to be a risk factor influencing visceral fat accumulation and chronic disease [200, 201]. Activation of the sympathetic nervous system can indirectly lead to weight gain through metabolic changes and fuel oxidation [340]. Hence, chronic stress could be a pathway through which poorer nutrition-related health outcomes, such as overweight and obesity, manifest, although stress alone does not account for the relationship between socioeconomic disadvantage and obesity [341].

These review findings suggest that food insecurity may be a fluid, dynamic experience. Applying the concept of *'liminality'* could help elucidate this dynamic in relation to women's food statuses [342]. Moraes et al. [342] propose that liminality has three stages. The first stage of liminality is when women transition from food security to insecurity. The second stage involves coping with and through the *'in-betweenness'* of food insecurity. This stage particularly illuminates the experiences of women in this review. It is characterised by a limbo state, with women in constant flux regarding their food consumption practices because of their need to access supplementary food. Women tended to flux between needing to rely on informal and external support networks. Meanwhile, a state of chronic limbo is also possible. For example, this review demonstrates that some women felt a sense of resignment to living in poverty, whereby adopted coping strategies become part of habitual life. However, Moraes et al. [342] proposes a third way (which they define as *'para-liminality'*) where people re-emerge from their food-related liminality and reintegrate into mainstream consumer practices, albeit in a renewed sense. This renewed sense can look like accessing food co-operatives or pay-as-you-go cafes that endeavour to enable some degree of food choice. This *'third way'* potentially negates anxieties about going back to food security where one must manage their own budgets and make food decisions.

This review identified a lack of studies from non-UK European countries. Nevertheless, it was possible to compare across included studies for diverse experiences of food insecurity between different population groups, in particular lone mothers (n=3), and migrant women (n=3). These were the only two groups of women to express what Attree [169] calls *'resigned adjustment'* where adjustments to eating practices and diet are taken for granted, as part of life. The experience of migrant women appeared to be more severe, that is they were reflective of very low food security, due to tighter budgets, perhaps given the precarity around their rights to remain in a country and right to social security. Economic constraints, lack of knowledge about new foods, language barriers, difficulties shopping, as well as religious compliance are all associated with more severe food insecurity [343]. Their accounts portrayed a heightened awareness of money where not wasting food was essential for survival. Meanwhile, accounts from lone mothers illustrated heightened levels of psychological impacts because of food insecurity, perhaps due to lone responsibility and financial burden that lone mothers endure. Indeed, lone parents are a group shown to experience higher levels of poverty than families generally [95]. Globally, governments have attempted to address this issue by encouraging employment through making receipt of benefits conditional to efforts to find work, known as Welfare to Work programmes [344]. Yet, research shows that employment does not necessarily reduce poverty for lone parents [344]. Indeed, in-work poverty was evident through this review.

A systematic review of Welfare to Work across HICs found that the demands of parenting alone and employment are frequently in direct conflict, and lone parents were often denied control over major life decisions and everyday routines by Work to Welfare obligations [344]. Further, Welfare to Work programmes did little to improve their health and wellbeing or economic circumstances, instead leading to low-paid, precarious jobs. Meanwhile, in the UK lone parent obligations introduced in 2008 mean that lone parents lost entitlements to benefits based solely on being a lone parent [345] (see section 2.5). This may have added to the heightened levels of psychological stress lone parents face due to reduced income and consequent food insecurity.

6.6.1 Member checking findings

The patient, public, involvement member-checking workshop consisted of six women. Five were mothers (all five had school aged children and two also had pre-school children), three were grandmothers although one was referred to as grandmother by her neighbours' school children who frequented her house for food often. Four out of the six were regularly visiting food banks or using community larders and co-ops. Women confirmed that all of the review findings resonated with their lived experience, answering 'yes' to each prompt (figure 11) I showed them. The workshop discussions emphasised how living on a tight budget limits women's ability to treat themselves to non-essential food items such as a coffee. One woman had never had a coffee from a coffeeshop like Costa because she could not afford to spend those few pounds on such an item. Further, women spoke of lacking any form of social eating. Cooking and budgeting classes were the only form of commensality for these women. Therefore, although this review finds these classes are not appropriate to tackle food insecurity with potentially stigmatising effects in the process, these classes could perhaps serve another purpose, that of commensality. The emotional and mental toll of their lived experience was obvious. These women told me that they felt like they had a lot of weight on their shoulders trying to feed their families on tight budgets. Women felt further stress by having to support their parents who were also on tight budgets with money and food. The negative effects of trans-generational poverty are seen here.

Some areas that warrant further research These include examining the effectiveness of the new Healthy Start Programme. Women spoke of family and friends not being accepted to the scheme using the new system, however, they did not give a reason. Therefore, it is not clear whether this is due to eligibility issues or administrative issues. For those using the new card system, women reported a reduced number of shops accepting them. Strikingly, the HSV did not accommodate dietary requirements. One woman reported that her daughter was unable to use the vouchers towards dairy-free alternatives despite her baby's intolerance to cow's milk.

Further research can also explore the use of community larders which women deemed to be less stigmatising than food banks because everyone can use them.

Raised as an issue for women in relation to accessing sufficient healthy food was transport. Transport did not feature in the review, but it is relevant to inform recommendations and future research. Transport was an issue for those who had mobility issues but liked to shop around for the cheapest deals. Instead, online shopping was used. However, value-based shops such as Aldi or Lidl do not deliver therefore women had to buy from more expensive supermarket chains, reducing dietary quality and quantity. Another limitation was the number of items that could be purchased (especially during the pandemic) and so women could not make use of the strategy of bulk buying certain items.

6.7 Conclusion

The findings from this review contribute to literature examining the nutritional health and wellbeing experiences of food insecure women within European HICs. The storyline presented aligns existing concepts with new understandings of the lived experiences of food insecure women and how it impacts their nutritional health and wellbeing. The synthesis of data demonstrated that a key driver to women's experiences of food insecurity was inadequate income and that women were highly capable of managing their resources, using complex coping strategies in a bid to access sufficient food. Despite this, women were unable to meet their nutritional needs and desires, leading to exclusion from social norms. Insecure food environments were a source of stress and emotional distress for women which could act as a pathway toward poorer nutrition-related health outcomes such as overweight and obesity. Although food aid services provided nourishment to women, they raised important questions concerning their appropriateness as a response to food insecurity. Indeed, data from this review illustrates that women were more likely to lean on trans-generational, gendered informal support networks. Such networks acted as a protective mechanism against food insecurity by helping women secure food, thereby preventing physiological hunger, whilst also facilitating commensality and, in turn, enabling *'alimentary participation'*. Lone mothers and migrant women were particularly vulnerable to more severe experiences of food insecurity as the only groups of women to articulate resignment to food insecurity. They shared heightened psychological impacts from trying to access sufficient food and worse physical health impacts due to seemingly more prolonged episodes of going without enough food.

There is a need to further explore, first, how pregnant women experience food insecurity in relation to its impact on their nutritional health and wellbeing within the European context – I identified no studies focusing solely on food insecure pregnant women. Second, the ways in

which stigma and shame influence nutritional health and wellbeing outcomes for those living with food insecurity to develop health policies that recognise, understand and address this. Third, differences between how women accessing food aid services perceive the service and food on offer and how food aid service staff perceive the situation. Finally, there is a need to evaluate the updated Healthy Start scheme to determine if the modifications are effective and contributing to reducing nutritional inequalities for women and young children. This review emphasises that food insecurity directly and tangibly impacts women's nutritional health and wellbeing. It concludes that there needs to be greater recognition of the psychosocial impact of food insecurity on vulnerable women and in addition to its impact on their nutritional health and wellbeing.

CHAPTER SEVEN

7 Chapter seven – Children's nutritional health and wellbeing in food insecure households in Europe

7.1 Chapter overview

This chapter presents the findings of the systematic review and meta ethnographic synthesis of studies exploring how food insecure caregivers and children perceive food insecurity to affect children's own nutritional health and wellbeing. This chapter starts with a summary of the characteristics of included studies, it then presents the narrative synthesis and meta ethnography of this review. Included are 19 studies from seven European countries, using seven different qualitative methods, set within the context of the period between the 2008 global economic recession to 13th July 2021.

7.2 Characteristics of included studies

Table 6 overleaf includes the characteristics of included studies. Included studies represent 813 participants in total (n= 447 caregivers, n=365 children) with sample size ranging from seven to 278 participants. The ages of children represented in this review ranged from 18 months to 17 years old. Only four studies explicitly stated the ethnicity of participants, which included White British, Norwegian, Angolian, Portuguese, Romanian, Polish, Roma, Somalian, Pakistani, Portuguese, and West African. Fourteen studies took place in the UK, one in Ireland, one in Greece, one in Denmark and one in Spain, whilst one study included data from the UK, Portugal, and Norway. In total, 10 studies primarily focused on food insecurity. One of these studies measured food insecurity using the 18-item HFSSM[2], whilst five studies used either free school meal eligibility or food bank access as a proxy measure. In total, nine studies discussed food insecurity as a secondary focus in the context of wider research.

Ten studies reported only the caregiver's perspective of their children's nutritional health and wellbeing (table 6). Five primarily focused on food insecurity, whilst food insecurity was a secondary focus for the other five. Two of these studies focused specifically on caregivers of pre-school children, although neither had a primary focus on the impact of food insecurity on the young child's nutritional health and wellbeing. The other eight studies reported on caregivers' perspectives of children of all ages. Six studies reported both caregiver and children's perspective, with children's ages ranging between 10 to 15 years (table 7). Four studies discussed food insecurity as the primary focus of the research, whilst the other two studies discussed food insecurity as a secondary focus in the context of wider research, for example with the primary focus being austerity or experience of a school feeding programme.

[2] United States Department of Agriculture, Household Food Security Survey Module

Finally, three studies reporting only children's perspectives (table 8). In these studies children's age ranged between 5 to 15 years, with most aged 11-15 years old. Two of these had a primary focus on food insecurity, the other a secondary focus. None of the included studies with a primary focus on food insecurity included solely caregivers of infants 0-2 years (i.e. the first 1001 days).

Study	Country of study	Focus^	Study aim	Method	Setting	Participants	SES	Measure of food insecurity
Hayter et al. (2015) [346]	UK	Secondary	To explore parents' perceptions of feeding their pre-school children in two low-income populations in England	4 focus groups Family interviews	Community Children's Centres Islington, inner city urban London & Cornwall, rural county in Southwest England	• N = 33 focus group participants & 6 family interview participants (36 mothers and 3 fathers) • Age = Children between 18 months – 5 years • Ethnicity = Not stated	No socio-economic data was collected, but all children's centres were in deprived areas, which target deprived families, families considered vulnerable by staff were invited to participate	Not reported
Lovelace and Rabiee-Khan(2015) [347]	UK	Secondary	To explore the influences on the diets of young children in families on low income	Semi-structured interviews	West Midlands, UK	• N = 12 (10 mothers + 2 fathers present at interview) • Age = Children 2 – 37 months (average age 22 months) • Ethnicity = Not stated	Low income (did not own their own home, were in receipt of income support and/or qualifying for HSV	In receipt of or qualifying for HSV
Nielsen et al. 2015 [292]*	Denmark	Secondary	To provide insight into typical patterns of coping among budget-restricted households	Interviews	Homes of participants Denmark	• N = 30 Danish individuals (2 low-income women) • Age = Not stated • Ethnicity = Not stated	Women with low-income Women had implemented changes to food practices due to economic restraint	Not reported
Spencer (2015) [298]*	UK	Primary	How does urban inequality and deprivation affect the way those facing these issues source food and how does this affect their food choices? How do other modern issues relating to deprivation affect diet and their meanings and interpretations of food e.g. being in receipt of benefits or having to use food banks as a source of food?	Semi-structured interviews	Community setting Aberdeen	• N = 15 (9 female (2 low-income mothers) • Age = 25-45 years • Ethnicity = Not stated	2 mothers single, unemployed living in 10% most deprived area of Scotland, renting housing from council, 1 woman part-time employment, divorced, renting from housing association	Not reported
Condon and McClean, (2016) [348]	UK	Secondary	To explore the barriers and facilitators to maintaining pre-school children's health amongst migrant families in the UK	5 focus groups with parents (in first language of participants)	Community England	• N = 28 (22 mothers, 6 fathers)	Families recruited from inner-city areas in the most deprived 10% in England (2 families living	Not reported

Study	Country of study	Focus^	Study aim	Method	Setting	Participants	SES	Measure of food insecurity
						• Age = All children under 6 years • Ethnicity =.7 Romanian, 6 Roma, 6 Polish, 5 Somali, 4 Pakistani parents	in temporary accommodation)	
Canton, (2018) [282]*	UK	Secondary	To explore lone mothers' experiences of economic crisis and austerity, examining the ways in which their social relationships help them cope and adapt	Semi-structured interviews	Bath or Bristol Southwest of England	• N = 30 lone mothers • Age = 21-52 years • Ethnicity = Not stated	15 mothers were in paid employment	Not stated
Jolly (2018) [287]*	UK	Secondary	(1) To understand the experiences of food poverty for families who were at risk of destitution because of their immigration status. (2) To identify transferable learning for practitioners to improve social work and social care practice with this service user group.	Series of semi-structured interviews	Play sessions at the project where the researcher worked Birmingham, England, UK	• N = 7 parents from 6 families • Age = Not stated • Ethnicity = Variety of backgrounds and immigration status. 1 Eastern European accession country, 1 asylum seeker, 1 with discretionary leave to stay in the UK, 4 undocumented after overstaying their visas	All had experienced destitution and were in receipt of services by local authority for their children Living in a range of housing; privately rented, temporary bed and breakfast, sofa-surfing	Not reported
Zamora-Sarabia et al. (2019) [349]	Spain	Primary	To understand the factors which are perceived by parents attending the food bank to shape a) the health of their children and b) the possibility for childcare in a context of poverty and food insecurity	7-month participant observations, two researchers, two days a week In-depth interviews	Food bank District of Tetuán, Madrid	• N = 15 (10 mothers, 5 fathers) Among them a total of 22 children (14 girls, 9 boys) • Age = Children aged 1.5-17 years • Ethnicity = Not stated	7 mothers, 5 fathers unemployed, 3 mothers employed (for a max. of 438 euros per month). 3 mothers, 1 father from Spain, 7 mothers, 4 fathers immigrants	Accessing a food bank
Share (2019) [295]*	Ireland	Primary	To understand the dynamic relationship between people, space and food in the particular context of homeless accommodation provision	Interviewer-administered background survey	Dublin, Ireland	• N = 10 parents / families (4 male, 6 female) • Age = Mean age 34.4 years	4 parents in couple households, 6 in single-parent households	Not reported

Study	Country of study	Focus^	Study aim	Method	Setting	Participants	SES	Measure of food insecurity
				In-depth photo elicitation interview		• Ethnicity = Not stated	4 parents in hostel for homeless, 3 parents in budget B&B for homeless & tourists, 2 parents in commercial hotel geared for tourists, 1 parent in budget hotel for homeless	
Power et al. (2021) [350]	UK	Primary	To explore lived experiences of food insecurity and underlying drivers of diet quality among low-income families, drawing upon two years of participatory research with families of primary school age children, 4-11 years	Focus groups	Community centre or café York, North of England	• N = 22 (19 were female) • Age = Not stated • Ethnicity = Not stated	Participants self-identified as parents or caregivers living on a low income	Not reported

Table 6: Characteristics of included studies – caregiver's perspectives only

^ Primary = studies with food insecurity as the focus. Secondary = studies where food insecurity was discussed as part of the wider research * Studies also included in women's review. FSM = Free School Meals, USDA HFSSM = United States Department of Agriculture Household Food Security Survey Module, HSV = Healthy Start Vouchers, IMD = Indices of Multiple Deprivation

Study	Country of study	Focus ^	Study aim	Method	Setting	Participants	SES	Measure of food insecurity
Hall et al. (2013) [351]	UK	Primary	1) To understand the lived experiences of children and their families against a backdrop of rising food prices; and, 2) The positive steps that families have taken to meet the challenge of food affordability and support themselves, in addition to the experiences of families who are not able to cope.	Family case studies Participatory photography	In-home case study visits London, UK	• N = 5 family case studies (3 single mothers, 4 parents) • Age = Not stated • Ethnicity = Not Stated	4 families in receipt in FSM, 1 family eligible but child refuses FSM Low-income families (Single parents; 1 employed full-time, 1 part-time, 1 unemployed, coupled parents each with 1 unemployed and 1 employed part-time or full-time)	Family structure + household income + eligibility for FSM
Hall and Perry (2013) [352]	UK	Seconda ry	To understand and convey: (1) the lived experience of families against a backdrop of austerity; the various impacts of austerity on family life (2) what matters to families and supports them under conditions of austerity, with a particular focus on family finances and wellbeing	Semi-structured in-depth interviews Self-completion diaries Participatory photographs	Not Stated UK	• N = 11 families (7 coupled parents, 4 single parent) • Age = Not Stated • Ethnicity = Not Stated	4 families lived in urban areas, 3 sub-urban, 4 rural areas 5 families with mortgage,	Not reported
Garthwaite et al. (2015) [239]*	UK	Primary	To examine the relationship between ill health and food insecurity among food bank users in the UK	Participant observations Interviews	Foodbank Stockton-on-Tees, Northeast England, UK	• N = 42 foodbank users (20 female, 22 male) • Age = 18-51 years (Child = 11 years) • Ethnicity = Not stated	All participants were on low income or accessing a form of social security	Accessing a food bank
Dalma et al. (2016) [353]	Greece	Seconda ry	To explore the perceptions of parents and students towards healthy eating and related barriers, and their experience of a school feeding programme	20 focus groups carried out separately with children and parents	Schools Province of Attica (Athens is its capital)	• N = 44 parents, 98 children • Age = Children 8-12 years & junior high students (age not specified) • Ethnicity = Not stated	Details for children not given but students were attending elementary and secondary public schools in low socio-economic status regions of Greece	Incidence of food insecurity and other indicators of poverty provided by principal upon school selection

Study	Country of study	Focus ^	Study aim	Method	Setting	Participants	SES	Measure of food insecurity
								– details not stated
Purdam et al. 2016 [6]*	UK	Primary	To understand the concerns food bank users have when visiting a food bank. To explore the sustainability of local voluntary-led food aid policy models	Four case studies Interviews	Food banks in Northwest England, UK	• N = 35 (23 women, 7 men, 2 were couples, 1 child) • Age = mean age 51 years, child 10 years • Ethnicity = Not stated	25 participants had children 3 employed, 31 in receipt of different welfare benefits or waiting for application approval, some paying benefit sanctions	Accessing a food bank
O'Connell and Brannen (2021) [72]*	UK, Portugal, Norway	Primary	To examine how experiences of food poverty are shaped by social contexts and social positionings	In-depth interviews Tour of kitchen with follow-up interview with parents Vignettes Photo-elicitation interviews	Participant's homes Inner London or coastal town in South East of England Urban / Sub-urban areas of Lisbon or Rural areas further away Urban areas across Oslo or Rural / semi-rural areas in non- urban Eastern Norway	• N= 145 children and young people, 133 parents or caregivers (mostly mothers) • Age = children and young people 11-16 years, parents or caregivers age not stated • UK = 45 families and 51 children • Portugal = 45 families and 46 children • Norway = 43 families and 48 children	Families were all deemed low-income by themselves i.e. their income was below what they needed 41 UK families, 44 Portuguese families and 6 Norwegian families met the relative low-income measure employed as poverty (income decile 1 or 2)	Case studies reported were all experiencing or had recently experienced a food shortage

Table 7: Characteristics of included studies – both caregiver's and children's perspectives

^ Primary = studies with food insecurity as the focus. Secondary = studies where food insecurity was discussed as part of the wider research * Studies also included in women's review. FSM = Free School Meals, USDA HFSSM = United States Department of Agriculture Household Food Security Survey Module, HSV = Healthy Start Vouchers, IMD = Indices of Multiple Deprivation

Study	Country of study	Focus^	Study aim	Method	Setting	Participants	SES	Measure of food insecurity
Fairbrother et al. (2012) [354]	UK	Secondary	To explore children's understanding of family finances and how they perceive this to relate to eating healthily	Photo-elicited interviews Debate within groups Follow- up interviews	Photo-elicited interviews and debates within schools Follow-up interviews at child's home North of England	• N = 53 (8 follow-up interviews at home) (24 children in socioeconomic disadvantaged school and 29 children in advantaged school) • Age = 9-10 years • Ethnicity = all disadvantaged children were White British	Details for children not given but children attending two socioeconomically contrasting schools in urban neighbourhoods, determined by eligibility for FSM* and local area knowledge	Eligibility for FSM* - details not stated
Harvey et al. (2016) [355]	UK	Primary	To gain an understanding of London families' experiences of food insecurity by describing its impact from parents' perspectives and obtaining children's narratives ^^	Semi-structured interviews	Community, Arches II Centre (part of Kids Company Charity) South Lambeth, London	• N = 19 children (from 14 families) (mix of male & female, small majority female, 58%) • Age = 5-11 years (median 9 years) • Ethnicity = Not stated	Children from deprived households as accessing Kids Company Charity services	16 children very low food security, 3 children low food security Parents completed a questionnaire with USDA HFSSM
Laverty (2019) [322]	UK	Primary	To explore how children and young people experience food insecurity, particularly outside of the home and school, and the informal practices they use to manage food insecurity	14-month participant observations 2 focus groups	Community Youth Centre North of England	• N = 30 young people observed • 20 participants focus groups (12 boys, 8 girls) • Age = 11-25 years • Ethnicity = Not stated	Details for children not given but youth centre situated in North of England in one of the most deprived neighbourhoods by IMD*	~60% of attendees at youth centre eligible for FSM*

Table 8: Characteristics of included studies – children's perspectives only (^ Primary = studies with food insecurity as the focus. Secondary = studies where food insecurity was discussed as part of the wider research. * FSM = Free School Meals, USDA HFSSM = United States Department of Agriculture Household Food Security Survey Module, HSV = Healthy Start Vouchers, IMD = Indices of Multiple Deprivation)

Quality Appraisal

Eight studies rated *'high'*, eight studies rated *'good'* quality, and three rated *'low'* quality (appendix I). Studies were strong in stating clear relevant research aims, using appropriate methodologies and research design. *'Good'* and *'low'* scoring studies consistently scored lower by not adequately discussing reflexivity or showing how, beyond a positive ethical approval, ethics had been considered. In addition, the two lower scoring studies were reports, where reporting style differs from that of a journal article, offering less reflexivity and discussion of data analysis methods. Critically, a potential limitation of the quality appraisal process is that it assesses how studies were reported and not necessarily how they were conducted.

7.3 Findings

The notion of a *'line or argument'* from the synthesis of included studies, proposed by Noblit and Hare [252] is presented here. The storyline unfolds through four core themes (food and eating practices, child's awareness of food insecurity, fragility, and networks of care) and five sub-themes (diet, compromised infant feeding practices, psychological fragility, social fragility, and physical fragility). Direct quotations from participants are presented in italics within quotation marks, whilst author interpretations are included in italics within inverted commas. Translations of words from quotes are included in square brackets adjacent. Table 9 presents each theme and sub-theme alongside a list of the studies contributing to it with important aspects of their contexts described.

Key metaphors	Sub-themes	Context
Food and eating practices	**Diet** [6, 284, 287, 292, 295, 298, 302, 304, 322, 351, 353-355]	• 9 UK, 1 Denmark, 1 Greece, 1 Ireland and 1 multi-country based studies • 8 studies caregivers' perspective, 5 studies both children and caregivers perspectives, 3 studies children's perspective • 2 studies focusing on young children
	Compromised infant feeding practices [295, 346-348, 352]	• 5 UK based studies • 4 caregivers' perspective, 1 both children and caregivers perspectives
Child's awareness of food insecurity	[6, 302, 304, 322, 349, 354, 355]	• 6 UK and 1 Spain based studies • 2 caregivers' perspective, 1 both children and caregivers perspectives, 3 children's perspective
Fragility	**Psychological fragility** [302, 304, 322, 349, 350, 352, 353, 355]	• 6 UK, 1 Greece and 1 Spain based studies • 2 caregivers' perspective, 3 both children and caregivers perspectives, 2 children's' perspective
	Social fragility [6, 295, 302, 346, 351-355]	• 7 UK, 1 Greece and 1 multi-country based studies • 2 caregivers' perspective, 5 both children and caregivers perspectives, 2 children's perspective
	Physical fragility [284, 302, 322, 349, 355]	• 3 UK, 1 Spain and 1 multi-country based studies • 1 caregivers' perspective, 2 both children and caregivers perspectives, 2 children's' perspective
Networks of care	[6, 287, 302, 322, 347, 350, 351]	• 5 UK and 1 multi-country based studies • 3 caregivers' perspective, 2 both children and caregivers perspectives, 1 children's perspective • 1 study focusing on young children

Table 9: Key themes and sub-themes emerging across included studies

*The multi-country study included the UK, Portugal and Norway

7.4 Theme one: Food and eating practices

The most frequent theme to emerge from the included studies related to how children's food and eating practices were shaped by limited household food budgets. Sub-themes related to the lack of autonomy caregivers have over food choices concerning their children's diets, how tight family food budgets shift prioritisation whilst making diet-related decisions, how these decisions become embedded in children's day-to-day food experiences, and how food insecurity does not discriminate by age, with infant feeding practices also compromised.

7.4.1 Diet

Translating studies across one another suggests that food insecurity impacts children's dietary variety, pattern, and overall quality, which influences their nutritional health and wellbeing (see table 9). It does so by affecting a caregiver's ability to provide regular, balanced meals that meet both the desires and nutritional needs of children. Across the studies it was evident that caregivers lacked autonomy over their children's diets, or as O'Connell and Brannen [302] say, they were unable to '*exercise choice'* over what food to buy and eat. Caregivers reported difficulty in consistently providing their children with meals *"It's bad! For me to even have food for my kids is going to be very difficult. You wonder how you are going to survive tomorrow"* [304]. Breakfast was often missing, or it was not nutritionally balanced. For example, one mother talks about her children eating left-over biscuits for breakfast saying "*It doesn't sound very good... but at least they've had something. I know children who go all the way to lunch without eating something"* [351]. Whilst a lone mother tells how her children rarely have breakfast and often cry for food [302]. Breakfast was more difficult for those families living in temporary accommodation who either purchased it en-route to school, or received it at school if they made it on time to receive it [295]. Consistently providing meals depended on food availability in the household, which for these families reflected the cyclical nature of income; the end of the month being hardest with most erratic dietary patterns. As one mother says *"Our eating is far more inconsistent with the way that we have to buy food now, so we'll maybe have a healthy week, but then we'll maybe have quite a poor nutrition week"* [284]. School holidays and weekends were also moments when families felt increasing pressure on family food budget, as were growing children who as they got older, increased pressures on the food budget "*When he was little we'd put two potatoes on his plate. Now we put three or four"* [302].

Caregivers' accounts described how food and eating practices within the household often prioritised preventing hunger rather than promoting health, despite parent's desires to feed their children more variety, fresh and organic produce [287, 292, 295, 351]. Due to externally

determined limitations constraining caregivers' ability to *'exercise choice'*, children were unable to be fussy, or express dislikes *"My kids will eat anything … anything cos I couldn't afford for them to be fussy"* [302], and missed out on nutritious foods "*You used to be able to buy lots of fruit but it's so expensive … I just get it when I can afford it… but we need to keep the house warm…"* [6]. Parents expressed concerns about their ability to provide nutritious foods, explaining that *"A typical diet is just a bellyful, it can't be something where you're gonna think healthy options, it's just something to fill you up really"* [287]. Here, food was viewed as having a function to, *'fill you up'*, rather than fulfil any culinary desires. This was expressed across the studies, with another mother sharing her difficulties in cooking even simple favourite recipes such as macaroni cheese for her daughter because *"…you need lots of cheese and cheese is a wee bit dear [expensive]"* [298]. Monotony of children's diets was overcome by caregivers' creativity whilst making similar dishes, keeping them interesting whilst staying within food budgets and their children's preferences. This was crucial to avoid food waste "*You don't have to do noodles the same way over and over, you know how to spice up you just get little things and put it together. Just make sure it's something that you think he'd enjoy…"* [287]. For undocumented migrant families, monotonous diets included relying on staple ingredients like bread for breakfast, lunch and often dinner [302]. Lacking physical and social space to prepare and eat food meant children living in temporary accommodation were supplementing an already nutrient poor diet of foods such as breakfast cereal, toast, noodles, instant pizza, biscuits, and crisps with more ready meals or takeaway meals [287, 295].

For the most part children's personal accounts of their nutritional health and wellbeing echoed caregivers' perspectives. There were many reports of the sufficiency of food being erratic due to money, notably at the end of the month [302, 354, 355]. From a hunger perspective, children's experiences in terms of whether and how often they experienced hunger varied. Children described how their caregivers sometimes struggled to provide enough food to satisfy their hunger, whilst expressing gratitude for what they did have "…*even if it's not that much food for me and [my brother] it's enough that we've actually had something…"* [302]. Harvey et al. [355] used the term *'problematic hunger'* to describe when hunger becomes a problem, for example when physiological hunger cannot be met with food prior to bedtime or school. Indeed, children described going to school and bed hungry, which for some occurred nearly every night or day. One child reports adopting unhealthful eating behaviours to overcome not being allowed to eat available food in the household "*Sometimes I have to sneak…Um, well, I sneak crisps…"* [355] for which she is shamed "*we ask for too much stuff 'cos we're hungry…, sometimes we just ask for too much stuff"* [355]. Whilst children were not experiencing *'problematic hunger'* all the time, many were consistently experiencing compromised diets.

Children described being unable to buy snacks "*It is difficult, difficult for my parents 'cos I've got, they an't [haven't] got the money to give me a pound in the morning for breakfast club and then me some money for – for 30p sometimes…"* [354] and being outpriced for fruit at the tuck shop "*…if your mum's skint [broke] and you don't have owt at home, you know, to take to school for fruit, then that's a bit mean you'll, you'll just be hungry"* [354]. Children often conflated healthy eating with fruit and vegetables with many reporting eating below the recommended 5-a-day. Taking a wider nutritional lens, children added depth to parents' descriptions of their diet. For undocumented migrant children they *"keep repeating the same food like over and over and over, just gets boring. ... We mostly eat rice; that's what we mostly eat"* with others reportedly filling up on cereal and tinned rice pudding [302]. For children in temporary accommodation, eating leftovers from dinner, or bread or noodles for breakfast was the norm [355].

Analysis of both caregiver and children's accounts assessed that food insecurity meant children were not able to receive *'treats'* at all or as often as other children [287, 295, 346, 351]. *'Treats'* were food items or meals that children would receive for a special celebratory occasion or as a reward. Lack of *'treats'* was mainly due to cost, but for those in temporary accommodation lack of kitchen space meant children missed out on common treats such as birthday cakes as caregivers were unable to bake. On the other hand, takeaway foods were eaten more frequently by many children. Takeaway foods were bought when no other food was in the house, or to participate in social circles with other peers [322, 355]. The consumption of this energy-dense takeaway food over time raises concern about children's nutritional health and wellbeing.

7.4.2 Compromised infant feeding practices

Caregivers described concern and worry about what they were feeding their infants. Indeed, infants in these studies (see table 9) were not afforded food security any more than others in the household. Hall and Perry [352] described how fragile the dimensions of families day to day lives are, with *'financial fragility'* the root cause of other fragilities. The cost of living was a constant pressure for families which, in turn, compromised infant feeding practices potentially promoting *'physical fragility'* amongst these children. One mother described being unable to afford infant formula, therefore, ignoring doctor's advice and giving cow's milk despite her concerns of the impact this could have on her daughter [352]. For families living in temporary accommodation, physical and social space were additional barriers to *'financial fragility'* for infant feeding practices [295]. For these mothers, lack of overnight kitchen access prohibited hygienic preparation and storage of infant formula, whilst for breast-feeding mothers lack of privacy and space increased difficultly of breast-feeding. Regressing a child's diet was evident

amongst those living in temporary accommodation. One mother reverted from cow's milk to infant formula for their two-year old as they could not keep fresh cow's milk warm in a flask and lacked kitchen access. Another mother reverted her two-year old to readymade jars for babies 4-6 months because the food on offer in the hotel was not agreeing with her son, and she felt she had limited choice [295]. These adaptive practices raise concern for the nutritional health and wellbeing of infants, potentially promoting *'physical fragility'*.

'Financial fragility' (discussed in theme three) also limited exposure to different foods. This regression of their diet could inhibit development of the child's preferences. Hayter et al. [346] described what drives low-income parent's food choices for their infants, and food waste was a concern when on a limited budget. Parents dealt with their concerns by either not giving the child food they'd previously refused or not offering foods they feared their child might not like, thereby, limiting chances of food waste "*I'll stop buying something if they spit it out once because we don't want the waste"* [346]. Some parents offered ready meals because "*at least then the children are going to eat it and I haven't wasted"* [346]. However, for parents in receipt of HSV, although they were frustrated with wastage, cost did not inhibit repeatedly offering their child foods [347]. Parents were proud that their children ate fruit and vegetables, which HSV enabled them to afford "*She's really good actually, because all fruit and vegetables she loves that more than if I put a plate of sausages and chips in front of her"* [347].

During early years, infants are reliant on their caregivers to make food and eating decisions. Parents were consciously aware that their eating behaviours were reflected by their children. Parental preferences sometimes influenced what the child was offered in a potentially unhealthful way "*I don't know about sprouts, I've never try her with sprouts, I don't like them myself"* [347], but other times this reflection prompted families to make positive health behaviour changes with some deciding to eat fewer processed snacks at night [346]. Further, migrant women showed how cultural practices shape infant feeding practices [348]. Some women described decreased duration of breastfeeding in the UK because of changed cultural practices, lack of privacy in crowded houses, and choosing bottle-feeding to facilitate work *"[It's] something cultural, if you have a baby it's not good for a woman to go out and the baby as well, so you have to keep inside and after 40 days end they have a party…[here] you have to go out"* [348].

7.5 Theme two: Child's awareness of food insecurity

There was limited evidence discussing whether caregivers thought their children were aware of food insecurity within the household, which was described in three studies [302, 304, 349]. The few accounts describing this had some inconsistent views. Some believed their children were

protected from food insecurity within the household, whilst others gave contradictory statements. For example, some believed that their child's lack of nutritional intake was not of great concern, "*They don't have the diet they should, but they are all terrain, like tanks, they are used to it"* despite their recruitment from a food bank for the study [349]. Others contradicted themselves by describing how their children have never gone without, followed by statements that they can't always feed them, *"Dad, what have you done for dinner?" And sometimes you have to tell them that there is nothing to eat"* [349]. Within the same study, parents described how their children adopted active roles in the protection of the household and were frustrated when they could not help "*She feels impotent because she cannot help. She has cried a lot"* [349]. Indeed, caregivers spoke of how living in poverty made their children mature sooner because of their felt responsibilities towards the family life. These inconsistencies highlight the need for research speaking directly with children about their awareness [302, 349].

Protected or not, children's own accounts demonstrated they were aware of food insecurity within the household, and the wider poverty context. Children described parental sacrifices, strategising, limited food supplies in the household, and were engaged in conversations about fairness around food pricing and marginalisation of those with lower income. Notably, children tended to focus on the immediate food environment, food quantity and types of food, survival rather than thriving, as one mother says *"…They are thinking about how they are surviving the next day"* [304, 355]. Some children moderated their needs when they realised there was less food in the house "…t*his month I won't ask for much"* [302]. Whilst another child speaks of how she sacrifices her own food intake to share with her mum *"I skip meals to share with my mum [inaudible] … for example, I skip my meal to wait for her to come back and at least we can have the same amount of food … [We] starve together through the whole day, so at least we will have had something to eat"* [302]. Through their own experience of deprivation young children were not only active participants within the family but also with their external network, forming their own networks of care as discussed in section 7.7.

7.6 Theme three: Fragility

The third theme is related to how food insecurity permeates children's nutritional health and wellbeing irrespective of parental attempts to protect their children's food and eating practices. This includes how financial insecurity (discussed in theme one) in children's day-to-day lives elicits fragilities around children's psychological, social, and physical health and wellbeing.

7.6.1 Psychological fragility

Children living in food insecure households were by virtue living within the wider context of poverty. This context of financial insecurity impacted on children's diet directly, but it also

impacted on children's nutritional health and wellbeing through more hidden pathways, highlighting how fragile some aspects of their everyday lives are. Hall and Perry [352] use the term *'fragilities'* to describe where children are vulnerable to poverties injustice. They propose that *'financial fragility'* is the root cause of other fragilities. One fragile dimension of food insecure children's lives was their emotional and psychological health. For children living in a household with ongoing economic problems, household tension is bound to be higher. Caregivers spoke of how when money was tight it was a constant source of stress and anxiety for them, which was evidently passed onto children who they described as experiencing sadness and anxiousness about the lack of food [304, 349, 352]. Children were aware of how *'financial fragility'* impacted household tensions *"When dad's work don't get his hours right or when it's pay day we all get tense in case there are any changes… We're on a tight income as it is and it gets quite stressful"* [352]. This was despite parental attempts to reduce emotional suffering "*If you are sad, that's what your children are going to be: sad. But at home I smile, I live laughing, and that's what they see -- Sometimes I try to create another environment at home, but I can't. Your life, your home, everything has been destroyed"* [349]. Children also internalised some of this household tension as feelings of burden, guilt and for some emotional numbness. For example, speaking of how school feeding initiatives help, one child referred to herself as burden on her family due to her need to be fed *"My mum now doesn't spend money for the school snack or for milk. I am now less of a burden on my parents…"* [353]. Whilst another child spoke of feeling guilty for eating because her mum hadn't, *"…it gets a bit to the point where we'll start feeling guilty because Mum hasn't had anything and we've had it."* although her mum tries to contradict this statement, saying *"I'm a warrior, though. I'm all right"* to protect her child from emotional suffering [302]. For other children, where hunger was the norm, loss of interest in food was apparent, perhaps indicating apathy or emotional numbness.

7.6.2 Social fragility

Another fragile dimension of food insecure children's lives are their social relationships. Across the studies, food was co-constructive of care through both nutrition and social relationships. Being unable to afford sufficient food and participate in socially accepted food and eating practices was a hidden exclusionary pathway impacting on children's nutritional health and wellbeing. Starting within the family, children growing up in temporary accommodation had socially diminished circumstances, without opportunities for commensality with their families. Children's family settings were not conducive to *'normalised'* dining. Children dined on the bed or on the floor, parents improvising with a cloth as a table *"There is no chair to sit on, you have to sit on your bed, eat on your bed, do you know what I mean like, your bed is the focal point of your room, it takes up the most space"* [295]. Social participation around food was

further limited as caregivers curtailed friends visiting children's houses due to parental fear of being unable to feed extra people [6, 302, 351].

Outside of the family environment exclusionary pathways continued, this time in front of peers, therefore creating a greater potential for stigma and shame. Children described a sense of exclusion whilst waiting outside the shop for friends saying it *"Feels like I'm left out of the fun that happens and stuff. Like it just makes me feel empty ... It makes me feel like what have I done like, what have I done?"* [302]. At school, children discussed exclusion from tuck shop foods because of the rising costs and the implications when they brought in non-permitted food items as a *result "... everyone just tells on me because my mum di'n't [did not] have any fruit money and so I asked to see if I could bring a couple of sherbet lemons in and I got one out, you know, to quickly have, and erm but everyone just kept telling on me"* [354].

Another potential exclusionary pathway in schools occurs during school lunchtime, although this starts within the household. Hall et al. [351] found that a tension is encountered when deciding between school or packed lunches with compromises made between children's wants and affordability. Children tended to prefer parent's home cooking or a packed lunch [302, 351, 355] and some parents restricted their food intake to provide a packed lunch. However, not all parents were able to, and for those children who did not eat their school meals, they went hungry [351, 355]. Children preferred packed lunches because they reduced stigma and isolation by peers and reduced the embarrassment from visibly having a lack of money at school. Children in the UK described how school meals meant missing out on eating lunch with friends who had brought in packed lunches because they were separated by meal type. Whilst for other children the limited choice of food within the free school limit of £2.20 per day could be humiliating if picking an option not suitable for the limit and being told so in front of peers. Caregivers however, tended to prefer children having school meals because of a lack of affordability of an extra meal and *"...because I don't know if I'll have dinner ..."* [302]. Indeed, some children also described preferring school meals. These children showed awareness of the benefit of FSM, *"It's just that my mum an't got enough money and with four boys"* [354] and expressed how they were a weekly treat because of affordability *"I mean, I can only have 'em once a week 'cos my mum can't afford it"* [354]. Further, Dalma et al. [353] finds that caregivers and children in Greece benefitted from FSM, which avoided stigma due to the universal provision of the meal. Caregivers were relieved of tension and compromise no longer having to afford a second meal or provide snacks for their children, whilst children were relieved of hunger *"Now with the Program I'm not hungry. I have something to eat"* [353]. For Somalian migrant children living in Norway FSM were not an option with packed lunch the norm. However, for

these children visibility of poverty arose if they brought in traditional cuisine which resulted in exclusionary responses by other children, as their food might be called *'smelly'* by others. Therefore, children preferred sandwiches which were deemed more expensive to make by parents than traditional Somalian food [302].

7.6.3 Physical fragility

Another dimension that food insecurity made fragile was children's physical health and wellbeing. Eating a sub-optimal diet, by caregivers' standards, had knock-on digestive impacts for children, as one mother explains *"My daughter's been quite constipated recently, which she's never been like that and that's no good for her"* [284]. As discussed in section 7.4.1 *'problematic hunger'* was a concern for children experiencing more severe food insecurity. Numerous accounts referred to the broad physiological sensations related to hunger. Children were able to describe the physiological sensations of hunger from as young as five years old saying things like, *"I feel sick", "your belly hurts and you feel sick", "my tummy's aching"* or *"belly hurts and feel like vomit"* [355]. For others it provoked an emotional reaction making them feel sad and annoyed, one child wanted the feeling to go away so goes to bed *"I feel hungry. I just want to sleep 'cos when you sleep…when I [go] to bed hungry and sleep, I'm not hungry"* and where hunger was the norm for one child who goes without food the whole day, there was a dismissal of the sensation, marking a loss of interest in food "*it doesn't bother me…as I said I never feel hungry"* [355]. However, few studies related these sensations directly to physical health and wellbeing impacts. Of those that did, one teenage girl was diagnosed with anaemia after showing physiological signs of *'problematic hunger'*. She described eating *"nothing, a sip of Lucozade"* for lunch and *"nothing"* for dinner whilst grabbing her stomach complaining "*I feel nauseous"* stating that this had been going on for about a year [322]. A boy living in an undocumented migrant family also suffered *'problematic hunger'* giving rise to extreme stomach pains "*I was so hungry and that, so … all of a sudden yeah it was like … it was like … it was like I got hit on my belly. … when I don't eat yeah it comes. Yeah, so I'm scared that it might come back. … it was like I got stabbed with a knife and it's still there"* [72]. It left him feeling lethargic and sleepy which impacted his ability to perform at school *"Sometimes you don't have enough energy; you cannot cope in the classroom so you have to like try and rest a bit. You just put your head on the table and you end up falling asleep in the classroom and you get in trouble for it"* [302]. Only one study discussed the weight status of children. This study was set in Spain with caregivers accessing food banks [349]. They reported that several children had overweight or obesity, whilst some children were facing growth retardation [349].

7.7 Theme four: Networks of care

Across the studies, various actors engaged in sacrificial or reciprocal practices to protect children from food insecurity and its impact on their eating and social practices around food. Within the family, parental sacrifice of food was common, most often by mothers who expressed that providing food for their children was part of good mothering (also see chapter six). Aware of constrained budgets, children also sacrificed by making fewer food demands or giving up their time to care for siblings whilst their parents worked extra shifts [302, 351]. Informal support networks engaged with these practices of care too. Grandparents helped directly by offering food and money for food, or indirectly, providing access to larger supermarkets where products are cheaper [351]. They also offered a place to introduce infants to a wider variety of foods (along with nurseries, toddler groups, and children's centres) which parents could then incorporate into meals at home without fear of refusal or waste. Further, one aunt had her nephew sleep and eat at her house because of the lack of space and money for food at his mum's, although the boy doesn't admit that he has experienced going without food at home [302]. Friends tended to share knowledge of cheap recipes between themselves that children might enjoy [351]. For migrant families, analysis gave a mixed picture; many engaged in these practices, but others avoided them in fear that people will spread news of their situation or because they then felt indebted to others, and did not want to be seen as begging [287, 302]. Figure 13 illustrates the protective network of care for children evident from included studies described here and in the next few paragraphs.

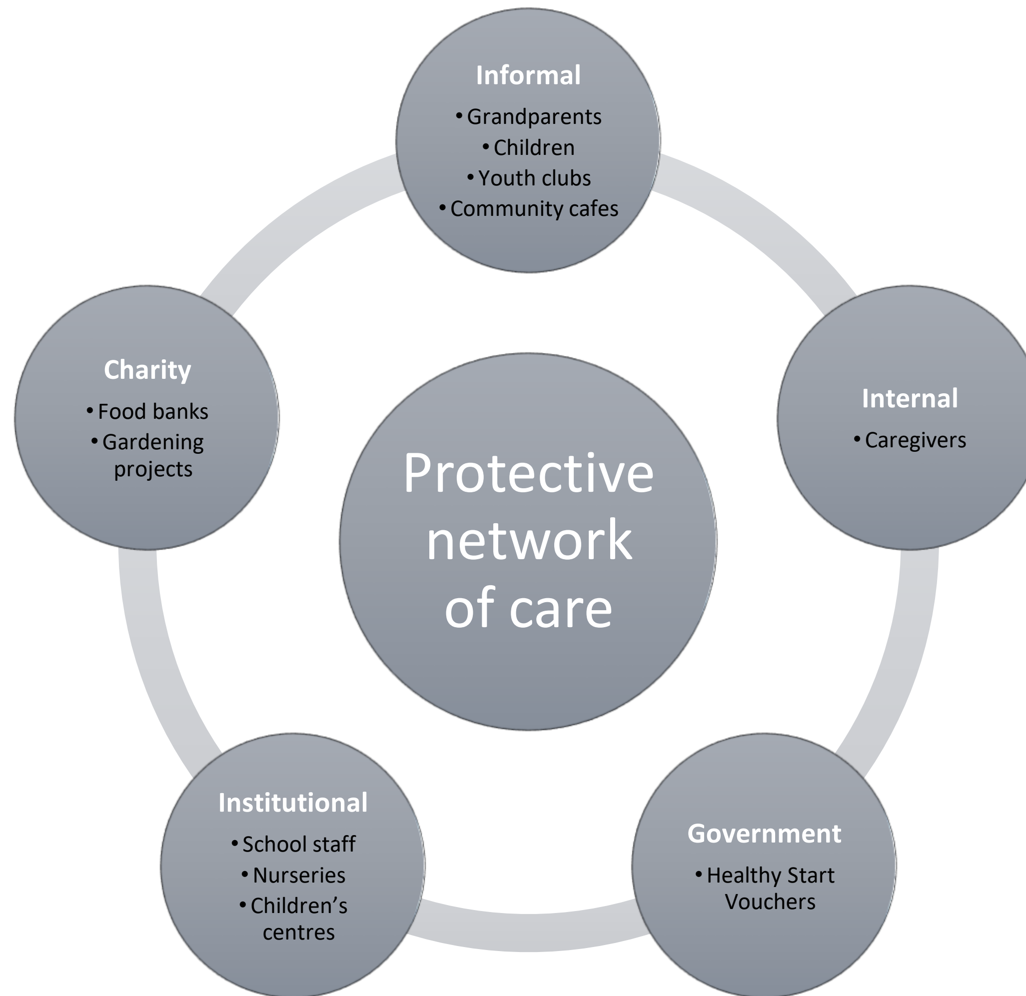

Figure 13: Illustration of the protective network of care safeguarding children from food insecurity

Children's network of care extended to external groups where food continued to be a vehicle through which care was shown, given, and received. Critical in this external network were schools. The role of schools went beyond delivering the service of FSM with kitchen staff helping hungry children access more food. For example, this parent remarked, *"If I ask the nuns to fortify their snacks, they go with them to the kitchen alone ... and sometimes they give something more. They give them soup at the afternoon and then ... I don't worry as much"* [302]. Whilst children themselves asked for extra food, *"He was hungry, yes ... he said that often he'd get there and the school staff, he'd ask the staff for bread, to get something"* [302]. Beyond school, youth workers were part of the network of care for young people, cooking and providing food initially from their own pockets, but later creating meals from food donated by local supermarkets [322]. Children themselves also practiced these reciprocity strategies. Laverty [322] uses the term *'materialities of* care' to describe how food was more than nutrition but was active and co-constructive of care through both nutrition and social relationships. Boys attending a youth centre brought in takeaway food drawing visibility and opening conversations for others to engage in, *"what have you got?", "what are you eating?"* [322]. Although these boys had little spending power, when they did have money, bringing in food was a way of being seen. It was also a moment to share food with others, in recognition that *"sharing is caring lad"* with boys excluded from the group if they did not participate in this reciprocity strategy [322]. Amongst the girls, however, they did not like sharing food, reporting concerns about the quality of the food shared (mainly hot food takeaways) and its impact on their weight, with one girl stating she does not want a *"fat belly"*. The girls were also encouraged to provide care by cooking for the boys with female youth workers, which they often refused to do.

Other services extending care to children through food were food banks who provided families with food parcels and the Healthy Start scheme that helped parents increase infants' dietary quality [302, 347, 350]. Some mothers suggested a need for *"...more community cafes, ones that are large and welcoming enough for families"* [350] and gardening projects as spaces for families to attend that could supplement their children's diets and improve commensality [287].

7.8 Discussion

This review provides a progressive storyline of the family unit's perspective of children's experiences of food insecurity and the ways in which it: prevents caregivers from meeting children's nutritional needs and desires; is embedded into children's everyday food and eating practices; (in)visibly impacts children's psychological, social and physical health and wellbeing; and how children are active in reciprocal practices of care both within and outside of the family unit. The discussion that follows considers the analysis in relation to the original aim of the review and the broader literature.

Previous literature [258, 356, 357] shows that children are aware of their disadvantage in relation to others and actively engaged in managing and meditating the impacts of poverty beyond themselves. This meta ethnography builds on this evidence showing that children are active in managing food and eating practices both within and outside of the household. Most children actively asked for less food at home, helped parents whilst they worked extra shifts by acting as carers for siblings, split their meals with caregivers and siblings or asked for more food in places outside the home to manage and mediate the impacts of food insecurity. In this review, children as young as five years old were able to describe their *'problematic hunger'* whilst children aged 7 years were able to communicate the contextual household's situation of a lack of food. However, although some children knew their caregivers had little money and employed practices to ensure they had enough to eat, poverty as a concept was abstract. For example, they described absolute poverty with references to that seen in under-developed countries. Further, a temporal dimension was evident in relation to children's awareness of food insecurity. Children described concerns about the immediate food environment rather than future-bound worries. This resonates with previous work by Wills et al. [358] who used Bourdieu's concept of habitus to explore how class becomes embodied in food and eating practices. Habitus is '*an overarching system for classifying practices behind the conditions of all lifestyles*' which lends itself useful to analysing food and eating practices [358]. Wills et al. [358] found that working class parents were more concerned with food and eating in the present versus future-oriented concerns of middle-class parents. This played out as family ideals, with present orientation functioning as figuring out what needed to be done today. These parental practices and beliefs can be reproduced by children and transmitted down generations which has implications for considering inter-generational poverty and insecurity.

Over the past 25 years children's research has grown, with children recognised as *'social agents'* [359]. Research from the USA shows that children were aware of food insecurity describing worry, sadness or anger as well as physical symptoms relating to lack of sufficient

food [360]. Despite lack of familial conversation on the topic of food insecurity, some children took responsibility for managing family resources whilst others were protected by being unaware of the issue [360]. This review finds that within the European context, children are competent to make sense of the adult world [359], reflexively acting when seeing their parents go without food or hearing them commenting about insufficiencies in the household. In this way, children do contribute and make a difference to the food and eating practices within the household. This review found that studies including children's voices tended to focus on young people of secondary school age (11-16 years). Potential reasons for this could be because young people have more advanced abilities to articulate their experiences than younger children, they are at a stage of rapid personal and social growth that can be enacted through food and eating practices and they are able to take on more responsibility in the family [302, 358]. However, further studies with younger children would be useful to understand how food insecurity impacts nutritional health and wellbeing from an early age.

Children's own voices are also essential in health research as a conflicting picture developed when caregivers gave their perspective of their children's experience of food insecurity. Some caregivers dismissed that the poor nutritional intake of their children was problematic because their children were *"used to it"* whilst others contradicted themselves saying their children had never gone without, followed by statements telling their children they had nothing to eat. The range of responses perhaps reflects parental anxieties that consequences will arise from sharing their experience with household food insecurity, for example, that social services might get involved. As Dowler articulated in an interview, food insecurity "*…is an issue of private shame […] people keep to themselves. And it is an issue of private suffering"* [334]. In the same light, some children dismissed food insecurity as an issue stating that hunger doesn't bother them, they never feel hungry and that they are always fed despite parental accounts detailing otherwise. This could signify that those children have recognised this is not a public issue, thus protecting their family from stigma and shame. This finding supports the need for further research including the whole family's perspective.

As section 3.7.5 explained nutrition during the first 1001 days of life is critical as it influences susceptibility to non-communicable diseases in later life. The first 1001 days is a time when infants are most at risk of the nutritional health and wellbeing impacts of food insecurity. This review shows that food insecurity does not discriminate by age, with infants' food practices also compromised. This synthesis highlights a lack of evidence specifically in the first 1001 days, with only UK based studies included. Those studies showed how food insecurity means babies and infants are receiving inadequate and unbalanced diets. Caregivers did not have full

autonomy over their infants' feeding practices. Being food insecure meant some babies progressed too quickly to drinking cow's milk instead of infant formula or breastmilk, whilst older infants regressed to drinking infant formula or moved back to eating jars of baby food. In some families where food waste was a concern, infants were either not re-offered foods they had previously refused or were not offered a variety of foods at all. Offering infants cow's milk prior to beginning complementary feeding can impact their growth and development as it does not contain sufficient iron content to cover babies needs [361]. Longitudinal studies show how either nutrient poor or nutrient rich food preferences track from infancy into childhood and adolescence [362] and that infants of two to three years are most likely to accept new foods, with dietary patterns and food preferences remaining quite stable after the age of three to four years [362, 363]. Indeed, infants start to develop flavour preferences whilst in the womb, tasting their mother's amniotic fluid [363]. Studies have shown that a mother's diet in the third trimester of pregnancy or whilst breastfeeding helps the infant transition to solid foods, accepting foods eaten by their mothers, with infants who are breastfed being less picky and more willing to try new foods during childhood [364, 365]. One explanation for this is that the breastmilk provides them with a sensory experiences of food flavours, starting the learning process earlier on in infancy, prior to complementary feeding starting [363]. This emphasises the importance of providing support to food insecure families to enable them to be able to repeatedly offer a variety of healthy foods during infancy as these feeding practices are important determinants of the quality of adult diets. It also highlights the need for more research amongst the first 1001 days.

Further, in this review, migrant women noted how cultural practices shaped breastfeeding practices. They described reduced breastfeeding since moving to the UK because of work, family, and societal pressures which reduce the amount of rest available to them and time to dedicate to breastfeeding. One approach to mitigate this would be to improve the adequacy of universal maternity cover to ensure that children's and caregivers' nutritional health and wellbeing is prioritised. In the UK, the Healthy Start scheme was found to meditate the impact of food insecurity upon infants. Healthy Start vouchers are a cash-benefit accessible for families on low-income with children 0-4 years for purchasing fruit, vegetables, and cow's milk. In this review, the scheme provided a nutritional safety net enabling parents to repeatedly offer their children foods given that they had financial support. Other participants in this review accessed food banks. Food banks are a prominent feature within Europe (see section 3.3.1). Some food banks accept donations for infant formula, providing this to families with babies in an attempt to support them. Whilst admirable, this can be a risky practice potentially unintentionally creating harm [236, 366]. Food banks are not places to make decisions about infant feeding

given the lack of healthcare professionals present to help caregivers make informed decisions about infant formula. There may also be an unintended consequence reducing the prevalence of breastfeeding, the healthiest form of infant feeding [236]. Since 2014, the UN have shared their concerns providing recommendations which avoids food banks providing infant formula to families with babies [366].

This review shows that food insecurity is embedded in children's day-to-day lives, a similar finding to reviews from pre-2008 showing how poverty and low-income impact children's everyday lives [258, 356, 357]. However, unlike those reviews which focused on the economic, social, and relational constraints, this review focused on food. Food insecurity affected children's dietary quality and quantity. Their diets were described as meagre ('*problematic hunger*' experienced by some), monotonous, and less nutritionally dense with hot food takeaways and ready meals commonplace. Although this review had limited accounts linking diet quality and quantity with weight status, it identified how food insecurity can lead to overconsumption of energy dense and nutritionally poor foods. This happened as caregivers and children had limited options other than to opt for foods necessary to keep full rather than focusing on nutrient-dense, balanced meals. As said by a youth worker *"what's the point in giving soup to someone starving?"* [322]. For children living in temporary accommodation, the lack of access to cooking facilities and storage facilities heightened the tendency to substitute healthy food and lean on consumption of cheap, high-energy, high-processed foods. With little price variation compared to nutritious foods these items make planning on a tight budget easier. Also, their potentially increased availability in areas where food insecurity is higher partly explains why food insecure children are at increased risk of growing up to have obesity as adults (which carries with it increased risk of co-morbidities) [367]. Dietary behaviours learnt through childhood will make it harder for children to engage in healthy behaviours necessary for weight loss and maintenance [368]. Indeed, a girl in this review was shamed by her parents for being hungry and responded by secretly eating food in private. Whilst young female youth centre attendees did not partake in networks of care using food or eat in public and were vigilant about the impact of hot food takeaways on their weight. These behavioural responses raise concerns about the development of eating disorders given that common signs and symptoms of eating disorders include feelings of shame and stigma around food, preoccupation with food, weight and body image, and eating in secrecy [369]. A review of emerging evidence of food insecurity and eating disorders found that, among adults, food insecurity is cross-sectionally associated with higher levels of eating disorders; however, the same robust relationship was not found amongst adolescents. This could be because fewer studies have been conducted in adolescents to date [369].

Prolonged consumption of the dietary quality and quantity seen in this review will have other nutritional health and wellbeing impacts. The inability to afford ingredients like fruit and vegetables, meat, and cheese along with the monotony of eating staple ingredients increases the risk of deficiency of micronutrients leading to illnesses such as scurvy caused by a lack of vitamin C. Poverty and health are inextricably linked; malnutrition adversely impacts physiological and mental health capacities, reducing productivity, in turn making individuals more susceptible to poverty [370]. This review builds on research from pre-2008 by showing how lack of food specifically impacted children's everyday experiences of disadvantage [356, 357, 371]. In this review, children who went to school hungry described being unable to perform at school, lacking concentration and energy. Food insecurity therefore makes it harder for children to achieve their grades, in turn making it harder to secure employment and a high-earning wage, making it harder to break the cycle of poverty [370]. Food banks attempt to reduce the number of meals skipped by children by providing emergency food parcels to families, which despite being nutritionally inadequate help mitigate everyday adversity faced by children [372]. However, the underlying issue is that children's human right to food is not being enacted by governments across Europe, and wider.

Free school meal offerings varied across countries included in this review. Of those offering free or subsidised lunches, acceptance amongst children was mixed, whilst caregivers reported favorably of them, expressing how they reduced pressure on the family food budget. Children spend a considerable amount of time at school. They consume at least one meal per day there making schools an ideal setting to promote consumption of healthy food early in life. There is a potential for universal FSM to reduce the socioeconomic differences in diet and health outcomes amongst children. In the UK, a study examined the universal infant free school meals programme which offers children in the first three years of school a free lunch [373]. Positively, it found that the greatest change on diet and nutritional intakes occurred in low-income children. However, it did not observe a change in consumption of fruit and vegetables, or sugar-sweetened beverages, or dietary intake of sugar across all children, suggesting room for improvement in the quality of FSM [373]. A non-randomised study in Norway provided FSM to children aged 10-12 years for a year and found an increase in children's intake of healthy foods, especially amongst low-income children [374]. These studies show that advocating for universal FSM could help reduce health inequalities associated with FSM amongst children, although as this review suggests there is a need to improve children's experiences with FSM.

This review is contextualized by a decade of austerity policies in which more deprived areas have unequally been affected (section 2.6) and households with children have become

increasingly vulnerable to food insecurity (section 3.3). More recently a pandemic and now a cost of living crisis mean that household budgets are further squeezed, with food the flexible part of the budget [375]. Synthesis of included studies revealed how within this context, food insecurity impacts caregiver's ability to *'exercise choice'* over their children's food and eating practices due to lack of income, physical and social space. Children's food and eating practices thus prioritised preventing hunger rather than promoting health. Wills et al. [358] exemplify how examining routinely eaten foods can highlight the social, cultural, and economic capital families have. In this review, children's cultural capital through food was limited as they were unable to experience cooking and tasting of more exotic forms of cuisine both at home and in restaurants. Their social capital is also minimised by lack of commensality, with food kept an internal event within the family, within the home. Indeed, food was predominantly a matter of fuel rather than enjoyment. This was evident through descriptions of limited opportunities for children to explore their dietary preferences, through parents saying how *"A typical diet is just a bellyful…"* [287] and through parents limited purchasing power to try different foods, or cook those foods in different ways or try different flavour combinations. Instead, a monotonous diet was standard for children, based on staples or less nutritionally dense meals such as hot food takeaways and ready meals. Additionally, eating out at restaurants and trying different cuisines was limited with meals based on food in cupboards, and a success if *"…they've had something"* [287].

Studies revealed the deep vulnerabilities food insecurity exposes within children's lives. Within the home setting, tensions were high placing an emotional toll on all children. They experienced this as stress, anxiety, depression, sadness, and annoyance. Indeed, the same child often expressed multiple emotions within the same study, suggesting that psychological distress could worsen dependent on severity [376]. Caregivers attempted to protect their children and reduce their emotional suffering. However, children's awareness of their relative scarcity along with household tension meant instead that some children internalised feelings of guilt, lost interest in food, and became emotionally numb. Whilst for other children, their worry meant they reduced their meal size to share with their caregivers or siblings, they asked for food at school, or engaged in networks of care. This shows how children's adaptive coping strategies for food insecurity differ. Either they engaged with the stressful event in what Evans et al. [377] call engagement coping, or they disengaged from the stressful event, called disengaging coping [377]. The former means that children regulated their emotions to cope with the stressor in turn increasing appreciation for their caregivers [377]. The latter means that children withdraw or avoid the stressor and is associated with poorer mental health and depression [377]. This finding is similar to what Attree [356] found, that children either resigned to living in poverty, making

do with what resources they had, or they became active agents in coping with poverty, attempting to shield their parents or family. Either approach potentially limits children's horizons.

The psychological impacts from food insecurity affected children's social interactions and relationships. This supports previous reviews showing how poverty more broadly impacts children's everyday practices [356, 357, 371]. Ridge's review [371] included studies until 2008 and similarly found that through pathways of social exclusion, or insecure social integration, poverty can have a damaging effect on school careers and children's everyday lives at school. This review supports evidence from pre-2008, as it shows how disadvantage restricted children's everyday food practices, rendering them aware of their difference compared with more affluent peers. The inability to partake in packed lunches, buying foods from the shop or tuck shop, eating with friends at school, inviting friends home or consuming desired foods were all examples of how social exclusion occurred through food and eating practices. Humans are social creatures wanting to form relationships, be part of a social groups and participate in activities with others. Building social networks increases social connections and security thus building a sense of wellbeing and belonging [378]. However, being unable to fully participate in these everyday food practices limited children's opportunity for creating social capital. As Ridge ([371] pg. 76) says, insecurity and uncertainty *'can penetrate deep into social and interpersonal relationships, sapping self-esteem and undermining children's confidence'*.

The concept of embodiment [337] (also referred to section 6.6) is useful here to recognise how the food insecure environment leaves a mark on the health of children. Drawing on the previous paragraphs in this discussion, this review shows that children's interaction with a food insecure environment can lead to altered bodily characteristics through both conscious and unconscious processes. Conscious processes refer to when someone lacks agency over their decisions [337]. In this review, some children took responsibility for managing food resources within and outside of the home. However, children still lacked choice over the foods they ate and their ability to access sufficient healthy foods, this was particularly evident in the school setting. The insecure food environment led to internalised feelings of guilt and shame of eating, feeling excluded from normal social interactions and, in some cases, feeling numb. Unconscious processes of embodying food insecurity relate to the physiological effects resulting from the consumption of inappropriate foods for dietary needs, or the inability to maintain consistent dietary patterns [337]. This review shows that this may begin in the first 1001 days of life for food insecure babies and infants, as mothers described lacking autonomy to feed their children appropriate foods. This continues through childhood into adolescence with children and

caregivers describing diets of poor quality. The inability for children to access sufficient healthy food thus has physiological impacts, with some experiencing hunger, lethargy, sleepiness and poor concentration.

From the synthesis, caregivers and children described networks of care that attempted to reduce the impact of food insecurity for children. Like Attree's reviews [258, 356] networks included those within the family, outside the family and children's own resourcefulness. However, arguably, since 2008 the dependency on external networks has strengthened as austerity policies stripped away social services including youth centres, Sure Start centres, (section 2.6) alongside increasing costs of childcare. The UK has one of the highest childcare costs for amongst OECD countries [379]. Moreover, in this review that focused on food, food was more than nutrition, but a vehicle for giving and receiving care for the body through social relationships [380]. Using Tronto's [381] four central practices of care we can begin to explore how informal support networks of care come together for children. As Tronto [381] says, care arises from the fact that, as humans, we are not always able to take of ourselves. Caregivers in this review were not always able to take care of their children, and children, given their age, were not able to take full care of themselves either. For this reason, other people step into a caring role. Tronto [381] suggests four elements to care. They are caring about (noticing the need to care), taking care of (taking responsibility of care), caregiving (doing the actual work needed to care), and care-receiving (the response to care). From these, four ethical elements of care arise: attentiveness, responsibility, competence, and responsiveness. Throughout the review, it was evident that different groups of people acted in different ways to show care through food. Children were responsive to the care provided but also active in the role of caring about, taking care of, and caregiving. Within their own social groups, with the little money they had, boys exercised an ethics of care approach by sharing food amongst themselves. Caregivers exercised three of the four elements of care being attentive to the need for care, taking responsibility for caring and doing the work to care for their children. Youth centres were also attentive to the need for care, recognising those children in attendance who were experiencing food insecurity, and doing the work to care for their children by providing money to buy food, or cooking meals from arranged donations of food. Schools similarly recognised children in need, offering extra food to those children in addition to FSM. Informal support from grandparents, community cafes, food banks, gardening projects, children's centres, nurseries, and toddler groups also showed ways of caregiving. Either directly providing food to families or indirectly helping them enabling access more food. This myriad of support comes together to help families with children cope with economic adversity.

7.8.1 Conclusion

This review has explored the ways in which food insecurity impacts children's nutritional health and wellbeing from both caregivers' and children's own perspectives. This review builds on previous reviews, by focussing on using food as a lens to explore children's lived experiences of disadvantage. It shows that children are aware of their family's limited resources and are active in trying to help their families. It shows how food insecurity is an adverse physical, psychological, and social experience for children. It also highlights gaps in our knowledge about how food insecurity impacts children's nutritional health and wellbeing. There is a need for more research with caregivers of infants up to age two as the studies included had a secondary focus on food insecurity with this group included within a wider sample. This meant that the review was unable to fully explore the impact of food insecurity on infant feeding beliefs, styles, and practices. Few studies included children from minoritised ethnic communities, while gender differences in experiences, although touched upon in one study, are not explored in depth. Evidence from two studies suggests that living in temporary accommodation increases severity of food insecurity and its impact on children's food and eating practices, but this area is under-researched. It is still not clear from what age children are aware of household food insecurity as children in this review were mostly of secondary school age (11 to 16 years). Further, how poverty is experienced in different countries or neighbourhoods (i.e., rural) are not clear as the majority of included studies were from the UK and set in cities or urban areas. This review suggests that there is further scope for research with minoritised ethnic communities, with children living in temporary accommodation, with younger children, with caregivers of children in the first 1001 days of life, with children living in different European countries, and those from rural areas.

CHAPTER EIGHT

8 Chapter eight - Qualitative interviewing methodology and methods

8.1 Chapter overview

In this chapter I outline the philosophical, methodological, and ethical aspects for the empirical research within this thesis. A qualitative longitudinal approach was used with data generated using serial interviews. I de-construct the approach taken to answer the research question, justifying my rationale for choosing the methods and their practical execution, situated within the context of my epistemological standpoint. I begin this chapter by re-addressing the research aim and objectives before exploring the question from a methodological standpoint, then detailing the research process.

8.2 Study aims and objectives

The empirical research presented in this thesis used serial interviews to explore frontline workers perceptions and experiences of the nature of food insecurity within a changing public policy landscape. The objectives were:

- To recruit frontline workers of the emergency food aid system in the North East region of England
- To conduct remote serial interviews with frontline workers during a pandemic
- To analyse and present qualitative data using thematic analysis (TA) and identify themes

8.3 The philosophical approach

Research may be described as attempting to seek answers systematically and creatively to the questions it poses, trying to establish the *'truth'* whilst reaching new conclusions. Here, an assumption is made that the *'truth'* is out there waiting to be known [382]. Yet, more is underpinning research than this. Prior to seeking answers, researchers reflect on philosophical questions such as *'what is the truth or the nature of reality?*' and *'how do we get to the truth or is this reality knowable?'* before choosing an appropriate approach to discover knowledge i.e., *'how can we know it?'* [382]. The former questions relate to epistemological and ontological concerns whilst the latter relates to the methodological toolkit used to explore the *'truth'* or *'reality'* according to what we think is real [382]. Thus, there are different approaches to understanding the same phenomenon.

Identifying an epistemological and ontological position is arguably the first step in the research process which in turn directs the methodology selected. It is this research paradigm that should expose the types of research questions and aims answerable, not the other way around [383]. Different philosophical considerations underpin research. At one end of the spectrum are positivist, post-positivist, or scientific realism epistemological and ontological positions [384].

Deriving from this position are ontological views that reality is awaiting discovery through investigation. For example, positivism recognises only that which can be scientifically verified [385] and its search for the truth relies on falsifiability of a hypothesis; Popper [386] argues that any hypothesis that cannot be disproved is not scientific. From this, its epistemologies follow a deductive approach using existing theory to create hypotheses that are empirical, generalisable, specific, and testable [387]. Testing hypotheses occurs in a controlled and structured process with an agreed set of conventions, called the scientific method [387]. Under this view, positivists then questioned whether or not the social sciences are in fact *'scientific'* as it cannot be discretely measured [388, 389]. For some, the study of human phenomena should reflect those of the physical sciences, as *'positive'* science was to be undertaken [387]. Others were in agreement with suggestions that the methods of the physical science needed to be applied to the *'moral sciences'* [390]. This sums up the positivist view that the scientific process can be applied in the social sciences, uncovering laws governing society and human relationships. For this research a positivist position would reduce the participant's experience to quantification, inhibit me as a researcher to engage in the research process and deny the complex interaction of the social, political, and economic context within which food insecurity sits. The oppositional, relativist ontology, claims there are multiple realities [391]. A relativist's position moves beyond the position that multiple people experience an external world differently, but rather, people's worlds are different [391]. Thus, its epistemological position lends itself to research understanding the subjective experiences of reality and multiple truths within a particular context, denying the existence of any one *'single truth'* [391]. This position wouldn't acknowledge the material reality that participants experienced as a result a changing landscape.

Neither of the afore-mentioned oppositional paradigms suited the aims of this research, hence, a middle-ground was found. This comprised of a realist ontology and subjectivist epistemology that formed the constructionist paradigm of this research. Realists view that reality is independent of human minds irrespective of its comprehensibility [391]. A contemporary form of realism is critical realism. Critical realism, like positivism, views that there is an objective world that exists independent of individuals' language, personal perceptions and imaginations [392]. However, unlike positivism's simple dichotomy, critical realism also recognises that the world consists of subjective interpretations, thereby influencing how the world is perceived and experienced [392]. Through this double recognition, critical realism doesn't limit our sense of what can be real to just what we can observe like positivism does. For critical realists human knowledge only captures a small part of a deeper reality. Critical realism enables the exploration of the mechanics, relations, powers, rules and resources [392] which are linked to political, social, and economic underpinnings. Wihelm Dilthey explained this; individuals need to be

understood in the context of their cultural and social life, as they do not live in isolation, the context of the events matters as the world is not static [389]. Therefore, the purpose of research is to identify phenomena and develop agreement regarding the description of the whole from glimpses or partial fragments [391].

Subjectivism is the belief that knowledge is *'always filtered through the lenses of language, gender, social class, race, and ethnicity'* ([393] pg.21). Whilst not dismissing that an external reality exists it recognises knowledge as value-laden occurring as *'observations are influenced by the observer and the observer is influenced by the observed'* ([391] pg.3). Combined, subjectivism (interpretivist) and critical realism (post-positivist) forms the constructionist paradigm. In this paradigm the researcher is recognised as a co-creator of the findings. It is recognised that the research is not entirely objective; that the researcher's observations and interpretation is shaped by societal influences [391]. Yet, they do not claim to discover the *'truth'* but observe and construct knowledge contextualised by society [391].

8.4 Qualitative methodology

Qualitative research fits the underpinning research paradigm as it is an interpretive, naturalistic approach to answering questions. Qualitative research is concerned with lived experience [393]. Data is generated rather than measured and collected due to the interactive, and therefore inseparable, relationship between researcher and participant. Its aim is to makes sense of a *'bricolage'* of experiences and perspectives within the specific context that they were co-generated, staying grounded in the data [393, 394]. This set of methodologies seek to generate rich, detailed, data rather than seek high volumes and quantification or generalisability. Analysis usually seeks to find meaning in the data and explore patterns within and across the data.

Chosen for this research to explore *'reality'* was Qualitative Longitudinal Research (QLR) methodology. The purpose for this methodology was to better capture and understand the experiences of frontline workers as they worked to support food insecure women and children access food within a rapidly changing socio-economic landscape. QLR explores dynamic processes in participant's lives as they unfold through in-depth, qualitative lens. This deeper dive into participants' experiences across several interactions with them, gives the researcher insight into *"how participants narrate, understand, and shape their unfolding experiences and the evolving world of which they are part"* ([395] pg.2). Time is a key feature of QLR, as *"it is through time that we begin to grasp the nature of social change and continuity, the mechanisms through which processes unfold, and the ways in which structural forces shape the lives of*

individuals and groups" ([395] pg.2). Time is also an opportunity to process and reflect prior to repeat interactions with participants where topics are revisited.

8.5 Rationale for interviews

I decided interviews, more specifically, serial interviews, were the most appropriate method for addressing the aim of the research. Not only did they fit the research paradigm, but interviews are the bedrock of qualitative research, a method widely used within the social sciences [396]. Interviews are a flexible tool facilitating a relatively natural interaction with participants [382]. Interviews vary in their nature; broadly speaking they are structured, semi-structured or un-structured. This adaptability as a data collection method means interviews can align with a variety of theoretical frameworks, helping to answer different types of research questions. Commonplace in qualitative research are un-structured or semi-structured interviews.

Whilst there were a range of approaches to qualitative interviewing that could be undertaken, semi-structured interviews were the chosen method of data generation for this research. This aligned with my constructivist stance and provided a structured conversation with a purpose directed by an interview guide. Informing this interview guide was the evidence base and conversations with supervisors. Listed in the interview guide were the topics with one guiding question per topic alongside prompts. Most importantly, this interview guide enabled me to cover topics whilst still allowing scope to yield varied data based on individual experience that I hadn't anticipated. After each interview I reviewed the guide, adapting it in respect of new matters that stimulated further discussion with future participants. For follow-up interviews I personalised interview guides based on initial interview transcripts and notes. Follow-up interviews enabled me to sense-check my interpretation of certain parts of the initial interview, discuss relevant topics in greater depth and explore changes in frontline workers experiences and perceptions since the previous interview.

Although interviews are described as a *'gold standard'* method in qualitative research [397] there are still potential limitations or challenges to using the method [398]. The presence of a researcher in the interview by nature alters the conversational dynamics from a natural one to where the participant might attempt to demonstrate their competence. Face-to-face interactions might enhance constraints on the dynamic compared to telephone or online conversations or vice versa (discussed in section 8.12). In this research, no in-person interviews took place due to an ongoing COVID-19 pandemic. A benefit of using QLR methodology and serial interviews as a method is that it can help researchers understand complex situations. In this research it enabled me to see how different circumstances (the changing socio-economic context) brought to light different aspects of frontline worker's experiences of the nature of food insecurity [399,

400]. Moreover, rather than providing a snapshot, data generated using serial interviews is like a movie of unfolding life events. They also allowed me to build rapport with participants increasing the chances of them sharing their personal views and private accounts on the topic [400]. Retaining participants is a challenge with this approach, discussed in section 8.11.

8.6 Analytical framework

Thematic analysis (TA) was the method of analysis used in this research, specifically reflexive TA [401]. I present more detailed examples of the process in a later section 8.15. Some research aims to generate new theory; this research instead, intended to link findings to relevant concepts and theories in existing literature. TA was an appropriate choice because of its theoretical freedom [402]. It takes a flexible approach to analysis that is not married to a specific paradigm and is well-suited to analysis that remains close to the data (participant's experiences). TA is an approach that can produce high-level contextualised knowledge through its ability to both capture *'reality'* and begin *to 'unpick'* the surface of *'reality'*, as well as link data to concepts and theories [402]. A challenge with using TA for this research is that the analyses occur *across* the dataset. This research used QLR, therefore, data generated at different time points. This required analysis both *within* cases and *across* the dataset to capture change at an individual and macro-level [403].

According to Braun and Clarke, TA *"is a method for identifying, analysing and reporting patterns (themes) within data"* ([402] pg.79). The output from reflexive TA are themes. Rather than summaries of meaning or quantifiable prevalence of data items, themes are creative and interpretive stories with a central organising or core concept which emphasises a uniting idea. This uniting idea is a shared meaning across the dataset [401]. Themes are *actively* created by researchers through the process of coding, requiring reflexive engagement with the data and the analytical process. Themes are captured at different levels of interpretation. At semantic level themes capture explicit or surface level meaning across the data. At latent level themes move beyond surface level to capture underlying ideas, assumptions, and conceptualisations. The level may depend on how the data are coded. Coding can be either inductive (data driven) or deductive (theory driven) or a combination of both. It should be consistent and systematic across the dataset. Contradictions are bound to arise within the dataset, but it is not the role of the researcher to *"smooth out or ignore the tensions and inconsistencies within and across data items"* ([402] pg.89). The role of the researcher is to be reflexive throughout the process to navigate data analysis and selection of themes [401].

8.7 Positionality

Aligning with the chosen research paradigm, I didn't view myself as removed from the research process. Hence, here I reflect on my background, views and personal characteristics that will have influenced the research process. As a white woman in her late twenties, I was younger than of all my participants, although none of the participants implicated age and knowledge in our conversations. My South London accent made it obvious that I was not from the local area, although not so obvious is my dual citizenship with France. Interaction with participants was for research purposes, thus highlighting my pursuit with higher level education. However, some participants also had education to masters' level and most had 20+ years of experience of working in the health field. Participants saw me as a middle-class woman, with one participant referring to myself and themselves as "*... relatively wealthy compared to these people,"* and saying *"...you know like yourself and me we might go to family or friends…"* in relation to having access to an informal support network who'd help with money if needed. What I didn't share, and perhaps could have done was that, although I've not personally experienced living in poverty, I've been exposed to aspects of the daily reality of it through volunteering at food banks both in London and the local community, as well as with homeless charities. Further, my mother's childhood of growing up in poverty in France in the 1950s as one of fourteen children, has exposed me to the realities of the shame, stigma and malnutrition resulting from lack of money and was perhaps an underlying motivation for this kind of research.

8.8 Ethics and reflexivity

Ethical considerations influence many decisions throughout the research process moving beyond the ethical board approval process. As a researcher I wanted to engage in the most respectful and ethical way, the WHO emphasising that ethical standards are in place to protect the dignity, rights and welfare of research participants [404]. The key areas of ethical consideration are respect for all persons (treating everybody as autonomous beings), beneficence (to not only minimise harm, but also maximise beneficial outcomes of research), consent and privacy. Additionally, the researcher's own safety and wellbeing needs consideration. Ethical approval was granted by Newcastle's University's Research ethics committee prior to commencing research, 29th June 2020 (Ref 4043/2020 in appendix J).

The ontological position of critical realism in this research acknowledges the researchers lack of neutrality due to historical backgrounds and emphasises the importance of reflexivity, on the part of the researcher [405]. Reflexivity can be defined as the *'self-conscious analytical scrutiny of the self as researcher'* ([406] pg. 82) because the researcher turns the *'critical gaze'* inwards acknowledging and disclosing themselves in the research based on social background,

assumptions, and behaviours [407, 408]. Reflexivity informs positionality as it continually asks the researcher to consciously self-assess their views and position and how these might influence the research [407]. Positionality acknowledges that researchers are part of the social world they are researching, challenging positivist ideas of objectivity [409]. Throughout the following sections I discuss matters of ethics and reflexivity to show how they touch upon many areas of research.

8.9 Study setting

This research was carried out in North East England, the region that lies East of the Pennines between the Scottish border and the river Tees. It has three counties, county Durham, Tyne and Wear and Northumberland, spanning from the coastline to urban city centre to rural areas. North East England has a population of around 2.7 million people. Child poverty is a particular concern, with rates increasing steadily over the last decade [410]. The North East has seen child poverty rates move from just below the national average in 2014/2015 (26%) to having the highest rate in England in 2020/2021(38%) [410]. In other words, two in five babies, children and young people are living below the poverty line after housing costs. Areas in the North East have seen the most dramatic rise since 2014 including Newcastle, Gateshead, Cleveland, Redcar and Sunderland [410]. The region now has six of its local authorities featuring on the list of councils with the highest child poverty rates in England: Newcastle (42.2%), Middlesbrough (41.2%), Sunderland (39.7%), Redcar and Cleveland (39.3%), South Tyneside (39.1%) and Hartlepool (39.0%) [410].

8.10 Sampling

Multiple approaches helped identify potential research participants, although sampling was guided by pragmatic issues of cost and the short timescale dictated by a three-year funded PhD project which had been greatly impacted by the COVID-19 pandemic (section 4.7). The recruitment strategy was grounded in a *'purposive'* approach which meant making deliberate choices to include participants who were experiencing the phenomena of interest – frontline workers working within the food insecurity landscape [394, 396]. Thus, the sampling approach was wide to capture a breadth of experiences of different types of frontline workers working in relation to food insecurity. Qualitative studies don't intend to have representative samples or to produce generalisable results. Rather, this research was guided by the principle of *'maximum variation'* which attempts to understand phenomena from the widest range of perspectives as possible to gain a more holistic viewpoint and in-depth understanding [411]. Braun and Clarke discuss how striving for a bigger sample size can risk *'failing to do justice to the complexity and nuance contained within the data'* ([412] pg. 741). Further, reflexive TA conceptualises

themes as *actively* created rather than waiting to be discovered, thus there is not a need to chase a larger sample size [401]. Based on this an eligibility criterion for participating was not desirable. The only criterion was that a potential participant was a frontline worker defined as someone helping women and children access food. Frontline workers worked in either the social, health or third sector as a professional or volunteer. These groups were considered to have locally based knowledge of the wider picture of household food insecurity through their day-to-day interactions with people living with poverty and requiring food aid, but who may not themselves engage with food aid services otherwise.

Four approaches helped target potential participants with the aim of achieving maximum variation:

- First, I contacted all food aid service co-ordinators I'd met during the scoping phase of this PhD (see chapter four) and used snowball sampling whereby participants suggest other potential participants for the research

This first approach recruited three participants from the eight food aid services identified during the scoping phase of the PhD. Of the five that did not participate, three were not working on the frontline at the time due to personal reasons and two did not respond. Recruiting this way was slow and knowing some participants prior to interview had its own challenges (see section 8.12 for a reflection). Hence, it was important to widen the sampling frame in other ways; I broadened it to include frontline workers across North East England, then:

- Secondly, I used the social media platform Twitter to tweet about my study with a link to an online form (Typeform) to register their interest. An information sheet was then sent to these potential participants with a follow-up email or phone call (as preferred)
- Thirdly, I worked with two gatekeepers who helped facilitate targeting potential participants, (1) North East Child Poverty Commission; a stakeholder network encompassing the breadth of sectors involved in tackling poverty and, (2) Gateshead Council. This approach involved presenting an advert of the research project at the end of the North East Child Poverty Commission online conference and both gatekeepers sending an email to relevant potential participants of my behalf (appendix K) with a link to my researcher profile and a link to a short online form (Typeform) to complete with their name, job sector, job role and contact information so that I could get in touch with information sheets
- Finally, snowball sampling was continually used to recruit more potential participants

An online platform, Typeform, was where potential participants were directed to complete a form to show interest in the research. The form on average takes 30 seconds to complete. The link for this form was tweeted, shared on the presentation slide, and shared via email by gatekeepers to potential participants. In total, 28 people viewed the online form, 8 people started the form and 2 people completed the form. Of the 2 people who completed the form, one participated in the research. The other person did not respond to a follow-up email or phone call. Snowball sampling recruited five participants in total.

8.11 Recruitment

Prior to arranging an interview, potential participants received a participant information sheet (PIS) and consent form to understand more about the study; mainly the study aims, why they were potential participants, what participation would involve, the process from start to end and how their data will be handled (see appendix L and M). It is important that potential participants can digest the information. This calls for a less academic style of writing, but a balance must be struck. Hence, the PIS was written in a way to ensure accessibility of information whilst maintaining the integrity of key messages. Of importance was how I would maintain anonymity, data protection and confidentiality. I was acutely aware that participants were talking to me within their professional capacity, and so to ensure open sharing those were a priority. In addition to steps mentioned in section 8.14) I used pseudonyms in my Outlook calendar when scheduling an interview to ensure confidentiality, as my calendar is open for people to see. Prior to the interview, I communicated with participants either by email or telephone (their preference) to answer any questions that arose from reading the PIS and consent form. After expressing an interest to take part and having read the study information, an interview was arranged. I left space to discuss the research and ask any further questions prior to re-consent on the day of an interview.

Managing consent across serial interviews means that consent is an *'ongoing process'* rather than gained at a single time point [413]. Research aims might evolve between interviews and participants may no longer wish to take part for various reasons. Therefore, re-establishing consent is essential to ensure participants are aware of the purpose of the research, their role, and their continuing rights to withdraw at any time. To facilitate the ongoing process of consent, participants were given another PIS and consent form and asked to re-consent. A *'thank you'* for taking part in the form of a voucher was not given to participants as they were interviewed in their professional capacity working on the frontline.

Retaining participants for serial interviews is a potential challenge [382]. Participants were informed about a potential follow-up interview in the PIS and again at the end of their initial

interview. It was at this point that consent to contact participants regarding a potential follow-up interview was gained. Between interviews, to maintain contact, I sent a Christmas email wishing a happy holiday to each participant. Having a prior relationship with some frontline workers helped in this respect, as four of the nine participants interviewed in the first wave were re-interviewed. Of those not re-interviewed from the first wave of interviews, one participant felt it wouldn't be beneficial as they no longer worked on the frontline and the other didn't respond to correspondence.

Recruiting participants working on the frontline during a pandemic had its challenges. During the initial wave of interviews, rules shifted in North East England from allowing open indoor activities and gatherings (August 2020), to no household mixing (September 2020), a three-tier system introduced (October 2020) and another national lockdown (November 2020). The uncertainty of the situation, exacerbated by global media, provided a context for poorer worse mental health and wellbeing [414]. Yet, throughout this period, and the whole pandemic, frontline workers continued to expose themselves to the virus, working to provide food aid within communities. Thus, their capacity for participating in research may have reduced compared to pre-pandemic times as they were likely at higher risk of burning out.

8.12 Data generation

I took a pragmatic and fluid approach to the data generation process because of the fast-paced, unpredictable changes to public policy and public health protection measures occurring during the pandemic. I wanted to explore the impact of this shifting landscape on the nature of food insecurity over a specific period of 9 months - a period dictated by the timeframe of the PhD within which I conducted other projects. It was important to remain fluid in my approach to get an understanding of how much frontline workers were dealing with. Frontline workers governed initial interviews, occurring when they had a break in their schedules to speak with me. Follow-up interviews took place broadly six months later.

In total, nine participants took part in thirteen interviews between August 2020 to April 2021. Six participants interviewed between August and November 2020, three more participants interviewed between March and April 2021 alongside four follow-up interviews in March 2021. All interviews were audio recorded ranging in length between 30 minutes to an hour. All interviews used the online platforms Zoom or Teams except one which was a telephone interview. No interviews were face to face due to an ongoing pandemic which meant as a qualitative researcher I had to ensure data generation used a socially distanced method. All the participants were frontline workers who were currently working, or had worked, in a white-collar job. Accessibility to a range of computer-meditated communication platforms in addition

to a mobile was not a concern with this group. Indeed, most were using work provided computers to take part in the research. Different potential formats were offered to participants for the interview including Zoom, Teams, and telephone call. Supporting Archibald et al. (2019) [415] I found that Zoom was my preferred option, with most participants also selecting this. Zoom is a user-friendly, convenient, secure platform. The simplicity of accessing a meeting meant I had no issues with participants not being able to connect via the link provided. The option to securely record the interview and transcribe it without using a third-party software saved me valuable research time (although the transcription needed editing, the bulk of it was done). The platform with the poorest quality of calls was Teams. Part way through two separate interviews, participants had to turn off their visual camera due to difficulty maintaining a strong connection. Further, gaining consent whilst conducting online data generation was not as simple as face-to-face research when a participant can sign the document in person. In this research, for the most part electronic signatures were provided on the consent form sent via email. When technical difficulties arose with adding signatures to documents, an expression of consent in response to that email was sufficient [416]. With some, I had phone calls prior to the interview to discuss their questions about the research. For all, prior to starting an interview participants had space to ask me any questions and re-confirm verbal consent.

Post re-confirming consent, interviews began with me asking participants to tell me a bit about their role as a frontline worker including how long they'd been in their position. From there, conversation continued with me silently ticking off aspects of the topic guide as we touched upon them in the flow of talking. Occasionally I used prompts to dig deeper on points of relevance to the research question. As a novice interviewer, the more interviews I conducted the more confident I was at responding to unexpected responses and the more flexible I was with the interview guide. This approach fits the ethical consideration of ensuring the interview is not solely for the purposes of the researcher's endeavours, but an exchange. Interview topics included:

- First encountering food insecurity
- How their services provide support to women and children
- Perceptions of the health impacts on women and children
- Experiences of being on the frontline during a pandemic
- Views on mitigating food insecurity
- Hopes for the future

I was aware that an assumption was made during the initial few interviews that both the participant and I were working from the same definition of food insecurity or food poverty.

Therefore, in subsequent interviews I asked participants what they understood the terms to mean. Prior to follow-up interviews, along with PIS and consent form I sent participants a timeline (appendix N,O) based on socio-economic events that had taken place between the initial and follow-up interview. Being able to capture participant's experiences of the changing landscape within which food insecurity sits required their accounts of how their experiences and perceptions might have differed since the initial interview. Working under the constraints of a pandemic during which time public policy and procedural changes occurred at an accelerated rate, I learnt after my first initial follow-up interview those frontline workers needed a memory prompt on key changes that had occurred. Thus, I created a timeline which proved beneficial in future follow-up interviews (appendix O). Different uses of timelines in qualitative research include the context of aiding vulnerable groups to discuss intricate lived experiences [417], as a way or enhancing life history research [418] or creating a timeline with participants to aid detection of patterns and sequences over time [419]. In this research, the timeline's primary purpose was as an aide memoire to stimulate discussion of changes within a chronological order. In practice, participants still jumped around in their narrative, but it served its primary purpose in prompting participants.

The benefits and challenges of researching with people you know using interviews became apparent during this research. I had prior relationships with three participants to varying degrees. Being able to build rapport with participants was an important part of gaining trust and facilitating participants to open up during interviews. Previous interactions meant this happened rapidly in an interview, with all three participating in a follow-up interview. As Aburn et al. [420] finds amongst nurses, the process of participation might be cathartic for participants who can discuss experiences in depth with someone they know. Challenges that arose included dealing with pre-existing knowledge as the participant has consented to information *only* in the interview being used as data, not to insight gained previously. Upon reflection I could have implemented the following strategy more regularly to overcome this challenge. That is McConnell -Henry et al. [421] suggest a way to incorporate that knowledge into the data generation process, acknowledging presuppositions rather than putting them to one side. For example, saying *'I know you have done X…please tell me more about…'* They suggest that this also ensures assumed prior knowledge is not left out of the interview [421].

8.13 Harm and distress

Participants were not expected to come to any harm or distress as a result of taking part in this research. They were interviewed within their professional capacity as a frontline worker. However, there is always the potential of emotional distress when talking in-depth about topics

which can be deemed sensitive or burdensome. One participant became visibly angry about the topic during the interview, then used humour to move past it. Steps were put in place to remind participants that they were free to skip or move on from any questions and were free to withdraw from the study at any time. It was also important to consider my emotional wellbeing throughout the data generation process. The topic of discussion involved difficult aspects, like listening to frontline worker's harrowing stories of how some families were so destitute, and frontline workers' own worries and stresses about the situation. To manage this, I kept a reflection diary to process interviews and emotions arising, I made myself aware of the support services available from the university and made a point of contact should I have needed support.

8.14 Data protection

To minimise any risk to participants, their confidentiality and privacy was a top priority throughout the study. Steps taken to minimise risk including ensuring that no participants were directly identifiable. Using numbers for participants made them un-identifiable and other potentially identifying data not needed for analysis was removed. Interview recordings were uploaded onto a university file store accessible only by the researcher and research team. Recordings were deleted from the original recording device or platform. To reduce the impact and sensitivity of the data everything was compartmentalised i.e., participant names, where they were recruited from, and contact details, were kept in a separate password-protected file/location to the transcript.

8.15 Analysis

There are six defined steps to TA [402]:

1. Familiarising yourself with the data (i.e., transcribing, reading, taking initial thoughts as notes)
2. Generating initial codes (coding data and organising data relevant to a code)
3. Searching for themes (organising codes into potential themes)
4. Reviewing themes (reviewing whether themes work based on codes and the entire data set)
5. Defining and naming themes (reviewing the stories of themes)
6. Producing the report (writing the findings chapter and selecting quotes)

The analysis process in practice takes place iteratively moving back and forth through the steps to develop and refine themes. As stage three implies, themes do not passively emerge from the data, rather the researcher plays an active role in the interpretation of the data, relating it to existing theory and the wider context. My positionality influences this process and thus the

narrative presented in chapter nine. The first step to data analysis using Braun and Clarke's reflexive TA approach [401] was to familiarise myself with the transcripts. This began whilst transcribing interviews as it entails re-listening to the audio and recording the interviews verbatim. Whilst some online communication platforms offered a transcription function, it was imperative to continue with the step as I found it was not completely accurate. I transcribed all nine initial interviews, but members of my research team transcribed follow-up interviews. Whilst I found the transcribing process useful for familiarisation, it was a lengthy process. Re-listening to the audio and reading the transcript proved just as useful as the process of transcribing. Once I'd read and re-read the whole dataset to get an understanding of the wider picture of the data, I started coding. Coding all the transcripts created around fifty codes of fractured data. At various points along the coding process, I paused to see if any codes could collapse into one code with a new name reflecting the merged codes. Alongside coding I wrote memos keeping a trail of my initial thoughts, potential links, and questions to ask the data. Figure 14 shows an example of a transcript and coding in NVivo.

P8:
Yeah, and so this the formal mutual aid teams were set up as a sort of this time last year, maybe just slightly before the government announcements of lockdown, when people started to isolate and shield and a number of groups of people just keep together using social media primarily just to make sure that people have access, so it was more so, access to items across isolation and then it's sort of grown and developed and we're seeing new waves of things like certainly after Christmas there has been a real reality hit, I think, for a lot of families. I think people, maybe hold on until Christmas they keep going with that positivity and then in January, people may be hit with lockdown and the realization that they have lost their jobs and and we have seen new families where both parents have been employed now having to access food banks and the stigmas attached with that.

And I mean, to be honest, that isn't something new, I think the working poor was an issue we saw prior to covid with families where both parents worked or one parent worked or single parent families, where one parent is working, but they can't afford uniform but that's becoming so prevalent this year we're seeing maybe families from stereotypically affluent areas have an access food banks, for the first time since both last jumps, so that's really prevalent January onwards.

I:
That's quite scary actually.

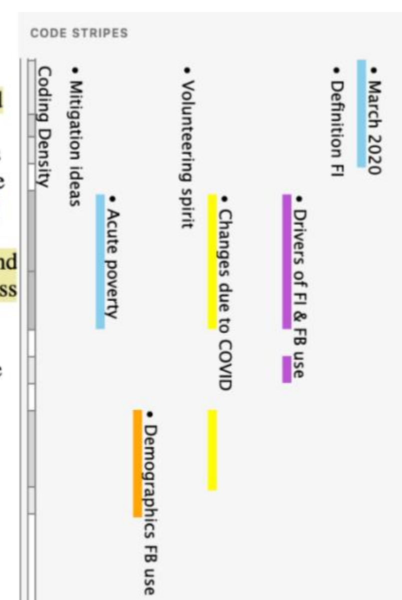

Figure 14: Example of transcript and coding in NVivo

As this process developed, I was able to start to see patterns across and between codes and interviews. I began to use paper to map out potential themes, going back to the interviews, comparing interviews and codes to re-read and clarify meanings. A member of my supervisory team double-coded one transcript. The purpose of this was to bring another perspective to the analysis process (i.e., a form of investigator triangulation). Moving to step four I began to define themes and sub-themes checking whether the codes captured a *'uniting idea' [401]*. For this I wrote a memo for each developing theme to capture my thinking and ensure they were relevant to the research aims. Naming and defining the themes felt iterative with the final step of writing

up the analysis within which a narrative unfolded around the themes, driven from the data within the codes.

As this project used serial interviewing, capturing the time element and changes required a specific approach. I started the analysis process by coding all participants who had follow-up interviews, keeping a memo of my interpretation of how participants experiences, and perceptions, differed over time. I also coded aspects of other transcripts that talked about varying experiences or perceptions that had occurred during the research period. These changes experienced by participants were incorporated into themes, bringing an additional layer of understanding that would not have otherwise been captured using one-off interviews.

NVivo version 1.6.1, created for qualitative analysis was the software used to manage and analyse the data set [274]. The software enables storing of data, coding of transcripts, organisation of codes into themes and memos linked to codes and themes that helps the researcher begin to see patterns. However, as useful as I found the software to code the data, I felt it was difficult thereafter to see the wood through the trees, thus used a hybrid approach of printing NVivo codes and memos, highlighting data and using pen and paper to mind map.

8.16 Reporting the data

I present participant quotes throughout the findings chapter, to both illustrate my point and *'give voice'* to participants. To protect participant identities a numbering system is used i.e., a quote from participant one is represented as P1 with a follow up interview quote presented as FU P1. Some demographic data has been obfuscated to preserve anonymity. Pseudonyms were not chosen given that the research was conducted in a region where people are familiar with those who work within the food aid landscape, thus they may reveal gender identities with the potential of breaching anonymity. Participant quotes are presented verbatim although repetitive tics such as *'you know'* and *'like'* are removed to clarify the quote without losing its meaning. Colloquial terms that required translation are presented in square brackets next to the original word [translation]. Some quotes have […] inserted, this illustrates where part of the quote has been removed either to protect anonymity or because the participant spoke of un-related topics. Participant's voices are presented using italics and quotation marks linked to a number that is in turn linked to table 10. See table 12 to indicate the time-point of participant interviews. Larger quotes are set apart from the text to aid clarity for the reader.

8.16.1 Language

Whilst writing up chapter nine I reflected on what language to use to describe food insecure women and children who were accessing food aid services. Multiple options were available,

but I was careful to select a term that did not reinforce the stigma of experiencing food insecurity, infer the wrong meaning. For example, they are not a *customer* because they are not paying for goods or a service. They are also not benefitting from using the food aid service as my studies have shown adverse health and wellbeing consequences in connection with using food aid, so the term *beneficiaries* does not work either. A potential option would be to use *recipients* as they are in receipt of something, and it reflects that often this is not reciprocal. The term *client* could work as a service is supporting them although they are not paying for the service. In the case of those accessing a food co-operative, *member* is an option as they become members with membership cards, but this did not apply to everyone in the study. Fundamentally though, food aid services are *supporting* them, thus I felt it was the most neutral and accurate to use the term *people that they support*.

8.17 Chapter summary

This chapter describes the philosophical and methodological underpinning I used to carry out the empirical research of this thesis. I conducted fourteen interviews over an eight-month period during a pandemic to capture the experiences of frontline workers of the emergency food aid system. Analysis of these interviews has allowed for a rich understanding of how frontline workers have experienced the changing food aid and public policy landscape and their perceptions of its impact on the people they support. The following chapter presents a narrative of the data that was collected as described in this chapter.

CHAPTER NINE

9 Chapter nine – Frontline workers experiences of the food aid system during a pandemic

9.1 Chapter overview

This chapter will present data generated with nine participants working on the frontline of the emergency food aid system in North East England. The aim of these interviews was to engage with and gather frontline workers experiences of supporting families and delivering food aid. Interviews were conducted specifically during the pandemic. Through qualitative analysis of interviews, four themes and ten sub-themes were developed from the data. They are presented and discussed in this chapter, but first an overview of participant characteristics is presented.

9.2 Participant interviews characteristics

The nine participants in this research were all on the frontline helping women and children access food, thus working in either the social, health or third sector as a professional or volunteer. Table 10 describes participants' details. Three participants worked in the social sector, two in health and four in third sector organisations. Of those working in the social sector two participants worked in Community Hubs set up by the local authority in response to the pandemic, the other participant for the Housing Company. Participants from the health sector included a family nurse practitioner and a social link worker. Participants from third sector organisations included two food co-operative coordinators, one foodbank coordinator and one mutual aid group volunteer. Four of these participants had a follow-up interview. Figure 15 presents a timeline depicting when interviews took place between August 2020 and April 2021.

Participant	Type of Organisation	Role of Interviewee	Sector	Location	Serial interview?
1	Community Food Initiative: Food Co-Operative	Co-ordinator of Food Co-Operative	Third Sector Organisation	NE England	Yes
2	Local authority community hubs	Staff at Hub	Social	NE England	No
3	Local authority community hubs	Staff at Hub	Social	NE England	Yes
4	National Health Service / Family Nurse Partnership	Family Nurse Practitioner	Health	NE England	No
5	Community Food Initiative: Food Co-Operative	Co-Ordinator of Food Co-Operative	Third Sector Organisation	NE England	Yes
6	Community Food Initiative: Food bank	Co-ordinator of Food bank	Third Sector Organisation	NE England	Yes
7	Housing Company	Rent and incomes	Social	NE England	No
8	Community Food Initiative: Mutual Aid Group	Volunteer of Mutual Aid Group	Third Sector Organisation	NE England	No
9	National Health Service / Community Centre	Social link worker	Health	NE England	No

Table 10: Participant information

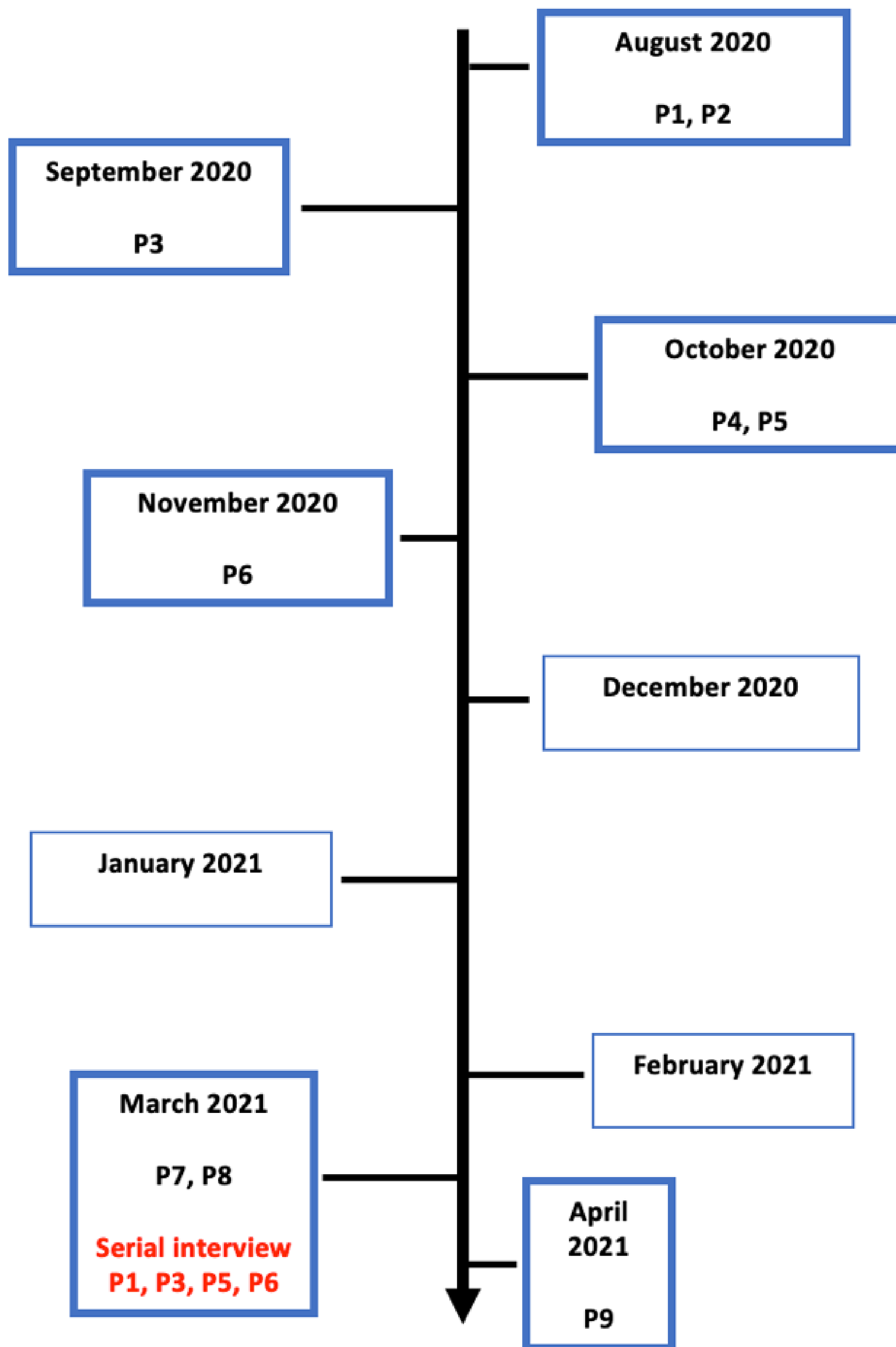

Figure 15: Timeline mapping each participant interview

9.3 Themes

Analysis yielded four themes and ten sub-themes presented in table 11 below. Key themes include: Is the emergency food aid model 'fit' for purpose, beyond food to multiple poverties, working on the frontline, and looking to the future – what's next? Discussed in the following sections are each theme and sub-theme.

Key themes	Sub-themes
Theme one: Is the emergency food aid model 'fit' for purpose?	The changing emergency food aid landscape Nutritional needs and desires Sustainability An ethical dilemma
Theme two: Beyond food to multiple poverties	Access and availability to a healthy diet Beyond food: Walking a tightrope
Theme three: Working on the frontline	Volunteering spirit (Un)Shifting views
Theme four: Looking to the future – what's next?	A strategic approach Re-thinking access to food

Table 11: Key themes and sub-themes developed using thematic analysis

9.4 Theme one: Is the emergency food aid model 'fit' for purpose?

This theme related to the nature of the emergency food aid landscape and whether the emergency food aid model is 'fit' for purpose. Sub-themes related to how food aid adapted to a changing policy landscape during the research period, whether it met the nutritional needs and desires of the disadvantaged populations served, the ethical dilemma of the emergency food aid model and its sustainability over time.

9.4.1 The changing emergency food aid landscape

Table 12 depicts a timeline of the changes to food aid services over the twelve months prior and during the research period alongside key socio-economic and food policy changes that occurred within the research context and participant interview timings. I will refer to this table overleaf and throughout the findings section.

Date	Emergency food aid changes	Socio-economic and food policy context	Timepoint of participant interviews
Mar 2020	• Food aid services move to delivery model only • Food co-operatives lose personalised food shopping experience • Food aid services reduced to offering only food • Volunteers no longer face-to-face with clients	• National lockdown • UC* minimum income floor removed • Schools closed	
Apr	• New LA community hubs open in response to pandemic • Reduced variety within food parcels as relying on stocks • Spike in demand of food parcels – Easter period	• National lockdown • FSM Voucher £15	
May		• National lockdown	
Jun	• Food aid service stockpiles gone	• Lockdown eased • School children Reception, Year 1, 6 return • Government u-turn and introduction of FSM vouchers in holidays	
Jul		• Non-essential shops, salons, pubs open	
Aug	• Re-opening of some co-operatives for some in-person collection at limited capacity + delivery service	• Opening indoor activities • 'Eat to help out' scheme	P1, P2
Sep		• North East England lockdown measures • Schools return autumn term • End of £15 FSM vouchers	P3
Oct	• Food aid services increased number of hours & days volunteers working to meet demand & COVID safety measures	• Three tier system introduced • LA, third sector and businesses offer free meals for children in school half term	P4, P5
Nov		• National lockdown • Holiday Activities and Food program to cover Easter, Summer and Christmas 2021 • Increase in value of HSV and change from a voucher to top-up card	P6
Dec	• Spike in demand of food parcels – Christmas period	• Tier system re-instated • North East England tier 3	
Jan 2021		• North East England tier 4 • Schools re-opened only to close again	
Feb	• No spike in demand of food parcels	• National lockdown • Families receive FSM, vouchers, food parcels or holiday clubs	
Mar	• Food co-operatives opening times and days reduced • Food bank still open at increased number of hours & days • Delivery model still operating	• National lockdown • Schools open for all pupils	P7, P8 Follow-up P1, P3, P5, P6
Apr		• Easing of national lockdown	P9

Table 12: A timeline of the changes to emergency food aid during the pandemic, the socio-economic and food policy context and timepoints of participant interviews (*LA – Local Authority, UC – Universal Credit, FSM – Free School Meals, HSV – Healthy Start Vouchers)

Participants in this study represented various models of emergency food aid, including formal models like the Trussell Trust foodbank that has rules around receipt and limits on parcels, and informal models that are flexible regarding access with respect to number of visits and circumstance. Informal models included food co-operatives, local authority governed community hubs and mutual aid groups. Prior to the pandemic, foodbanks, food co-operatives and informal mutual aid groups were all distributing free food in the North East region, whilst community hubs arose in March 2020 as a local authority response to the pandemic alongside more formal (and numerous) mutual aid teams.

As table 12 shows, the model of emergency food aid on offer for people experiencing food insecurity fundamentally changed in March 2020, when the UK government enforced its first national lockdown and other measures to prevent the spread of COVID-19. Whilst most of the nation was working from home, frontline workers on the emergency food aid landscape continued to work because they *"…had special permission to open and do it"* (P5) given that they were defined as key workers providing an essential – food - to families. Participants working on the frontline spoke of how they were required to shut their doors to the public and adapt to a delivery model. This was a sensible approach because *"we didn't want a queue like we used to have that would be a whole problem socially distancing… it would just be a nightmare"* (P1). The delivery model that started in March 2020 meant food parcels were taken directly to the home of the people they supported, with the doorstep now the only face-to-face contact frontline workers had with the people they were supporting.

Participants expressed both benefits and challenges to this sudden change for the people they supported. Reflecting eight months into the delivery model and stay-at-home guidance, *"I hate to say that's quite positive for some of my clients with mental health where they don't have to go out and meet people; they can do everything online or over the phone"* (P4). However, for most people supported with food aid, the delivery model meant they missed out on other valued interactions and support offered by food aid services. In pre-pandemic times, some services offered more than food such as free clothes, toys, or toiletries, but a delivery model meant they had to take a step back in their offer reverting to distributing only food. In pre-pandemic times, foodbank volunteers often chatted with clients offering informal support and signposting. However, even nine months into a pandemic delivery model they could only offer people *"some support numbers that they can ring…we can appreciate that the doorstep, it's not the best place to be having a conversation"* (P6). Having informal conversations with the people they supported was a key value for some food co-operatives whose pre-pandemic model included a community café where members could sit and chat, drink and eat together after collecting a

food parcel. The importance of this *"in terms of people's health and wellbeing that connection is really important… that sense of community, coming back together"* (P1). Evidently, the pandemic undermined the emergency food aid services' ability to address social isolation and refer people to appropriate services.

However, community hubs set-up in response to the pandemic in April 2020 were able to include telephone support lines for families. People would ring into their local hub and speak with a frontline worker prior to being offered a food parcel. Unlimited access to food parcels meant *"you get to know the people that are usually ringing within your hub, you recognise names…when they ring and you think oo that doesn't really sound like them, if they're a bit down, you can kind of just, yeah, just dig a little bit deeper, to actually why, if they're alright"* (P2). The Trussell Trust foodbank also set-up a helpline in partnership with Citizen's Advice Bureau helping people access food at a time when many of the pre-COVID referral routes were lost *"…Citizens Advice national helpline are assessing people if there's, in terms of the food voucher. We are delivering, or our volunteers are delivering, directly to the client door."* (P5).

In March and April 2020 emergency food aid services adapted to the pandemic in another way by increasing the number of hours and days per week they were open to sort, pack and distribute food parcels. The process of accessing a food parcel from a national foodbank also differed from pre-pandemic; the role of the referrer changed. Instead of offering a voucher for a foodbank *"the referrers are picking up prepacked parcels, taking them to their places and giving them out directly to the clients"* (P6). They were also now responsible for accurately recording and communicating dietary requirements and allergies to the foodbank. Meanwhile, for independent, locally run food co-operatives they seemed to harness the knowledge and networks of their community adopting *"what we'd call community champion, people that were really plugged in…local people who tended to know most of the other local people who are our volunteers, they would then say when they felt somebody was in need"* (P1).

This adaptation to the pandemic was feasible because of the volunteers' connections, perhaps portraying the benefits of food aid services facilitating a community-cafe aspect within their model. Although the community café was still not open twelve months after the start of the pandemic, during August 2020 when restrictions eased, some food co-operatives re-opened at smaller scale whilst maintaining social distancing measures. *"Where we used to allow maybe 5-6 people at a time to come through, we tend to allow 1 possibly 2 people to come through"* (FU, P1). Subsequently, there was a renewed sense of hope from the disadvantaged community who were accessing food *"I remember [name] said somebody said when we first opened it back out, this just feels like Christmas all over again, this is our lucky day because suddenly we've*

got all these things we can choose from" (FU P1). Yet twelve months on, in March 2021, most services were still not back to their pre-pandemic model; most continued to operate with increased working hours and all maintained a delivery model element.

9.4.2 Nutritional content of food parcels

All participants acknowledged that as emergency food aid services they were distributing food that *supplemented* what was in the household rather than being the sole nutritional provider. Talking to participants about the nutritional content of food parcels exposed some tensions between frontline worker's perspectives on their expectations of the nutritional standard of parcels. Food co-operative staff felt that the traditional foodbank model did not meet the nutritional needs of the people they supported in two ways: (1) *"it was not necessarily fitting the needs of the people who were from various ethnic minorities'* (P5) because they did not *"…provide things like lentils like rice like fresh fruit and vegetables and oils"* (P5); and (2) they lacked a standard fresh produce offer. Indeed, these participants were frustrated at the association of "*food bank, food poverty, give people tinned stuff, prepacked stuff"* (P1) suggesting that this association of giving dried, tinned, prepacked goods and not fresh produce existed because of the offer provided by the national foodbank, The Trussell Trust, synonymously thought of when the terms food insecurity or food poverty are used. Participants from the foodbank explained that fresh produce was not in their offer as they *"haven't got the facilities and we didn't have the sort of capacity in terms of teams and volunteers"* (P6) to ensure it is of high quality and in date. However, on an ad hoc basis they did distribute fruit and vegetables donated by the local authority during the pandemic. Further, the co-ordinator of the foodbank explained that:

> *"the idea of the food bank initially was to help people out in an in an emergency with some food, to get them over a particular period. And although its nutritionally balanced, it's food, and it's not like we've ever said that we were going to give them fresh fruit week on week to provide everything they need, it was an emergency parcel"* (P6).

The Trussell Trust are clear in their aim and, unlike other emergency food aid services the foodbank offers a nutritionally balanced parcel designed by a dietician. Indeed, these parcels supplement the food of households with vouchers capped, limiting access. Whereas the food co-operative offer has no limits, with members able to return each week through a crisis. So, it is perhaps re-assuring that frontline workers from these services express greater concern for fresh quality produce and choice given that these parcels would contribute a larger proportion of a household's overall diet. But what about the nutritional needs and desires of families accessing food parcels? Most participants shared examples of families requesting fresh produce

because their children loved to eat it *“families ‘ll [will] say oh just put as much like fresh fruit and veg in because that’s what we’re struggling to get as well and its expensive and the kids, you know if you put apples in or satsumas or carrots, they will, they will just kind of you know just eat away on those all day and it will keep them full of snacks”* (P2). Whilst another food co-operative frontline workers shared a story about a boy and his love for leeks:

> *“I remember one woman who came and she actually said my little boy he loves vegetables. He really loves vegetables, but you haven't had any leeks and he really likes leeks. And I think she was from Palestine but he really really likes leeks, could you get some leeks next week, so we've got some leeks and she was thrilled. And then the week after was a half term and she came in with this little boy and he remembered. And he said, oh, you know, you got me some leeks. I had those leeks. I really liked leeks. And he was just the biggest chatterbox and he sat with me and volunteers from Somalia and just chatted away.”* (P1).

Further, in food aid services where people were able to choose their own food for their food parcels participants felt that they were *shopping* with great discernment. They explained how people would pick up each individual vegetable to choose the best one, check the packaging and expiry dates. This shows that perhaps it was not just about getting food but about the process of getting the nicest food, the food that appealed to them, highlighting how people accessing these services care about the food they eat. This in addition to the previous point would suggest that by not offering fresh produce as part of their standard offer, foodbanks are not meeting the nutritional needs and desires of their clients as food insecure families value fresh produce. This raises questions about the wellbeing impacts of not being able to choose your own food within the food bank model.

Frontline workers shared that fresh produce was sourced predominantly from FareShare and wholesale markets using their budgets. However, for one food co-operative, the pandemic saw different types of individual food donations given by local citizens from dried goods to fresh produce. When asked about the driver of this change in food donation, they were unable to offer one except that they led by example in offering fresh produce. The co-ordinator of this service said *“we’ve reached a tipping point where it’s not just a few people giving oranges, but people absolutely getting it…we’ve really crossed that threshold with people grasping that actually it’s not just that we will give it out, we actually seek fresh fruit and vegetables… in a way that broke that pattern and mould, and that’s been exciting principally”* (FU P1). This provides evidence that any potential association between foodbanks and dried foods can break and that the public’s donation behaviours can change too.

9.4.3 Sustainability

Frontline workers accounts highlighted the fragility of the emergency food aid model's food supply. The changing landscape (see table 12 and appendix O) applied pressure to various food sources. Table 13 shows the food supply system of emergency food aid services, the challenges posed by the pandemic and the changes made as a result.

Food supply	Partners involved	Changes during pandemic	Challenges posed by COVID-19 pandemic
Surplus and non-surplus donations direct from supermarkets	Supermarkets, FareShare, Greggs, Walburtons	Supermarkets with pre-existing relationships increased their food donations	Dependent on pre-exiting partnerships and availability within supermarkets, in context of stockpiling
Surplus direct from neighbouring food aid services	Food banks, food co-operatives, community hubs	Continuation of surplus food sharing within the food aid network that acted as a buffer to food supply	Dependent on availability of volunteers and staff to co-ordinate
Surplus direct from schools	Schools, food co-operatives	Started during pandemic as schools had surplus food as (most) children not at school	Dependent on availability of volunteers and staff to co-ordinate
Donations by individuals – supermarket points, libraries, churches, harvest festivals etc.	Food banks, food co-operatives	Initial sharp drop in individual donations before rising again Increased individual financial donations	Reduced donations due to closure of donation points in some locations i.e., offices, libraries, and individual stockpiling
Donations by local food businesses	Local food businesses, food co-operatives, community hubs	Local businesses continued to offer donations on ad hoc basis	Dependent on pre-existing relationships and availability of volunteers and staff to co-ordinate
Food purchased in bulk from supermarkets / shops	Food banks, food co-operatives	Food banks started buying staples Food co-operatives continue to use this approach	Dependent on availability within supermarkets and limited by supermarket rationing
Food purchased from wholesale markets	Food co-operatives	Stopped weekly purchases of fresh produce	Dependent on availability of volunteers and staff to co-ordinate

Table 13: Food supply systems to emergency food aid services (adapted from Power et al. [105])

Participants reported three key pathways for accessing food: individual donations dropped at donation points in various public spaces, re-distribution of surplus food by FareShare, supermarkets or a network of volunteers and purchasing in bulk from supermarkets and wholesale markets themselves. The fragility of the food aid supply is first seen as all participants shared that pre-pandemic they relied heavily on individual donations and that they saw an initial sharp drop at the start of the pandemic *"we have permanent donation points in various, various places and shops, libraries and offices, When the pandemic started obviously a lot of those places were closed… we lost that and that route, as it were"* (P6). This was due to the closure of most drop-off points, households prioritising their own supplies and empty shelves in supermarkets from stockpiling which in turn limited what non-perishable food items services could purchase in the early stages of the pandemic. However, service co-ordinators felt *"very blessed with financial donations"* (P6) from *"personal donations"* (P5) thus allowing services greater financial freedom to replace donated food with bulk food bought from supermarkets or cash and carries. For Trussell Trust foodbanks individual donations came from large cooperations whilst for other services it was mainly from individuals or local authority supplementation. The knock-on effect of this bulk buying for disadvantaged groups was reduced dietary variety in parcels. Fewer random donations limited variation in the offer *"one of the volunteers who's now working in the warehouse did say oh [name] they're good parcels, but sometimes there's not the variety, you know she like to think about the client and choose"* (P6).

It became apparent that food aid services depended on pre-existing relationships to buffer the impact of COVID-19 on their food supply throughout the pandemic. These relationships included a community network of food aid services and partnerships with large or small businesses. A community network of food aid services enabled re-distribution of surplus food when volunteers were available, *"informal network of groups that know if they've got surplus they know where they can pass it onto where the food will be accessed by people"* (P1). This community network also relied on support from local businesses *"they [local butcher] donated spread cheese you know, you know soft cheese spreads, and meats as well to make patties and stuff"* (P3), or *"a local factory…they had 600 white loafs that's been frozen, and they asked me, so they are being brought in every week"* (P5).

New relationships were also established as food co-operatives "*established good links with the schools and when the schools weren't in we probably did well with food"* (FU P1) who re-distributed surplus food not eaten by children who were at home during the holidays. Whilst the foodbank had partnerships with supermarkets that continued throughout the pandemic, with some supermarkets increasing their food offer in support *"Asda as well we're in partnership with so they gave us additional food to that, that was collected and then for a short time Morrison's gave us some food as well. So, supermarkets did help out"* (P6).

Another source of fragility within the emergency food aid model came from its reliance on volunteers. Volunteers were integral to the provision of food parcels. Yet, availability of volunteers dwindled as many needed to shield due to age or underlying health conditions *"Food bank is staffed pretty much exclusively by retired people, and they haven't been able to, their volunteers and they've basically been withdrawn from distributing food"* (P7). Reduced numbers added pressure to those working on the frontline. Volunteers needed to re-distribute food between local services, sort, pack and deliver food, *"the food is there so it's about, how do you get it from there to the people who want to use it, and you need volunteers to do that"* (P5). Since the introduction of UC, multi-disciplinary teams within local authority had taken on the role of distributing food. For example, a rent and income team had *"a cupboard full of food which we constantly maintain and that's for people who don't quite meet the criteria of [name] food bank"* (P7) and they networked with another team, the *"refugee team had a lot of food that they no longer needed, so they said, could you take on this and checked it was all in date and we said OK, we can take that yeah"* (P7). Then, as referrers to the foodbank, during the pandemic they assisted foodbanks who had reduced volunteers *"now we've got two, one office full of piles of food trays and another one full of loads of food of our own supplies as well, it's not really, certainly when I started on the rent and income team we didn't have any of that"* (P7).

Given that distributing food aid had unintentionally become a larger proportion of their job role during the pandemic, there was a sense of frustration when twelve months on in April 2021 this was continuing and a questioning of how 'fit' for purpose the emergency food aid model was "*as a temporary measure for a few months when we're in a crisis at the start its pretty reasonable, but I think, it's been a long time now it's been a year and maybe someone should have come in and*

taken this off our hands…there has to be a better way to get food into the Community, then getting some rent offices to do it surely?" (P7).

9.4.4 An ethical dilemma

Participant's accounts were fraught with concerns about the ethics of the emergency food aid model. Food co-operative co-ordinators expressed concern with the gate-keeping role of referrers and foodbanks. They felt like foodbanks were *"vetting [people] before they turn up"* (P1) only to become a *"passive recipient"* (P1) of a food parcel. They also disputed the limitations foodbanks placed on families in time of crises. In reference to the foodbank, one co-ordinator expressed how this idea of limited access doesn't make sense to them *"you could only get two to three parcels in four to six months and that to me didn't seem to solve the problem I'm not taking away what the food bank does but to me it suggested that poverty was finite and I know for a fact it isn't."* (P5). Indeed, this suggests that poverty is not finite. Rather it is a fluid and pervasive experience for families. The *"assumption that if your poor you need a bit of help to get over the hump, and once you've got over that difficult time then life just carries on"* (P1) is not what they had experienced in practice on the frontline or indeed accepted. These participants felt they couldn't refuse families *"how can I now say to her, well that's the end of it there's no more food, how can I?"* (P5). Although the benefit of receiving a foodbank parcel at a time of crises cannot be denied *"there are times, where we do need to just sweep people up like we just need to sweep people wrap them up, give them everything they need at the immediate time, maybe enough food for the month and loads of clothes, whatever else they need…"* (P8). Foodbanks do just this by providing emergency support, *"but then we do need to try and empower them to move on as well"* (P8) and whether the foodbank does this is *questionable "a lot of times service providers, without even meaning to do carry unconscious bias and stigma and just can't really speak to people in a relatable way"* (P8).

9.5 Theme two: Beyond food to multiple poverties

Another theme to develop from frontline workers accounts related to the ways in which they viewed food insecurity or as they often said, food poverty. This included the way they viewed access and availability to healthy food for families, how despite food often being the presenting problem the problem is normally wider than food, underpinned by living a life in or on the cusp of poverty with families walking on a tightrope of limited choices they are constantly negotiating.

9.5.1 Access and availability to a healthy diet

All frontline workers recognised that access and availability of sufficient healthy foods was a challenge for families accessing emergency food aid services. Yet, the pandemic reinforced their understanding of how difficult it can be to access healthy food, or a food parcel, for families with children or those living in more rural areas. Functioning as a delivery model meant a sort of role reversal with frontline workers travelling from the food aid service to the client, albeit within a car, so not like most of the families they supported, who they said would walk or use public transport. Delivering parcels to homes increased empathy toward the families they supported *"we'd be more likely to give them a bus pass in the future, because you realise just what a long walk or, you know, it's usually they're walking up the hill with bags of food, maybe we need to think about that"* (P6).

Frontline workers expressed how poor transport links from rural areas require several changes to reach the centre of towns or supermarkets and people *"cannot afford the bus fares to get food, you don't have the money for the bus to get there"* (P4). Further, travelling with children could increase the difficulty of making the journey "*if they needed to access food, they wouldn't necessarily want to travel into the town centre, with their children as well"* (P2). During the pandemic, government encouraged the public to avoid public transport thereby further restricting access and availability of healthy food for families living in areas without a supermarket nearby. Frontline workers spoke of how families thus relied on shops within the local area, which lacked choice *"the offer was very poor, you know in relation to fruit and veg… [whether that's] because there isn't a demand or whether it's there's not demand because there isn't decent fruit, you know quality"* (P3).

It's possible that local shops are not making high quality produce available because they just *"can't keep up with supermarkets and the challenges of maintaining fresh produce"* (P8). However, perhaps demand was also low as accounts suggested that local stores on the estate were *"very costly"* (P3) especially during the pandemic when *"prices skyrocketed up in the corner shop"* (P2) making produce inaccessible. For families able to access supermarkets, offers could still be inaccessible *"you've got to buy a bag of apples, you can't buy two apples, and if you do buy two apples, then you pay a premium price"* (P1). Further, *"COVID is making it much worse because in the beginning there were shortages so poor people haven't been able to afford to stock up and people have shopped multi-packs"* (P5). The underpinning issue highlighted by these accounts is

the lack of income coming into the home *“there just isn’t the money coming into the house and decisions have to be made…”* (P3).

9.5.2 Beyond food – Walking a tightrope

Frontline workers explained how the women and children they supported were living in scarcity without informal support networks to turn to:

> *“she said when I've got nothing it means I've got nothing in my cupboards I've got nothing in my purse and I've got nobody to ask…a lot of people here in poverty the only friends and family they have are often in the same situation so you know like yourself and me we might go to family or friends, people often don't have anybody”* (P5).

Women were walking a tightrope of limited choices, trying not to fall (further) into poverty whilst living on very little *“she said after she paid all her bills, she only had £35.00 left a month to live on, you think how little is that that's hardly anything you know”* (P5). Thus, food aid services allowed people to use their money on other things to help them retain some dignity. Frontline workers described how from their experience families were often unable to even utilise the food they accessed, that is prepare, cook, or store food because of missing equipment. For example, *“people were often limited in terms of kitchen utensils”* (P2) or they found that families *“haven’t got white goods”* (P4). White goods like fridges, freezers and cookers are expensive items. They can be a high unexpected cost when they break resulting in households not having anything to cook from *“I don’t have a cooker to cook on…”* (P3) or potentially tipping a family into needing to access a foodbank for its repair because *“if something does break there's no financial safety net there if that makes sense, there's no safety net”* (P8). Further, families need to be able to afford to use the white goods *“if people haven’t got money for the meter the gas and electric goes off, I mean it’s just, it’s never ending”* (P5) so prior to giving a food parcel frontline workers ensured that *“people had facilities to cook”* (P3) or offered alternative foods requiring little preparation, cooking, or additional costs to eat. The inability to utilise food can prevent a parent and child from sharing the experience of preparing and cooking a meal together, which a health professional describes as having potentially long-term health impacts on parent-child relationship building, food habits and relationships into adulthood *“it’s really important for shared positive emotions and it enhances that attachment between parent and child…that introduces a child of oh I can make this, that’s healthy food”* (P4).

Thus, services adapted to the needs of the families they supported by expanding their offer with many doing *"more than food, we do sort of household things"* (P1). Frontline workers felt that the role of the emergency food aid service went beyond food to clothes, toiletries, hygiene products, toys, nappies, and even furniture as from their experience *"these houses have got you know nothing… and it's not just food poverty, it's just poverty in general"* (P3), *"…if you haven't got money for food, you haven't got money for toiletries"* (P5). So, although *"food was almost always the presenting problem"* (P2) frontline workers accounts brought the wider context of poverty to the forefront *"what came through was that food isn't, sit alone, it's very much linked to other parts, so housing was a really clear one, linked to kind of benefits linked to other parts of often people's chaotic lives"* (P2).

Frontline workers felt that things worsened for families during the winter months and school holidays. As table 12 shows frontline workers described seasonal variation in the demand of food parcels with the Easter and Christmas holidays representing peaks in demand. *"Holiday hunger"* (P5) as it was referred to occurred when children were on school holidays. Holidays increased the strain on the financial budget *"kids who had been, being fed at school but now at home and so there were more people to feed, and you know the disposable income for a lot of people had just gone down quite a lot"* (P3).

In recognition of the impacts of the pandemic on households' economic stability, government offered families whose children were eligible for FSM a £15 voucher during the 2020 summer school holidays. The offer meant that over six weeks there was *"ninety pounds for each child to kind of make sure that the children has access to I suppose a good lunch throughout the school holidays"* (P2) in a *"lump sum"* (P2). Frontline workers working in community hubs described how they took the initiative to put leaflets into parcels going to households with children, to raise awareness of their potential eligibility for FSM if families had experienced a change in circumstances as was common due to the pandemic *"if your circumstances have changed you may be eligible for free school meals, please ring and speak to one of the [field site location] school meals teams and they'll be able to tell you, you know, if you are or you aren't, but you know, you're not wasting anyone's times, but please ring"* (P2). However, unlike pre-pandemic years, the February half-term did not have a peak in demand. Frontline workers felt that this was because, at the time, local businesses were offering free, often warm, meals to families in response to the

pandemic and their increased awareness of food poverty through things like Marcus Rashford's campaign.

9.6 Working on the frontline

This theme relates to frontline workers' personal experiences of working on the frontline within the emergency food aid landscape. Emerging from their accounts is an understanding of the motivations behind volunteering, their un(shifting) views on food insecurity and/or food poverty and whether the changing landscape of food insecurity impacted their morale.

9.6.1 Volunteering spirit

Working on the frontline during the pandemic meant participants had to adapt quickly to the vast number of unpredictable government measures implemented, all within the context of putting their own lives at risk as opposed to staying at home. Of interest then is data emerging from accounts that begin to shed light on their motivations for taking on this, often unpaid, or unacknowledged role on the frontline. Frontline workers described altruistic values and wanting to put into action personal, spiritual, and environmental beliefs and values for creating access to healthy food for low-income people in their community. Frontline workers were altruistic in their endeavours to support people in community often using their own financial resources to support community members *"Sometimes we buy out of our pocket but that's fine"* (P5). Indeed, what harnessed these frontline workers was an underlying unselfish, caring nature that wants to give back *"I've always been very interested in trying to give something back to the Community"* (P8). This seemed to stem from prior immersion within community and working in the social and health sector, thereby exposed to the reality of people's difficulties *"I was in the community for a long time [as a health professional], it gives you, it opens your eyes to actually what goes on in community"* (P4), or *"You've got to help them through their circumstances"* (P7), and *"I just realised really quickly that if we didn't feed people, they might not die of COVID, but they were going to be very ill with the loss of food"* (P5).

There was also a deep understanding of the knock-on health consequences for low-income families, generating empathy towards their clients and perhaps motivation for continuing to be part of the food aid landscape:

> *"To people in community who don't have the full idea to the extent of how food poverty ripples through, it's like dropping a stone into a pond, that ripple effect, you drop food poverty and the*

ripple effect is huge, so if you can address food poverty in some way you are addressing relationships, healthy options, healthy decisions, mental health, child development healthy pregnancies it's really, health matters and nutrition matters" (P4)

Another motivation was feeling angry, a side-effect of their deep caring nature. Angry that people within their community find themselves living in acute poverty without a safety net and angry that people are in a position without food to take their medications *"it really really angers me and I just get really really annoyed and so I feel this is why I've pushed and not only got the food bank at [site name] but I've also got one in [site name]…to me is as absolute outrage I just, I cannot put into words how angry that makes me feel"* (P5).

Other motivations that were evident from accounts included more personal, spiritual, and environmental beliefs and values. Personal satisfaction came from helping another human being *"it was quite then satisfying the next time we spoke to the family, they say oh yeah thank you"* (P2). Whilst for another frontline worker their motivation seemed to be based on wanting to increase access to quality, healthy foods, underpinned by a philosophy of giving:

"If you're going to give, give nice tins, food, oranges not a bag of oranges that's discounted…because its cheap…don't do that, give somebody the best… it's about quality and quantity…why should I assume my principles are any different for somebody I'm going to give it to?...maybe we just have to do our little bit and trust that if we all do our little bit it will grow into something bigger. It's a very small universe if you think its just about what you give and take from our food co-op, it's what you give and take from our community as a whole. So if those people [previous clients] give in other ways, elsewhere, it creates a generous spirit in them, that's brilliant, that's having a much more ripple effect than just our own little food co-op world of give and take" (FU P1)

A downside to the altruistic nature of frontline workers is that this work can become all consuming. One participant felt strongly that volunteers need to implement boundaries around their emotional investment and time:

"the only issue is we do it all for free and it often you know it can eat into people's time and I'm always telling people you put your phone down after a certain time and I'm a victim of that

myself really. I don't want people to sort of take on the world and get too invested, you know, we've got to keep that line between being a volunteer and not, you know, you could just get really involved and I think people do need to keep that boundary there for that, you know, to protect themselves as well" (P8)

9.6.2 (Un)shifting views

I asked frontline workers whether their views of food insecurity were different since they started working on the frontline and during the research period. For those who did not work directly with the community prior to the pandemic, being on the frontline alerted them to how pressing the issue was for families and provided an opportunity for reflection. It *"opened my eyes, just to what we take, as a family, for granted"* (P3); this participant then explained how their children often complain that there is no food in the house, but they've come to realise that it's actually they cannot be bothered to do anything with it or they want someone to do it for them, however, these families accessing food banks *"these houses have got you know nothing"* (P3).

For others, the pandemic (and adapting to a delivery model) made them more aware of the severity of the situation that families live in. For example, most participants expressed how families depended on their service regularly rather than a one-off parcel *"we've been dealing with the same people for months now"* (P5), and *"you're often dealing with the same families each Friday where, obviously their circumstances are no better, they've got no new money coming in, they're often waiting for universal credit claims but often there's problems with that, so they're really struggling from one week, to the next"* (P2).

Frontline workers knew food insecurity and wider poverty existed but *"I've realised just how difficult it is for some families… how little they actually have, you know, in terms of the facilities even to it's the carpets on the floor… I feel for those families"* (P6), thus increasing their empathy toward families. Whilst for a few participants who'd been working on the frontline their whole career, albeit in various roles, their view of food insecurity hadn't changed but rather *"confirmed our feeling that there was a need and people are coming because they are desperate"* (P1) reinforcing the rationale for starting a food aid service. Furthermore, they remarked on the increasing prevalence of food insecurity within the community *"it is now so common you know it's really, I think almost there's a term like the working poor that it's almost accepted… even if*

you're working you maybe can't afford food for your family" (P8) and severity *"I think I've been surprised isn't the right word but sort of, really saddened to see how deep the poverty is out there and how few options people have you know"* (P5). The acceleration and diversification of need was also noted *"What I've found is, things are changing because people are losing their jobs now, so its not just people who are on universal credit who have always struggled to find work, its people who are, the worry now, its going to be people who have always worked who could well lose"* (P5). Yet, witnessing how much scarcity there was in community had *"been like really a learning experience for me, I think it's really a humbling experience"* (P5).

There were moments of hope during summer 2020 when food co-operatives re-opened at a smaller scale, but frontline workers predominantly described a feeling of uncertainty and sadness during the pandemic. During one of the earlier interviews in October 2020, a participant expressed concern for the families they were supporting. With a new tiered system in place across the country and in the context of increasing living costs they said *"I mean it just comes from all ends and sides. And now we've got the winter coming on"* (P5). This participant could not see any relief from food insecurity, joking with a serious tone *"you'll have us Up North [a TV show] in about twenty years' time, 'here they are still doing their food distribution'"* (P5). Reflecting on those winter months during an interview in March 2021 a participant expressed how the morale of those they were supporting dropped *"after Christmas there has been a real reality hit, I think, for a lot of families. I think people, maybe hold on until Christmas they keep going with that positivity and then in January, people may be hit with lockdown"* (P8). In the same month another frontline worker expressed feeling insecure about the future of their food aid service *"I feel like this could go on for a long time, and I can't predict the future… the future feels so uncertain"* (FU P1). Ironically, food aid services were experiencing how it felt to live day by day, dealing with only the present moment, still unable to plan a year into the pandemic *"it really feels much more hand to mouth but at the moment we can't, we're not in position to predict [future steps]"* (FU P1).

Uncertainty was one of the words participants used to define the term food insecurity. Descriptions focussed on the psychological element of the experience, food insecurity being a feeling of *"unpredictability"* (FU P1) *"precarious"* (P7) or *"gnawing worry"* (P8) or "*in danger of not being able to afford food"* (P7) and a *"constant gosh I don't know if I'm gonna [going to] feed my*

family" (P8). Whereas when participants described food poverty they focussed on the economic element of the experience. Descriptions included being *"in a position where you may not be able to buy what's essential"* (P7) or *"not actually being able to afford food"* (P6) summarised as when *"quite a high percentage of the household income [is] going on food then they would fall into a category of either food or fuel poverty"* (FU P3). Moreover, the term food poverty was more popular on the frontline:

> *"I've heard food poverty used a lot, food insecurity I haven't heard used a lot. Maybe just in the academic circles rather than on the ground. I don't think it's a term that would be used very frequently by somebody out in the community or a community worker for that matter"* (FU P3)

9.7 Theme four: Looking to the future: what's next?

Analysis of frontline worker's accounts developed a theme related to the approaches they felt would help mitigate food insecurity or make it easier for families to access healthy food. This included taking a more strategic approach to addressing the issue with sustainable solutions and re-thinking access to food.

9.7.1 A strategic approach

Some participants spoke of the need to take a strategic approach to mitigating food insecurity and helping people access healthy food in the region. They wanted to make sure there was better for future generations to come, so thought about questions like *"how do we make things different for 10 years' time?"* (P1). They had visions of the next steps for the emergency food aid landscape and how to get there. Ideas included bringing a food *"co-operative in every ward, or more"* (P5) which they suggested required an initial mapping exercise of the food aid landscape. However, sustainability was emphasised *"we're thinking of growing our own so that we can sustain, because it's not just about feeding people it's about sustainability because I really worry with Brexit that food prices will go up and people won't be able to afford food…I think building a chain of fresh food where we could grow our own"* (P5).

This is perhaps the next step for food co-operatives, growing their own their produce to ensure healthy, quality, fresh produce is available. Participants raised important questions in thinking about this next step *"how do we use land that the Council might own to start talking about whether people can grow food"* (P1). If that was not feasible then *"what's the purchasing power that the*

Council have either through the school meal system or through their cafes to help us to buy [fruit and vegetables] in at a lower rate" (P1). For this participant, harnessing relationships with the council and wholesalers to build *"a cooperative membership, but that they maybe pay a fiver or a month, or something like that, that entitles them to shop or to access particularly fresh fruit and vegetables"* (P1) was a vision. Others thought strategically by raising questions about *"potential gaps in terms of where they [food aid services] get their food from and where they rely on that from"* (P2). The community food network, led by council staff, could be an ideal place to address such queries. However, some felt this network needed strengthening, through an integrated food poverty policy or strategy:

> *"there needed to be some modelling some approach and also some belief saying this is what we believe about food poverty, why people are in food poverty and this is what we need to do to provide to make [field site location] a different place…which really links in with children and families that links in with employment, it has to be cross cutting because it isn't just in glorious isolation, yes there's access to food, there's resources, but it's also about how do we make and enrich family life in [field site location] as well as just feeding them"* (P1)

This emphasises how food insecurity is a complex issue, beyond food, sitting within the wider context of poverty. It highlights the importance of collaborating across sectors to find solutions and if it is to enrich family life, perhaps the voices of those with lived experience are essential. Indeed, some frontline workers expressed the idea of localised, community-led solutions *"I've kind of moved full circle, again, probably what we were doing five of six years ago, to locality-based work very much kind of in the heart of the community, but not like a token gesture, actually you know empowering people within the communities"* (P2). In similar vein another frontline worker suggested *"a community-led initiative, it would have to be something that they wanted, something they were happy to contribute towards"* (P3).

Opening community hubs during the pandemic provided a direct route to public health and wider local authority staff as community hubs used a multidisciplinary approach, facilitated by the re-deployment of local authority staff. Participants expressed how working on the frontline during the pandemic offered them greater insight into the possibilities of linking lived experience into public health policy:

"…working in the hubs at a local level and speaking to people with kind of lived experience compared to sitting in an office, and sometimes, I don't know, writing policies or whatever based on national guidance, like you think will it fit, is it the best for [field site location] population, some of these most vulnerable groups. It's showed me in terms of how this could be done very differently through the hubs in terms of more consultation" (P2)

At a more structural and national level, frontline workers called to abolish UC, deemed to be a key driver behind use of foodbanks. Reasons included the high number of mistakes on claims, five-week waits for payment, paying back advanced payments, sanctions, monthly payment, and a centralised system:

"Abolishing universal credit would be the best thing to do I think…we try to discourage people from taking an enormous advance payment …we do deal with people on legacy benefits as well and that's much, much easier because it's weekly. You don't have these long gaps with no money coming in and also we work in the same building as housing benefit" (P7)

"there's a lot of people who would come and the vast majority say its universal credit as to why they're there…it was the four to five week wait before you get paid, the way that it goes up and down if you've worked different hours and they claw it back, the sanctions because of like frivolous reasons… the length of sanctions can be 3 months sometimes when people have got nothing, not the means to eat, not the means to keep themselves clean, not the means to keep themselves warm, not the means to clothe themselves or the family, you know, so I'd say universal credit is a massive thing… It's not enough to live on" (P5)

9.7.2 Re-thinking access to food

Some mentioned the idea of creating *"a true cooperative"* (P5) in which people *"become a member and every year they get either a dividend or they get more shares in the place and so everybody is working for a common interest and they all have a share in it…you grow it [fruit and vegetables] and you produce it for the people here"* (P5). Like this was the idea of a *"social supermarket"* (P8), albeit this model does not offer members shares in the place over time. These food aid service models are perhaps more empowering to the member who has choice and a sense of autonomy as they are paying for goods compared to a food bank model, as *"if they're just constantly giving out food parcels to people, and there's no empowerment there, then we're not getting anywhere. There's got to be social justice, it is all about empowering and moving people*

on" (P8). Further for a frontline worker their *"hope is that the food banks don't go back to be as inaccessible and stigmatising as they were prior to the pandemic"* (P9).

Frontline workers shared other innovative ideas to help improve access to healthy food for families. This included a re-invention of the ice cream van whereby, *"a van would come and toot people to come a buy stuff [fruit and vegetables]"* (P5) thereby bringing produce directly to people living in more deprived areas or areas where supermarkets are sparse. Other ideas included implementing a subsidised version of a healthy food box delivery *"it needs to be a delivery service or a local authority version of what you and I can subscribe to, a healthy food box being delivered to the door, once a month with fresh food then like you have a menu a month"* (P4).

Indeed, there had already been a local authority pilot scheme of this during the pandemic *"a fresh box scheme, in terms of families, children who are eligible for free school meals are able to go online and request a fresh box, so I know one of the fresh boxes was a spaghetti Bolognese. you can how many in the family you wanted it for and there are clear instructions and utensils if needed, about how you would make it from scratch"* (P2).

At community-level participants felt that including more community-led lunch clubs within community centres could help mitigate the health and wellbeing impacts of food insecurity on families. Frontline workers had seen paying a nominal fee of *"something like two pound for a two course meal"* (P9) could help families access a warm, healthy balanced meal that they'd requested *"can we have spag bol and it was spag bol made from scratch, not made from a jar of sugar you know, or whatever, and so I always found that interesting and I knew that those people are asked for that kind of food they didn't eat that at home. You know that the ate poor food"* (P9).

This approach also provides opportunity for commensality thereby reducing social isolation and helping people build relationship with neighbours. Perhaps a next step for this approach to mitigating the health impacts of food insecurity is to involve younger generations in the cooking process *"I always thought it would be nice if one of the older women would take a younger woman in and you know show them and say right, this is, this is what we're cooking and this is how you cook it yeah. But then I did kind of hope that it might sort of happened by osmosis you know"* (P9). This approach moves away from simply teaching people how to cook, an intervention that risks increasing inequalities without considering the context of the situation of wider poverties.

9.8 Discussion

This qualitative study provides an insight into frontline workers experiences and perceptions of the emergency food aid landscape during a pandemic. A critical analysis of the data provided insight into the ways in which food aid services adapted to the pandemic thus exposing fragilities and raising questions about whether the emergency food aid model is 'fit' for purpose. The analysis revealed the wider poverties within which food insecurity lies, further limiting access to a healthy diet. Analysis also presented frontline worker's motivations for working on the frontline and ideas of potential next steps to mitigate food insecurity. I will now consider the analysis in relation to the wider research literature.

This study shows how the pandemic offered insight into the current emergency food aid system, shining a torchlight on its fragilities. In the spotlight was its food supply system which depended highly on food donations and volunteers. It was also strained by the UK's *'just in time'* supply chain, which influences food security [105]. However, the initial stages of COVID-19 saw the public buying more than usual, panic buying and stockpiling essential items leading to empty shelves in supermarkets. This behaviour led to concerns of ongoing shortages of essential products such as long-life milk, tinned vegetables, pasta, and rice, so these purchases later had limits placed on them [422]. The increased demand on food supply chains impacted food aid services with individual donations reducing. Hence, emergency food aid services faced the same concerns as the public, needing to purchase produce themselves within difficult circumstances [423]. In response, the Independent Food Aid Network (IFAN) issued a call for food banks to get supplies further up the supply chain to improve reliability [424]. This stockpiling approach to purchasing was only afforded to those able to bulk buy [425]. Chapter six presented experiences of food insecure women and the complex food management and shopping practices they use to ensure food security for their families. Unable to bulk buy, poor availability in shops would have forced these households to either go without or access food aid, further increasing the pressure on food aid services [425].

Another fragility is on the reliance of volunteers who were integral to the provision of food aid. In this study the availability of volunteers reduced during the pandemic. The pandemic required people over 70 years, and those with some underlying health conditions to shield, so it was not unexpected that volunteer numbers reduced given that they may fit this category [105]. The

Trussell Trust reported that around 51% of their volunteers are over 65 years [426]. Indeed, the need for shielding and self-isolation compounded the fragility. Volunteers offer a lot of unpaid labour in support of foodbanks, between 2016 and 2017 volunteering for 4,117,798 hours [427]. The national Trussell Trust food bank were able to bring forward the launch of their volunteering platform helping food banks advertise opening positions for new volunteers [426]. Although none of the food aid services in this study needed to close as a result during the pandemic, the same was not true across England where many smaller, independent emergency food aid services closed due to this fragility [428, 429]. To reduce pressure on food aid services the IFAN called for a cash first approach to the food aid crises believing that *"to protect public health and limit further transmission of the new strain of COVID-19, the government must reduce footfall to food banks by prioritising a 'cash first' approach to escalating hunger across the UK"* ([429] pg. 1). Since these interviews the pressure has only increased with food aid services warning government that they are *'close to breaking point'* as result of the ever increasing rises to cost of living post-pandemic and knock-on increased demand on food aid [430]. Resilience of smaller food aid services has been poor as they operate on limited funds and sources of donations ran dry during lockdown. Better placed were The Trussell Trust who are a larger organisation involved in corporate partnerships with major supermarkets who get income through events and social enterprise activities [104], although this is perhaps an example of creeping institutionalisation of food aid as supermarkets gained more power deciding who to distribute surplus food to.

Measures implemented to prevent the spread of COVID forced food aid services to rapidly adapt to larger-scale food delivery services. This research found that a delivery model helped frontline workers gain empathy for those they supported. It reinforced how geographically and practically difficult it can be for more deprived communities to access acceptable ways of shopping and sometimes even charitable food aid. As Anna Taylor, chief executive of the Food Foundation says, *"If you're in the poorest 20% of households you need to spend 42% of your disposable income after housing costs to afford the government's recommended diet. Compound this with transport costs to get to a food shop and a healthy meal is even further out of reach"* ([431] pg. 1). Accessing a food aid service may then also be out of reach; during the pandemic public transport was best avoided further limiting accessibility.

Food projects as a community response to poverty and hunger are not new [432, 433]. The difference between the situation today and previous responses is the increased and ongoing demand of emergency food from people and in the growing scale of food aid [103, 434]. In 2020-2021 7% of households experienced moderate or severe levels of food insecurity across the UK [85] but data from nationally representative surveys have found that since then food insecurity has increased with nearly 10% of adults and 4 million children experiencing food insecurity in September 2022 [135]. This was reflected by frontline workers in this study who described how *'things are changing'* with increasing prevalence, severity and an acceleration and diversification of need due to COVID. The wider literature proposes three main factors for this intensification of food poverty during the pandemic: new and growing challenges in accessing food, the impact of lockdown on the operation of food aid services (previously discussed) and loss or reduction in income [8]. Around 1.8 million people applied for welfare support through UC in the first 6 weeks of the pandemic [435]. Inequalities continue to show within sub-groups of the population who are at significantly higher risk of food insecurity than others [135]. This includes those on UC, people with disabilities, ethnic groups, and households with children [135].

Of particular interest for this doctoral research are households with children. Chapter seven which critically reviewed the nutritional health and wellbeing impacts of food insecurity amongst children, shows how schools play a role in alleviating food insecurity and hunger through providing FSM and facilitating food aid responses such as breakfast and holiday hunger programmes. School closures increased households' pressures on budgets, with only key worker's children able to go in. Government targeted low-income households whose children were eligible for FSM with a national supermarket voucher worth £15 per week per child [105]. Schools had to choose whether to continue with local arrangements distributing a packed lunch or food parcels to families or join the scheme and distribute an e-voucher. Reports described how 90% of state schools registered to use the scheme but delivery was patchy, with supermarkets accepting the vouchers scarce in more deprived areas [8, 436], whilst packed lunches were criticised for their nutritional content and value [437].

Frontline workers spoke of how, by accessing a food parcel, it frees up money for households to meet their wider needs. Food, the flexible part of the budget, is the first to bend for other pressing expenses such as internet bills for home schooling, gas, and electricity [375]. Thus, there was

recognition of the multiplicity of poverty. This points to the question of whether the solution is reliance on food aid. The underlying thread is that households lack financial security, and during times of unemployment or crises are not adequately supported by the social security system which is failing to prevent hunger and ensure adequate quality and quantity nutrition for all. Temporary support implemented during COVID to welfare was beneficial. Food insecurity in households on UC was 37% lower when the £20 uplift was in place compared to pre pandemic, pointing to the critical role this uplift had in supporting families [135]. However, removal of the £20 uplift alone makes families £1000 worse off each year, all within the context of increasing cost of living which will put families at greater risk of food insecurity [135].

Findings from this study support the wider literature that food aid services offer more than food [438, 439]. Pre-pandemic they provided an escape from isolation along with signposting to mental health, benefit, and debt support. Whilst this is true, lived experiences expose the *'hidden costs'* or adverse psycho-social impacts accessing free food can have on sense of self, autonomy, and dignity (see Chapter six). However, as section 6.6.1 described, the level of impact might vary depending on where along the scale of food aid the service lies. This study focused on emergency food provision. Provision within this scale moves from formal, objective, and restrictive services such as Trussell Trust food banks to informal, flexible and subjective services such as food co-operatives or mutual aid groups [103]. The latter aims for inclusivity with few restrictions on who can come (albeit targeted for low-income populations), what food people choose for their parcels and how often people can use the service[103]. Whilst the former has restrictions regarding distribution of vouchers and number of visits [103]. The broader argument remains that people should be able to access and choose their own food from normal consumer routes. Thus, academics', policy makers' and practitioners' focus on advocating for tackling the underlying determinants of health, reform of the social security system that currently fails to support people [440, 441] and the Human Right to Food [113, 114, 442, 443].

This study found that frontline workers still valued community level responses to improve access to healthy food for the people they supported. Both fresh box schemes and community-led lunches were a suggestion; whilst more dignified than emergency food aid and facilitating commensality they fail to tackle the underlying issue of financial insecurity. This research identified progressive possibilities for food aid centred on a vision of sustainability and improved access to healthy fresh

food. Food co-operatives could become *'true co-operatives'* in which members pay memberships for food that is locally sourced or grown in-house. Members have a share in the co-operative facilitating reciprocity and solidarity within community, making these sites a place of community and sociability. Like this is the idea of social supermarkets that primarily sell food surplus at heavily discounted prices. Various models exist some creating memberships, others open to the public [444]. It is argued that social supermarkets have the potential to overcome problems of food aid because they reach out to a wider population group and are grounded in a key ethos of community development and empowerment through enabling dietary choice and facilitating community cafes [445]. In the short term co-operatives and social supermarket models move away from traditional food banking to a more dignified approach reducing potential feelings of stigma and shame associated with food banking [444]. Yet, even more progressive would be negating re-distribution of surplus food.

Moving away from emergency food aid, frontline workers spoke about addressing the wider structures in relation to solutions to mitigate food insecurity. At a structural level there were calls for reforms to the social security system, specifically UC which frontline workers felt was inadequate and a driver of food aid need. Reports from the Trussell Trust who monitored the roll-out of UC found that pre-pandemic, UC contributed to increased food bank use [446]. Following the roll-out of UC, food bank use increased by 30% after 12 months and 48% after 24 months [446]. Although UC was not the only benefit that people at food banks were having issues with, it was a significant factor in many areas [446]. Supporting findings from this study, they found that the minimum five-week wait, and advanced payments led to acute hardship and reduction of household financial resilience. Several other qualitative studies [440, 447] found that UC adversely impacted claimants financial security driving them further into poverty and food insecurity. Thus, claimants experienced deteriorating mental and physical health, including adverse impacts on social and family lives and employment prospects. The mechanisms through which UC negatively impacted claimants mental health and long-term health conditions included managing the claims process, increased conditionality and threat of sanctions [440].

Strategically, an integrated food poverty action plan was felt the next step to exiting the food banking models and moving pre-existing community food aid networks forward. Sustainable Food Cities Programme, in association with Food Matters, the Soil Association and Sustain, is a project

that 50 localities are involved in [448]. It provides a strategic approach to tackling food insecurity and access to healthy food with local authorities, developing a Food Poverty Action Plan [448]. This approach represents a whole systems approach to tackling food insecurity. It identifies eight strategic areas to focus on including: establishing multi-agency partnerships to tackle the full range of issues that contribute to food poverty in a joined up strategic way, promoting living wage, providing advice, referring and supporting food access to those receiving social welfare, increasing understanding of food poverty issues amongst professionals dealing with those who face the issue, providing healthy weight services and initiatives, maximising provision and uptake of HSV, FSM, meals on wheels and lunch clubs, increasing the availability of healthy options and curbing the development of food deserts and swamps [449]. These areas recognise the complexity of the issue and the need for a partnership approach to coordinate a response within a shared vision.

As previously discussed, volunteers are an essential part of the emergency food aid system. Volunteering is *"unpaid labour provided in a structured way to entities or causes whom the worker has no 'formal' obligations"* ([450] pg. 249). Volunteers in this study were empathetic toward the hardships the families they supported, identifying the structural causes of underlying poverty. Often, they went above and beyond their role to support families. This is important because of the power they hold and discretion they can employ regarding eligibility. Even Trussell Trust food bank co-ordinators could employ some discretion to the number of parcels given or in decisions regarding who got access to travel subsidies. Although volunteers are unpaid, it was clear that they also gained something. This supports qualitative studies exploring the motivations of frontline workers to volunteer in the food aid system [451-453]. Other studies found that volunteering created an opportunity for personal beliefs and values such as social justice, increasing access to healthy food for low-income communities and reducing food waste to be enacted, with volunteers' part of these studies all displaying an altruistic nature of character [451, 452].

9.9 Chapter summary

Critical analysis presented in this chapter provides insights into frontline worker's perceptions of how the families they support experience food insecurity at this time. It seems that during the pandemic there was an acceleration and intensification of need for emergency food aid. People increasingly needed emergency assistance for prolonged periods of time, rather than for an *'emergency'*. Families with young children, mothers and pregnant women were the focus of

conversations, and they were a group of particular concern for participants as these households had more mouths to feed, faced changing circumstances and home schooling all within the context of an inadequate social security system. These findings indicate that the emergency food aid system may not be 'fit' for purpose, with concerns raised about the reliance on food donations, and the fragile sources of funding and volunteers to feed the people they support. Further, the sustainability and ethics of emergency food aid were questioned, as was the usability and dietary quality of the food available for redistribution. From the perspectives of those working with vulnerable groups the next steps to addressing food insecurity requires strategic thinking with changes at community, local and national level.

CHAPTER TEN

10 Chapter ten - Discussion chapter

10.1 Introduction

Research, policy and practice are paying greater attention to understanding the key drivers and health impacts of food insecurity and food aid use given their increasingly prevalent feature within our society. Their rise in society has occurred alongside austerity measures that were implemented in response to a global financial crisis, and in the UK, a radical welfare reform of its social security system. Thus, despite a longstanding history of food aid and poverty in the UK, the food aid landscape today is vastly different from the 11th to early 19th century (see chapter two) with food charity having since proliferated and formalised to national-scale level. This focus on food insecurity and food aid further increased with COVID-19 as it exposed inequalities in food access and between the least and most deprived communities. Against this backdrop, this thesis focused on the health impacts of food insecurity amongst women and children, a population group particularly vulnerable to experiencing food insecurity and its health impacts. The overarching aim that underpinned my research was:

- To explore food insecurity and its effect on health amongst women and children

In this chapter, I will bring together the key findings from my preceding empirical chapters (chapter four, six, seven and nine) drawing attention to the cross-cutting findings in relation to the overall thesis aim.

10.2 Summary of thesis contributions to the literature

This thesis adds to a growing body of qualitative literature that focuses on the lived experience of food insecurity amongst women and children within a European, HIC setting; particularly focussing on the UK. To the best of my knowledge, the systematic reviews and meta ethnographies presented in this thesis are the first to review data from across European HICs and post-2008 global financial crises amongst food insecure women and children. Chapter six identifies a gap in the literature regarding how pregnant women experience food insecurity and its health impact. It emphasises the need for greater recognition of the psychosocial impact of food insecurity as it relates to feelings of shame, embarrassment and reduced sense of autonomy. It suggests how, through a pathway of embodiment, food insecurity impacts women's health and wellbeing. In relation to children, chapter seven's synthesis highlights that food insecurity adversely impacts their physical, psychological, and social health and wellbeing, with children aware of their family's

limited resources, and most active in trying to help. Chapters six, seven and nine accentuate how inadequate income is a major driver of food insecurity, with chapter nine exploring how the pandemic led to an acceleration and intensification of need of emergency food aid. By using serial interviews with frontline workers, this research was able to examine the impact of the pandemic on the food aid landscape: how it impacted frontline workers and their services over time, for example, how they adapted to COVID protection measures, how they continued to access food, whether they were able to cope with increasing demand for food parcels and how they, as frontline workers, felt throughout. The analysis of empirical findings from this chapter demonstrate that the food aid system is not 'fit' for purpose with the pandemic exposing its fragilities, namely its food supply, reliance on volunteers and insecure funding, which undermine its sustainability and the ethics of food aid. Chapter nine proposes that the next steps to addressing food insecurity requires strategic thinking, indeed, the use of a researcher-in-residence model as applied and reflected upon in chapter four might enable scope for the development of a food poverty action plan.

10.3 Main findings

This section focusses on the cross-cutting themes across the different empirical chapters critically discussing three main findings from this thesis.

10.3.1 Food insecurity adversely impacts health

Concurrent with previous literature (chapter three), this thesis demonstrates that food insecurity adversely impacts health. This thesis finds that being food insecure in HICs deprives women and children of *healthy* food, consequently introducing a host of adverse health impacts for individuals and their familial and social relationships. Food is essential not only for physical and mental health but it is a social and cultural good vital for an individual's sense of self, family and social wellbeing [126]. Hence why it is concerning that this thesis finds a lack of change qualitatively for women and children's experiences compared to similar reviews conducted nearly two decades ago. This lack of improvement in women and children's experiences is concerning given the huge increase in numbers of people experiencing food insecurity and relying on food aid since 2008. One would expect that increased attention from multiple sectors of policy and practice would help improve the situation.

Food is essential to human life; we literally cannot live without it. The Government's Levelling Up White Paper [107] published in February 2022 announced a White Paper on health disparities.

Tackling inequalities in diet is essential for tackling health inequalities. Many aspects of the UK's diet are socio-economically patterned so that those living with fewer resources are more likely to consume less healthy diets [454]. This thesis found that amongst women and children food insecurity resulted in adverse changes to dietary quality and pattern. Poor diets like those described in this thesis, are well-recognised as determinants of non-communicable diseases, of morbidity and mortality [455]. The European region is the most affected by non-communicable diseases according to WHO [455]. Although this thesis did not directly link food insecurity and weight status through women and children's lived experiences, the analysis provided evidence of how food insecurity adversely impacts diet, a risk factor for overweight and obesity. Chapter six critically showed the complexity underlying how food insecurity impacts women's weight and physical health. It found that there are potentially numerous biological mechanisms involved in response to food shortage, evoking the nutritional consequences of food insecurity, including the substitution hypothesis, the cyclical nature of food insecurity, the IH, and potentially the stress pathway. Chapter seven analysed how infants feeding practices were adversely influenced. Whilst for children, in addition to the consumption of a poor-quality diet low in fruit, vegetables and variation, they were vulnerable to unhealthful nutritional practices raising concerns about their long-term physical health. The priority for parents, understandably, focussed on preventing hunger instead of promoting health. Further, chapter nine revealed the difficulties for families in accessing fresh fruit and vegetables, despite a desire for their consumption.

Understanding that numerous biological mechanisms are involved in response to food shortage can be useful when considering how to address food insecurity in social and public health policy. For example, with the insurance hypothesis (see section 3.7.3), ensuring regular access to food is imperative, as high body weight might be an adaptive biological response to episodic food insufficiency [184]. Therefore, women need to access an adequate income that ensures that they can afford to access sufficient healthy food, all the time. This requires an adequate living wage, and social security support. For children and young people, public health policies such as universal FSM and universal school breakfast clubs would be a step towards reducing episodic food insufficiency. The social and public health policies just mentioned would also help mitigate the cyclical nature of food insecurity, and reduce the stress experienced by women and children with food insecurity. Regarding the substitute hypothesis, where healthy foods are strategically substituted for lower cost, higher energy-dense foods (see section 3.7.1), there is a need to ensure

that all eligible women are accessing HSV. Chapter six identified HSV as being a lifeline to women because it gave them a nutritional safety net. Yet, across England the uptake of HSV is low [456]. In March 2022 alone, across England and Wales, 143,000 eligible families missed out on vouchers, and on average those with higher overall levels of deprivation had lower uptake [456]. A study conducted during the pandemic that aimed to increase the uptake on HSV in a London borough using a multi-pronged approach, found that there was a 22% increase in the number of families receiving HSV [457]. However, the number of families eligible during the pandemic increased at a faster rate (39%). Thus, further work is needed to publicise the Healthy Start scheme to eligible families, and to determine how effective this intervention has been. A few reasons for low uptake of HSV include a limited number of retailers accepting the vouchers, and lack of awareness by families and professionals who have contact with families of potential eligibility for HSV [457]. The alliance Sustain have called for an extension to the scheme, making all families in receipt of universal credit eligible for HSV so that a further 250,000 children can benefit as well as a £5 million campaign to increase awareness and uptake of the scheme [458].

What this thesis exposed was a myriad of socio-economic barriers to accessing sufficient, healthy food for women and children including, income, housing (specifically adequate and safe cooking facilities) and transport. No matter how well women managed their money, they were still unable to meet the socially accepted standard of food and eating practices. In this thesis, this meant that food insecurity was strongly linked to mental health. The meta ethnographies of existing qualitative literature demonstrated that the lived experience of food insecurity was all-consuming, anxiety inducing and involved feelings of shame, social stigma, isolation, and exclusion. Thus, there is a need for income-based solutions to the root cause of food insecurity so that women and children can access a nutritious, balanced diet to support their physical, mental, and social health and wellbeing.

10.3.2 Food is not the root problem of food insecurity

Crossley et al. [311] discuss the problem with the longstanding history of the categorisation of poverty. Previously, discourse categorised poverty into the deserving vs undeserving poor, the ragged and dangerous classes and most recently poverty is categorised into types like food, pension, child, period, bed poverty [311] (see chapter two). This fragmentation of poverty to focus on one symptom i.e., food, has knock-on implications for the response to the problem. Across

HICs [239, 459, 460] the voluntary charitable sector (VCS) has responded to food insecurity (or as it is frequently referred to in the UK, food poverty) by offering free food using different models of food aid. Yet, food aid is a fragmented response representing a partial fix. It helps people access food temporarily without addressing the underlying root causes of poverty. As McKenzie and McKay [375] point out, food is the most flexible part of the household budget, and this thesis has exposed that in a bid to pay essential household bills this part of the budget decreases. Chapters six and seven critically examined qualitative evidence on the impacts experienced by women and children, and found that they then seek food through formal and informal routes, including, as a last resort, food aid services. In this way, food is often presented as the problem, yet academic circles, amongst others, have been discussing taking a wider lens when it comes to food insecurity to expose the underlying structural issues; a lack of resources [311].

During the time of writing this research wider contextual factors beyond the 2008 financial crisis, pandemic and Brexit mentioned in chapters six, seven and nine have influenced the number of households and individuals affected by food insecurity. Events such as the invasion of Ukraine, and cost-of-living crisis due to fuel and food price increases have increased the prevalence of food insecurity, and its associated risk factors such as poverty [461]. A cost-of-living crisis means households face increased expenditure on commodities such as fuel, further restricting food budgets and making the heat or eat dilemma identified in chapter six more poignant. This is particularly true for households with children who are most vulnerable to experiencing severe food insecurity [135]. In the UK, the government announced an Energy Price Guarantee in September 2022. This capped energy bills to £2,500 per year starting in October 2022 through to 2024, and works alongside an additional £400 bill discount announced in July 2022 [462, 463]. However, this is still a £1000 increase in cost from the last winter's price cap of £1277. Russia's invasion of Ukraine since February 2022 is contributory factor to the cost of fuel because many HICs sanctioned Russia's energy imports and energy companies discontinued operations in Russia. To add to this, Russia and Ukraine are major exporters of corn, wheat, and sunflower oil. These commodities were previously cheap and highly accessible but are now more expensive [464, 465].

Discussing the UK context, Lambie-Mumford [115] explains how the rise of the VCS fits with the shifts in shape and nature of the welfare state since New Labour years in 1997-2010. Since those years, there has been an increase in the formalised roles of VCS in welfare services and increased

diversification, attributing to a more formalised and professionalised VCS. Ideology was based on the transfer of power to the individual and community, named *'The Big Society'* [321] (section 2.6). Lambie-Mumford [115] argues that food banks represent this re-shaped welfare state. UK Prime Minister from the Conservative party, David Cameron, even acknowledged that the work of food bank volunteers was *"part of the big society"* [466]. Chapters six and seven, which are set within the context of post-2008 global financial crises encompass these ideological shifts and evidence that the ongoing issue of food insecurity is not being addressed adequately at a national or local level. Rather, that the underlying issue is attributed to lack of sufficient income, suggesting socio-economic failures. For HICs, the affordability of food depends on adequate wages, income security and inclusive health and social policy [126]. Chapter six analysed women's narratives and portrayed their economic uncertainty, handled by constant juggling of household finances, maternal sacrifice to minimise the impact of food insecurity on their children, complex coping strategies, and dependency on support networks. Yet still they had to make decisions about whether to heat or eat. Whilst in chapter seven, the analysis argued how the lack of sufficient household income impacted access to food for children with families unable to afford to meet their children's dietary needs. It also argued that although FSM were helpful, they were not always sufficient in monetary value or quality to meet children's nutritional needs. Contextualising chapters six and seven's, findings were frontline workers accounts (chapter nine). They emphasised that lack of income was a key driver of food insecurity in the UK. A critical analysis of frontline worker's interviews also found how changes to the social security system, in particular the merging of six benefits in one – Universal Credit - was a key reason for families needing to use a food aid service. Issues were raised with the adequacy of the social security system and the design of the system that impacts how families experience the system day-to-day. The analysis revealed punitive measures and errors that further reduced overall income for households. I would argue that a successful social security system would help families get through times of crises whilst still being able to afford to feed themselves. Instead, as this thesis has reviewed, families accessing social security still need to lean on informal support networks and food aid services.

The work of Riches [442] is critical in exploring the idea that the intervention of civil society contributes to depoliticising food insecurity, transferring responses to charity and moving discussions away from addressing the root causes of the experience. Riches explains that food aid services *"allow us to believe the problem is being met and they deflect attention away from*

government and its legislated responsibilities" ([442] pg. 173). Food aid can also shape public consciousness by portraying the issue as one of charity rather than social policy [118]. This raises the question as to whether charity protects people from food insecurity or instead simply soothes the symptoms. This leads us on to the third main finding of this thesis.

10.3.3 The food aid system is not 'fit' for purpose

HICs within Europe, for the most part, experience food security at national level. Yet, at household and individual level, food insecurity is a common experience. Section 3.3 details the prevalence of food insecurity in the UK. Despite being some of the richest countries on earth, hunger and deprivation are major public health issues in the European context. It is now commonplace, and arguably socially acceptable, for charity organisations to feed waste or surplus food to millions of people who are unable to access food via *'normal'* consumer routes. During the early stages of the pandemic, the Trussell Trust experienced a 47% increase in need [10] and UNICEF announced for the first time in 70 years it would feed hungry children in the UK [467]. In Europe, FEBA reported around a 30% increase in demand across their 430 food banks in comparison to pre-COVID [468]. Despite feeding people, the emergency food aid system fails to protect people from food insecurity; rather it helps relieve symptoms of household and individual level food insecurity, but only up to a point. Chapter nine critically found that dependency on food aid was common with women and families accessing food co-operatives and mutual aid groups repeatedly due to ongoing need. This inability of food aid services to tackle the underlying causes of food insecurity is one reason why the food aid system is not 'fit' for purpose.

Another reason why the food aid system is not 'fit' for purpose is because it is failing to meet women and children's nutritional needs, instead evoking *'hidden costs'* [6]. der Horst et al. [317] describe a *'Dark Side'* of food banks illustrating the emergence of shame in relation to food bank experiences. One experience within a food bank where shame can emerge is with the contents of the food parcel. Chapter six's synthesis revealed a co-existence of women and mother's gratitude towards receiving food parcels and frustration at the misalignment of its content with personal nutritional needs and values. Hill and Gaines [469] explain that it is through our embodied experience of the products we consume, and in the knowing that some products are out of reach, that are social positioning is most strongly felt. Therefore, we should not underestimate the emotional effect of not being able to choose your own food and needing to access what is labelled

'food waste'. As Riches explains whilst discussing food within a social justice context, *"the right to food is not about charity and being fed but about the right for all to feed themselves with choice and dignity"* ([126] pg.12). These hidden, predominantly psychosocial costs to food aid raise questions over the role, acceptability, and sustainability of the emergency food aid system.

Provision of free food through charitable aid has a long history in the UK, although the scale, formalisation, and co-ordination of the services at national level today are unprecedented [321]. The growth of food banking in the last 14 years is set within the context of a global financial crisis, recession, austerity measures, welfare reforms a pandemic and Brexit. One of the key issues with this response is that in some instances, it has created a new form of conditionality alongside pre-existing means-tested, stigmatised social security [311]. As seen in chapter nine, the national foodbank requires that people accessing their service obtain a referral by a professional such as health visitor, children's centre, housing association or mental health teams. Further, they only provide a limited number of vouchers per household; three vouchers every six months to a year. This creates a blurred boundary between welfare and informal support [34]. Anarchist literature on mutual aid groups also suggests that food banks are indeed an extension of welfare state [470]. Yet, as Riches [443] says, food aid services are addressing an issue that government are not, whilst also providing nourishment to an under-nourished population group. However, Dowler et al. [113] emphasise that food insecurity should be a rights issue, with citizens being able to shop for their food like everyone else.

This leads on to a key policy debate concerning the role of government, third sector organisations and co-operations in addressing malnutrition and food poverty, and the right to food for already vulnerable groups. Chapter nine illustrated how various facets of the food aid system are fragile. When something catastrophic happens, like a pandemic, a domino effect highlights its weaknesses. These weaknesses show up in the system's food supply and reliance on donations, funding sources and the huge demands placed on frontline workers, without whom the system would fail to work. A reflexive analysis explored the emotional toll placed on frontline workers who sometimes cannot cope with the expectations placed on food aid system. This begs the question, is it just that those experiencing food insecurity must depend on a food aid system that is not 'fit' for purpose? Activist discourse on food poverty talks of food in relation to human rights and more broadly, social justice [6, 114, 143, 269, 442, 443, 471]. The human right to food was enshrined in Article 25 of the

Universal Declaration of Human Rights (ratified 1948) as part of the right to an adequate standard of living, which incorporates adequate food. Two key aspects are that (1) people should have sustainable access to adequate food, and (2) the state, as a duty bearer has the obligation to respect, protect, and fulfil the right to food. Yet, it is evident government is failing to meet its obligations, with responses remaining primarily downstream, driven by the community and voluntary aid sector, with minimal input from the state [113, 114, 472]. Indeed, chapter nine identified some frontline workers recommending downstream interventions to mitigate food insecurity. Pressure from media attention during the pandemic, with the help of Marcus Rashford – a footballer who described his personal childhood experience of food insecurity, helped increase the value of HSV and provide FSM during the summer holidays. Yet, aware of the situation, government still removed the £20 UC uplift introduced during the pandemic, that research shows was likely to have protected people on UC from food insecurity [473]. Most recently, in 2022, further pressure on government has led to them offering a one-off *'cost of living support'* payment to the most vulnerable households in the UK worth up to £650 [474]. However, this does not begin to tackle the underlying social determinants of health that determine food insecurity; the role of unstable employment, low living wages, reduced social security and rising food prices that all affect people's ability to afford sufficient healthy food.

10.4 Further reflections

10.4.1 Implications for conceptualising food insecurity

Chapter three introduced the concept of food insecurity and its four pillars - access, availability, utilisation, and stability. Meta ethnographic synthesis in chapters six and seven reveal the issues regarding access to food for food insecure women and children whose household food budgets were too tight to enable sufficient access to healthy food. Further, chapter nine explored how public health measures introduced at the start of the pandemic to curb the spread of COVID-19 were responsible for changes in household income due to job losses, furlough and reliance on benefits thus driving increased food insecurity. Critical analysis in chapter nine also reinforced that availability issues can be an underlying driver of food insecurity. Frontline workers spoke of how local shops in more deprived areas were poorly stocked with fresh, quality produce and were highly priced during the pandemic. Availability of food was further limited to families as public health measures recommended avoiding use of public transport. Turning to the pillar of utilisation, chapters six and seven argued that for those food insecure women and children living in temporary

accommodation their ability to store food in a safe way, properly prepare food or eat food in a *'normal'* way was limited. Narratives that unfolded spoke of keeping food in the bedroom, having limited access to a kitchen to store and prepare food or an inability to use the kitchen due to hostile conditions, thus eating meals on the bed. Chapters six and seven also argued that food received from food aid services was not always of high quality, in date or meeting nutritional needs. To be food secure requires that the three pillars of access, availability, and utilisation to be secured at the same time to ensure there is stability. Stability, the fourth pillar, was not found in the accounts of women, children, and frontline workers. The lack of stability was poignantly demonstrated in chapter nine. The pandemic exposed the insecurity of those three pillars. Critical analysis revealed how families accessing their services had insecure income, insecure availability of food, poor ability to utilise the food they received and often experienced food insecurity cyclically i.e., during the winter months or school holidays. Furthermore, this applied to food aid services themselves which had insecure access to food, poor availability of volunteers to prepare and distribute food and often limited capacity to store fresh produce. However, findings from this thesis have implications for how we think about food insecurity. Data from all three empirical chapters suggests there could be a fifth pillar *'social acceptability'*. Findings throughout this thesis have critiqued how lack of security around the four pillars have led to experiences of social exclusion, lack of agency, disempowerment, shame, and othering. Social acceptability refers to the ability to participate in acceptable food experiences – being able to buy food in *'normal'* consumer ways, being able to store, prepare, cook and eat food in *'normal'* ways, being able to participate in commensality [118]. Social acceptability thus is linked to social inclusion which involves full participation in society promoting health and wellbeing.

10.5 Strengths and limitations

There are several methodological strengths and limitations to the original research presented in this thesis. The following section will discuss these in relation to each empirical findings chapter.

10.5.1 Meta ethnographic syntheses

Chapter six and seven are the first to synthesise published studies from across European HICs on the impact of food insecurity on women and children's nutritional health and wellbeing. The meta ethnographies are the first to explore these experiences post-2008 global financial crises, a period which set poverty trajectories to increase, and food insecurity to worsen. The first strength of the

meta ethnographies are the rigorous gold standard methodologies used to develop the protocol (PRISMA-P) conduct the review (PRISMA) [475] and report the findings (e-MERGE Reporting Guidelines) [255]. Further, in recognising the limitations of database searches when retrieving qualitative literature, reference and citation screening was included as part of a comprehensive search strategy; seven of the included studies across both reviews were identified this way.

A second strength of meta-ethnographies is in the meta ethnographic approach to the synthesis of findings, driven by both participant experiences and third order author interpretations. This enabled development of a *'line of synthesis'* moving beyond the individual studies to *'more than the sum of its parts'* [476]. A common limitation associated with meta ethnographies, which also limits these reviews, is a reliance on the original study author's pre-selected participant quotes and interpretation of the data in published articles from which the review author generates a *'line of synthesis'* [254]. To try to keep my synthesis grounded in participant experiences, I have presented original quotes throughout the findings; however, this is still limited by the original authors pre-selections.

In chapter six a third strength is the use of a novel approach; using a member-checking workshop with women experiencing food insecurity. The aim was to broaden the perspectives on the results and see whether they reflected some of the lived experiences in North East England (see section 5.8.1 and section 6.6.1). A common issue that arises when working with the public, is a lack of consideration regarding potential power relationships. For this workshop a power dynamic existed between the group of women I was working with and myself. Thus, drawing on participatory approaches helped to promote equality to ensure everyone had an equal voice. It also helped to ensure the workshop enabled access to all women in this group for example, in terms of location, messaging, delivery of information, format of the workshop. A limitation of the workshop is that only one group of women in one area of Gateshead had the opportunity to participate in the research. Creating the opportunity to participate in workshops available across different areas of Gateshead would have been a more inclusive approach, and increased the likelihood of a more diverse range of women with lived experience of food insecurity [477].

A strength of chapter seven is the inclusion of children's own perspectives alongside caregivers. Indeed, no other systematic review, that I am aware of, focuses on the family unit's experiences including both caregivers and children's perspectives in its analysis. With respect to children and

young people, most health research has been based on parent's, caregivers, or stakeholders' views. A limitation of using their perceptions, rather than directly asking children, lies in the recognition that older children eat outside of the home and therefore parent's views might not have a true picture of their nutrition as discussed in section 3.6.2. However, it is important to consider the ethical complexities of doing research on poverty involving children and young people. Admitting to poverty is a sensitive issue, with many children and young people not perceiving themselves to be poor. It has been argued, in the context of poverty research amongst adults, that research can contribute to the disempowerment of 'the poor' [478]. Although, Lister [119] argues that involving people with experience of poverty serves to respect their rights and citizenship and ensure they are equal partners, with agency and active contribution. However, Lister [119] also points out that the shame associated with living in poverty can be difficult for children to bear, thus research needs to be conducted sensitively by the researcher to minimise potential harm to children and young people. Using a critical reflexive approach with this type of research could help ensure there is a framework in place for continuous evaluation of the dynamics between children and researchers, thus avoiding exploitation of children and young people [479]. Indeed, consent should be obtained from children and young people themselves, rather than only their caregivers [480].

These meta ethnographies have several limitations. Like other reviews, it is possible for them to be subject to publication bias, whereby studies are not published if they do not show clear or marked results [481]. I attempted to overcome this by directly contacting authors of relevant conference abstracts and searching theses databases; seven of the included studies were identified this way. A potential limitation of this review could have been that it did not include non-English language studies, no studies were excluded for this reason. In both meta ethnographies, only two studies used the USDA module to measure food insecurity, whilst many others used socioeconomic status and proxy measures. Whilst this might be a product of qualitative studies, not using a specific food insecurity measure is likely to prevent capturing all the experiences of food insecurity as it only accounts for those accessing a service, not necessarily those in need or who could not access the service.

An additional potential limitation (but also strength) of these reviews is the diverse range of included studies, from different European contexts, where contextual factors could impact the experiences of the women and children. It is important to recognise that different countries have

different welfare states, social security, food aid and health care systems [37]. The UK and the Republic of Ireland also operate within a liberal welfare regime. Welfare states within a liberal regime offer minimal social transfers with recipients often means-tested and stigmatised [37, 52]. This differs from The Netherlands which operates within a conservative regime that facilitates maintaining existing social patterns by providing earnings-related social transfers, administered through the employer [37, 52]. Meanwhile, Denmark and Norway operate within a social democratic regime where welfare states promote social equity of the highest standard through a redistributive social security system, meaning social transfers are generous and universal [37, 52]. Finally, Portugal, Spain and Greece operate within a Southern regime where welfare states are described as fragmented due to provision coming from numerous schemes, including reliance on family and voluntary sectors [52]. While this variation potentially limits the ability to draw meaningful conclusions from the studies, the diversity of included studies has enabled exploration of perspectives from a broad spectrum of women and children's experiences of food insecurity which has demonstrated common experiences from within and across the themes.

10.5.2 Interviews with frontline workers of the food aid system

A key strength of chapter nine was its attempt to use a qualitative longitudinal approach, an approach particularly useful at capturing and understanding social change [395] given that *time* enables change in experiences and perceptions to unfold. Using interviews at a single time-point would only capture frontline workers accounts of the issue that day. Whereas serial interviews can address questions like: what impact, if any, did ongoing public policy changes have on the food aid services and the families they worked with, and why? What changes, if any, did frontline workers experience during this time? Given that the research took place within a pandemic when rapid policy changes were unfolding, using a prospective design allowed me to work flexibly; using a longer lens I got a sense of how the system unravelled and captured the impact of the pandemic on food insecurity both during the time of crises and as we moved into stabilisation. Another benefit of serial interviews was that it provided an opportunity to review previous discussions with participants, and to clarify and follow-up on any points. It is possible that pre-existing relationships with some participants meant that they *'opened up'* more about their experiences during the interview.

Another strength of chapter nine lies in its use of multiple strategies for sampling which resulted in some heterogeneity of participants. Included were frontline workers from the health, social and third sector organisations who all played a role in the emergency food aid system and represented different models of emergency food aid including foodbanks, food co-operatives and mutual aid groups. Understanding food insecurity and the food aid landscape from a breadth of perspectives was important, which the multiple approaches to recruitment enabled. Braun and Clarke warn against only using the *'usual suspects'* ([394] pg. 58) in qualitative research. Thus, this empirical research used two different gatekeepers who helped facilitate recruitment in different ways, as well utilising my previous links with food aid services within Gateshead (see section 4.41), social media, and snowballing techniques. However, this approach to sampling does not detract from the fact that those who take part in research may be different from those who choose not to. They are likely to be confident in presenting their views, or keen to use the interview as a place to vent strong feelings, for example, the drivers of food insecurity. Consequently, those without strong views may be less forthcoming in taking part, despite multiple approaches to sampling.

A unique aspect of this study was that it was conducted exclusively during a pandemic a time when more households were experiencing food insecurity [135]. The extreme scenario of the pandemic, acted like a pressure cooker, heightening the vulnerabilities within the food aid system, exposed by the economic and social crisis associated with the pandemic and the backdrop of austerity policies in the UK, since 2010. Further, the study was conducted in the geographical context of North East England. As section 8.9 discusses the North East has the highest child poverty rates in England, making this study setting a strength of this research. However, within the limits of this thesis, it was not possible to study food aid services across the whole of England which were no doubt also impacted by the pandemic, thus it was not possible to indicate any meaningful geographical trends. I anticipate the experiences of frontline workers are likely to have varied between regions due to varying poverty rates across the country [482]. Further, emergency support delivered by local authorities in England is delivered differently depending on where you live. Thirty-five local authorities do not have emergency support systems in place, making it a post-code lottery of support depending on where you live [483]. That means 1 in 5 local authorities provide no access to crisis support [483]. This is likely to impact the level and severity of need placed on food aid services in those areas, thus perhaps shaping the experiences and perceptions of frontline workers working in the food aid landscape.

A limitation of this thesis is that this research is missing the first-hand accounts of women and children experiencing food insecurity. There is still a gap in the literature relating to women, pregnant women and children's voices. Although chapter six addresses this to some extent, my original PhD plan would have gained a deeper insight into the issues surrounding food insecurity and its impact on health in the first 1001 days (including women in the preconception and postnatal periods with children up to 2 years). Using an embedded approach in a food bank would have allowed for more targeted sampling and relationship building that other research methods such as interviews might not have been able to do. This thesis is also missing the voices of those who make and implement policy changes influencing food insecurity, and ultimately food aid demand. For example, the Department for Work and Pensions, Department for Education, Department of Health and Social Care, chief executives at local authorities and public health managers [484]. This thesis recognises that it doesn't portray their perspective, potentially missing an alternate viewpoint on the constraints and limits within which policies aimed at mitigating food insecurity are made and implemented. However, gaining organisational consent during a pandemic may have been difficult, and did not fit within the timeframe of this PhD. Additionally, this thesis is missing a strong voice from health professionals' who potentially are the first to notice food insecurity within the household and witness the health consequences of food insecurity. A broader spectrum of these views may have delved deeper into specific case examples, spoken to a greater extent of the first 1001 days and the biological mechanisms linking food insecurity and health. However, obtaining NHS ethics to access such views during a pandemic may have proved difficult, and been too time-intensive within the constraints of my PhD timeframe.

CHAPTER ELEVEN

11 Chapter eleven - Conclusion

11.1 Chapter overview

This final chapter presents policy and practice recommendations based on the findings of this thesis and proposes suggestions for future research in relation to food insecurity and health. Past and future dissemination plans for this research are discussed, and finally I will offer some final remarks.

11.2 Future research, policy and practice recommendations

My research identified that the food aid system is not 'fit' for purpose, and I propose that it could be made stronger by considering the *social acceptability* of women and children's food; the fifth pillar of food insecurity introduced in section 10.4.1. Thus, policy and practice need to consider how we heighten the opportunity for women and children to access, choose and consume food in *'normal'* ways and mitigate *'hidden costs'*. Policy needs to consider more collaborative working across local government and community to cascade key public policy messaging and link women up with practitioners who will provide appropriate support, when asked or required. For instance, developing partnerships so food aid services can raise issues, give insights, and suggest solutions around a range of aspects with a range of practitioners with different expertise. This could be regarding housing, ensuring women are accessing benefits they are entitled to, managing debt, or giving guidance to access vouchers as part of the Healthy Start scheme. Additionally, a researcher-in-residence approach may be beneficial in facilitating co-production of research and knowledge exchange to examine food aid services that are more *socially acceptable,* in that they include everyone and allow women and children to *choose* food. Thus, the food aid landscape may begin to shift towards more being more *socially acceptable.* Taken further, a researcher-in-residence model could help elucidate key stakeholders, priorities, and best approaches to implementing a food poverty action plan that integrates the community while advocating for autonomy and empowerment.

This doctoral research identified that food insecurity affects health, including physical, mental, and social health. It argued that there is need for a greater recognition of the psychosocial impacts of food insecurity on women and children. This is where policy could be strengthened; the English government should ensure a health in all policies approach is being applied. Applying a health in all policies means to systematically consider health in all its complexities including psychosocial

impacts, consequently seeking to avoid harmful health impacts and improve health equity [485]. In 2013, local authorities in England took on the responsibility of public health. Since, they have introduced a health in all policies approach, aiming to embed health policies in all departments and aspects of council decision-making [486]. Moreover, in the context of recovering from the pandemic and a cost-of-living crisis (that are creating further challenges to health and equity) there is a need to achieve health in all policies [486]. Frontline workers could apply a similar approach when considering the delivery of their service by considering the potential risks to health when considering a new policy.

My synthesis of published studies suggested that children were aware of their family's limited resources, with many active in trying to help. This indicates that there is potentially a need to actively involve children's perspectives in more research and policy. However, there should be careful consideration on the ethics of including children in research and policy on a sensitive subject such as food insecurity. Additionally, there is further scope to focus on children's experiences from minority ethnic communities, with children living in temporary accommodation, with caregivers of children in the first 1001 days of life, children living in different European HICs, and those from rural areas. This indicates that more European comparative studies are needed to understand the issues of food insecurity across different contexts. Another gap in the literature, identified by my systematic review, are studies focusing solely on food insecure pregnant women's experiences or in the first 1001 days. This indicates that more research is needed with women during pregnancy and in the post-natal period up to two years of age.

11.3 Dissemination of findings

Findings of this thesis have been presented at academic conferences, section 11.2.1. Knowledge mobilisation during the scoping phase of the project occurred in presentations at public health team meeting. Evidence from the research also contributed towards helping the 0-19 years team at Gateshead understand there was an issue for mothers with the new HSV scheme. Evidence was used towards a bid to get maternity services support, including information about HSV in food banks within Gateshead. We have also discussed practice implications from this research that have informed the recommendations in section 11.1. I am due to present a summary of thesis findings to the senior management team of the public health team at Gateshead Council in August 2022. Abstracts for chapter six and seven were presented at the The Lancet Public Health Conference

2022 and UK Congress on Obesity (UKCO) 2022, by oral and poster presentation. I'm currently awaiting a response to revisions for a manuscript regarding chapter six with PLOS One.

11.3.1 Conference proceedings

Bell, Z,. Scott, S,. Rankin, J., Bambra, C,. Heslehurst, N. 'Food insecurity and pregnancy in the first 1001 days'. Newcastle University Faculty of Medical Sciences, Reproduction, Development and Child Health with Nutrition, Exercise and Metabolism cross-theme seminar. March 2022

Bell, Z,. Gibson, E. 'Health inequalities research in early life and adolescence: a public health partnership approach'. Fuse Early Life and Adolescence Programme meeting. June 2021

Bell, Z,. Gibson, E. 'Obesity research in early life and adolescence: a public health partnership approach'. UK Congress on Obesity. September 2019

Bell, Z,. Rankin, J., Heslehurst, N., Bambra, C. 'Food insecurity in the age of austerity'. North East Obesity Forum. Gateshead Council. March 2019

11.3.2 Publications

Bell, Z,. Scott, S,. Visram, S., *et al.* 'Food insecurity and the nutritional health and well-being of women and children in high-income countries: protocol for a qualitative systematic review'. *BMJ Open*. August 2021 https://bmjopen.bmj.com/content/11/8/e048180

Bell, Z,. Fernandes, C,. Le, M.T. Food Security. In: Harkensee C, Olness K, Esmaili B.E. (eds) Child Refugee and Migrant Health. Springer, Cham. August 2021 https://doi.org/10.1007/978-3-030-74906-4_12

Simpson, J., Albani, V., **Bell, Z.,** Bambra, C., Brown, H., 'Effects of social security policy reforms on mental health and inequalities: A systematic review of observational studies in high-income countries'. *Social Science & Medicine*. March 2021 https://doi.org/10.1016/j.socscimed.2021.113717

11.4 Final remarks

This thesis aimed to develop an understanding of how food insecurity impacts health amongst women and children and explore the application of a researcher-in-residence model to facilitate knowledge exchange. Considering the increasing prevalence of food insecurity and food aid use since 2008, and not least within the context of the pandemic and increasing cost of living, this timely research identified a need for urgent public policy and public health action to mitigate the

health impacts of food insecurity for this and future generations. Engaging with qualitative methods, this thesis contributes to a small, but growing literature base from HICs in Europe highlighting the lack of progress made over the last decade in mitigating the experience of food insecurity for women and children. It provides insight into how food insecurity adversely impacts health through various pathways. This thesis also acknowledges that despites its focus on women and children, men who experience food insecurity may also face overlapping problems and health impacts or face different experiences. However, through combining serial interviews from frontline workers in the food aid systems perspective, this thesis strengthened the case that the food aid system upon which families are increasingly reliant, is fragile and not 'fit' for purpose. This thesis suggests that adopting a researcher-in-residence approach, particularly when modified to cope with the issue of dual affinity, may well be an appropriate methodology for future collaborative working with public health teams, facilitating co-production of research and knowledge exchange.

References

1. Food and Agriculture Organisation of the United Nations. Report of the World Food Summit. Rome. Italy; 1996.
2. Loopstra R, Reeves A, McKee M, Stuckler D. Food insecurity and social protection in Europe: Quasi-natural experiment of Europe's great recessions 2004–2012. Preventative Medicine. 2016;89:44-50.https://doi.org/10.1016/j.ypmed.2016.05.010.
3. World Health Organization. Healthy Diet. 2020. [cited 6 July 2022. Available from: https://www.who.int/news-room/fact-sheets/detail/healthy-diet]
4. Davis O, Geiger BB. Did Food Insecurity rise across Europe after the 2008 Crisis? An analysis across welfare regimes. Social Policy and Society. 2017;16(3):343-60.https://doi.org/10.1017/S1474746416000166.
5. Lambie-Mumford H, Green MA. Austerity, welfare reform and the rising use of food banks by children in England and Wales. Area. 2017;49(3):273-9.https://doi.org/10.1111/area.12233.
6. Purdam K, Garratt EA, Esmail A. Hungry? Food Insecurity, Social Stigma and Embarrassment in the UK. Sociology. 2015;50(6):1072-88.https://doi.org/10.1177/0038038515594092.
7. Bambra C, Riordan R, Ford J, Matthews F. The COVID-19 pandemic and health inequalities. Journal of Epidemiology and Community Health. 2020;74(11):964-68.http://dx.doi.org/10.1136/jech-2020-214401.
8. Loopstra R. Vulnerability to food insecurity since the COVID-19 lockdown. The Food Foundation. : Kings College London; 2020.
9. Van Lancker W, Parolin Z. COVID-19, school closures, and child poverty: a social crisis in the making. The Lancet Public Health. 2020;5(5):243-4.https://doi.org/10.1016/S2468-2667(20)30084-0.
10. The Trussell Trust. 2,600 food parcels provided for children every day in first six months of the pandemic. The Trussell Trust; 2020. [cited 7 June 2022. Available from: https://www.trusselltrust.org/2020/11/12/2600-food-parcels-provided-for-children-every-day-in-first-six-months-of-the-pandemic/]
11. Harrai D, Francis-Devine B, Bolton P, Keep M. Rising cost of living in the UK. House of Commons Library;2022. p. 1-45.
12. The Food Foundation. Breadline Voices. 2022. [cited 13 June 2022. Available from: https://foodfoundation.org.uk/initiatives/breadline-voices]
13. Annesley C, Himmelweit S. The Impact on Women of the Coalition Spending Review 2010. 2010
14. End Child Food Poverty. Let’s #EndChildFoodPoverty Together. 2022. [cited 6 July 2022. Available from: https://endchildfoodpoverty.org/]
15. Marmot M. Health Equity in England: The Marmot Review 10 Years On. The Health Foundation; 2020.
16. National Food Strategy. National Food Strategy: Independent Review: The Plan. 2021.
17. United Nations. Do you know all 17 SDGs?. [cited 13 June 2022. Available from: https://sdgs.un.org/goals]
18. Ivers LC, Cullen KA. Food insecurity: special considerations for women. Am J Clin Nutr. 2011;94(6):1740-4. https://doi.org/10.3945/ajcn.111.012617.
19. Bambra C, Albani V, Franklin P. COVID-19 and the gender health paradox. Scandinavian Journal of Public Health. 2020;49(1):17-26.https://doi.org/10.1177/1403494820975604.
20. Emslie C, Hunt K. The weaker sex? Exploring lay understandings of gender differences in life expectancy: a qualitative study. Social science & medicine (1982). 2008;67(5):808-16.doi: 10.1016/j.socscimed.2008.05.009.
21. Gorczyca AM, Sjaarda LA, Mitchell EM, Perkins NJ, Schliep KC, Wactawski-Wende J, et al. Changes in macronutrient, micronutrient, and food group intakes throughout the menstrual cycle in healthy, premenopausal women. Eur J Nutr. 2016;55(3):1181-8.doi: 10.1007/s00394-015-0931-0.

22. Kominiarek MA, Rajan P. Nutrition Recommendations in Pregnancy and Lactation. Med Clin North Am. 2016;100(6):1199-215.doi: 10.1016/j.mcna.2016.06.004.
23. Stephenson J, Heslehurst N, Hall J, Schoenaker DAJM, Hutchinson J, Cade JE, et al. Before the beginning: nutrition and lifestyle in the preconception period and its importance for future health. The Lancet. 2018;391(10132):1830-41.https://doi.org/10.1016/S0140-6736(18)30311-8.
24. Barker DJP. The origins of the developmental origins theory. Journal of Internal Medicine. 2007;261(5):412-7.https://doi.org/10.1111/j.1365-2796.2007.01809.x.
25. Laraia BA, Siega-Riz AM, Gundersen C. Household food insecurity is associated with self-reported pregravid weight status, gestational weight gain, and pregnancy complications. J Am Diet Assoc. 2010;110(5):692-701.doi: 10.1016/j.jada.2010.02.014.
26. Bird CE, Rieker PP. Gender matters: an integrated model for understanding men's and women's health. Soc Sci Med. 1999;48(6):745-55.doi: 10.1016/s0277-9536(98)00402-x.
27. European Commission, Directorate-General for Justice and Consumers. 2019 report on equality between women and men in the EU: Publications Office; 2019.
28. Slack P. The English poor law 1531-1782: Macmillan; 1990.
29. Dyer C. Poverty and its relief in late medieval England. Past & Present. 2012(216):41-78.http://www.jstor.org/stable/23360224.
30. UK Parliament. An Act for the Punishment of Vagabonds, and for Relief of the Poor and Impotent. UK Parliament 1572.
31. Bambra C. Health divides : where you live can kill you. Dawson B, editor: Bristol : Policy Press; 2016.
32. Glennerster H, Hills J, Piachaurd D, Webb J. One hundred years of poverty and policy. York: Joseph Rowntree Foundation; 2004.
33. Gorski P. The Myth of the 'Culture of Poverty'. Educational Leadership: Poverty and Learning. 2008;65(7):32-6
34. Garthwaite K. Stigma, shame and 'people like us': An ethnographic study of foodbank use in the UK. Journal of Poverty and Social Justice. 2016;24:277-89.https://doi.org/10.1332/175982716X14721954314922.
35. Garthwaite K. ‘The language of shirkers and scroungers?’ Talking about illness, disability and coalition welfare reform. Disability & Society. 2011;26(3):369-72.https://doi.org/10.1080/09687599.2011.560420.
36. Alcock P. Social Policy in Britain. UK: Palgrave Macmillan; 2008.
37. Bambra C. Going beyond *The three worlds of welfare capitalism*: regime theory and public health research. Journal of Epidemiology and Community Health. 2007;61(12):1098.http://dx.doi.org/10.1136/jech.2007.064295.
38. The 1848 Public Health Act [press release]. 1848.
39. Finch A. The provision of school meals since 1906: progress or a recipe for disaster? Institute of Historical Research. University of London; 2019. [cited 20 July 2022. Available from: https://www.historyandpolicy.org/policy-papers/papers/the-provision-of-school-meals-since-1906-progress-or-a-recipe-for-disaster]
40. MacLeavy J. A ‘new politics’ of austerity, workfare and gender? The UK coalition government's welfare reform proposals. Cambridge Journal of Regions, Economy and Society. 2011;4(3):355-67.https://doi.org/10.1093/cjres/rsr023.
41. Raleigh V. London: The King’s Fund. 2021. [cited 20 July 2022]. Available from: https://www.kingsfund.org.uk/publications/whats-happening-life-expectancy-england.
42. The National Archives. 1930s Depression and unemployment. The National Archives 2021 [
43. The Open University. The Beveridge Vision. The Open University; 2016 10 February 2016.
44. Dahlgren G, Whitehead M. What can be done about inequalities in health? The lancet. 1991;338(8774):1059-63
45. Beveridge W. Social Insurance and Allied Services. In: HMSO, editor: Government; 1942.

46. Timmins N. The five giants : a biography of the welfare state. 3rd ed. London: London : Harper Collins; 2001.
47. Dornan P. 60 years of the welfare state Poverty. 2008;130:7-16
48. Abel-Smith B, Townsend P. The Poor and the Poorest: G Bells & Sons; 1965.
49. Townsend P. Poverty in the United Kingdom: A Survey of Household Resources and Standards of Living Great Britain: Penguin; 1979.
50. Moreno L. The 'ages of welfare': why Europe's welfare states are at risk of terminal decline [Internet]: London School of Economics. 2015. [cited 27 April 2015. Available from: https://blogs.lse.ac.uk/europpblog/2015/04/27/the-ages-of-welfare-why-europes-welfare-states-are-at-risk-of-terminal-decline/].
51. BBC. 1957: Britons 'have never had it so good'. 1957. [cited 12 July 2022. Available from: http://news.bbc.co.uk/onthisday/hi/dates/stories/july/20/newsid_3728000/3728225.stm]
52. Eikemo TA, Bambra C. The welfare state: a glossary for public health. Journal of Epidemiology and Community Health. 2008;62(1):3-6.http://dx.doi.org/10.1136/jech.2007.066787.
53. Office for National Statistics. How has life expectancy changed over time? 2015. [cited 6 June 2022. Available from: https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/articles/howhaslifeexpectancychangedovertime/2015-09-09]
54. UK Government. Baroness Margaret Thatcher UK. Government; 2018. [cited 27 Nov 2018. Available from: https://www.gov.uk/government/history/past-prime-ministers/margaret-thatcher]
55. Jessop B. The Welfare State in Transition from Fordism to Post-Fordism, in The Politics of Flexibility: Restructuring State and Industry in Britain, Germany and Scandinavia. B. Jessop ea, editor. Aldershot: Edward Elgar; 1991.
56. Schrecker T, Bambra C. How politics makes us sick : neoliberal epidemics. Bambra C, editor. Hampshire: Palgrave Macmillan; 2015.
57. Springer S. Neoliberalization: states, networks, peoples. Journal of Economic Geography. 2009;9(1):143-5.10.1093/jeg/lbn032.
58. Bacon R, Eltis W. Britain's Economic Problem: Too Few Producers. The Economic Journal. 1977;87(345):153-5.10.2307/2231846.
59. HM Treasury. The Government's Expenditure Plans 1980-81. London: HMSO; 1979.
60. Monaghan A. UK recession in 1980: What was it like?. UK. The Telegraph; 2009 [27 November 2018. Available from: https://www.telegraph.co.uk/finance/recession/4323064/UK-recession-in-1980-What-was-it-like.html
61. Hills J. Thatcherism, New Labour and the Welfare State. In: Hills J, editor.: Centre for Analysis of Social Exclusion; 1998. p. 1-40.
62. Ward K, England K. Introduction: Reading Neoliberalization, in Neoliberalization: States, Networks, People. England K, Ward K, editors. Oxford: Blackwell; 2007.
63. Burgh L. Made in the USA: A Review of Workfare. London: Unemployment Unit 1987.
64. Gaskell E. North and South. England Chapman and Hall; 1854.
65. House of Commons. Hansard. Online Parliament of the United Kingdom; 1991.
66. BBC News. Business: The Economy - Governor tries to douse north's fire BBC News. 1998.
67. Townsend P, Davidson N, Black D, Whitehead M. Inequalities in health : the Black report. London: London : Penguin; 1988.
68. Wilkinson RG, Marmot MG. Social determinants of health. 2nd ed. Oxford: Oxford University Press; 2006.
69. The Lancet. Health inequality: the UK's biggest issue. The Lancet. 1997;349(9060):1185.https://doi.org/10.1016/S0140-6736(97)21017-2.
70. Gough I. Thatcherism and the welfare state: Britain is experiencing the most far-reaching experiment in 'new right' politics in the western world. Marxism Today. 1980:7-12
71. Hemerijck A. Changing Welfare States. Journal of Social Policy. 2013;42(4):858-60

72. O'Connell R, Brannen J. Families and Food in Hard Times: European Comparative Research: UCL Press; 2021. https://discovery.ucl.ac.uk/id/eprint/10127576/1/Families-and-Food-in-Hard-Times.pdf.
73. Acheson D. Independent inquiry into inequalities in health report. London: London : Stationery Office; 1998.
74. Bambra C, Smith KE, Garthwaite K, Joyce KE, Hunter DJ. A labour of Sisyphus? Public policy and health inequalities research from the Black and Acheson Reports to the Marmot Review. Journal of Epidemiology and Community Health (1979-). 2011;65(5):399-406
75. Robinson T, Brown H, Norman PD, Fraser LK, Barr B, Bambra C. The impact of New Labour's English health inequalities strategy on geographical inequalities in infant mortality: a time-trend analysis. J Epidemiol Community Health. 2019;73(6):564-8.http://dx.doi.org/10.1136/jech-2018-211679.
76. Rashid T, Bennett JE, Paciorek CJ, Doyle Y, Pearson-Stuttard J, Flaxman S, et al. Life expectancy and risk of death in 6791 communities in England from 2002 to 2019: high-resolution spatiotemporal analysis of civil registration data. The Lancet Public Health. 2021;6(11):805-16.https://doi.org/10.1016/S2468-2667(21)00205-X.
77. Suther H, Piachaud D. Reducing Child Poverty in Britain: An Assessment of Government Policy 1997–2001. The Economic Journal. 2001;111(469):85-101.https://doi.org/10.1111/1468-0297.00600.
78. Taylor-Robinson D, Lai ETC, Wickham S, Rose T, Norman P, Bambra C, et al. Assessing the impact of rising child poverty on the unprecedented rise in infant mortality in England, 2000–2017: time trend analysis. BMJ Open. 2019;9(10):e029424.doi: 10.1136/bmjopen-2019-029424.
79. Millar J. Lone Parents and the New Deal. Policy Studies. 2000;21(4):333-45.https://doi.org/10.1080/713691373.
80. Department for Work and Pensions. Lone Parent Obligations: an impact assessment UK Government; 2013.
81. Reeves A, Basu S, McKee M, Marmot M, Stuckler D. Austere or not? UK coalition government budgets and health inequalities. Journal of the Royal Society of Medicine. 2013;106(11):432-6.doi: 10.1177/0141076813501101.
82. Life on the Breadline Project. Austerity Timeline. Economic and Social Research Council; 2021
83. Boost to support disadvantaged families during the holidays [press release]. London: Department for Education2018.
84. United Nations. Report of the Special Rapporteur on extreme poverty and human rights on his visit to the United Kingdom of Great Britain and Northern Ireland. 2019.
85. Department for Work and Pensions. Family Reources Survey: Financial year 2020 to 2021 2022.
86. Browne J, Levell P. The distributional effect of tax and benefit reforms to be introduced between June 2010 and April 2014: A revised assessment. London: Institute for Fiscal Studies; 2010.
87. David Cameron. Full text of David Cameron Speech London2009 [cited 12 August 2021. Available from: https://www.theguardian.com/politics/2009/oct/08/david-cameron-speech-in-full]
88. Beatty C, Fothergill S. The local and regional impact of the UK's welfare reforms. Cambridge Journal of Regions, Economy and Society. 2014;7(1):63-79.https://doi.org/10.1093/cjres/rst035.
89. Local Government Funding Association. Local government funding: Moving the conversation on. 2018.
90. Hastings A, Bailey N, Bramley G, Gannon M, Watkins D. The cost of the cuts: the impact on local government and poorer communities. Joseph Rowntree Foundation; 2015.
91. Cherrie M, Curtis S, Baranyi G, Cunningham N, Dibben C, Bambra C, et al. A data linkage study of the effects of the Great Recession and austerity on antidepressant prescription usage. European Journal of Public Health. 2021;31(2):297-303.https://doi.org/10.1093/eurpub/ckaa253.
92. Akhter N, Bambra C, Mattheys K, Warren J, Kasim A. Inequalities in mental health and well-being in a time of austerity: Follow-up findings from the Stockton-on-Tees cohort study. SSM - Population Health. 2018;6:75-84.https://doi.org/10.1016/j.ssmph.2018.08.004.
93. Lewis S, Anderson D, Lyonette C, Payne N, Wood S. Work-life balance in times of recession, austerity and beyond: Routledge, Taylor & Francis Group; 2017.

94. Women's Budget Group. A Cumulative Gender Impact Assessment of Ten Years of Austerity Policies. London: Women's Budget Group; 2016.
95. Women's Budget Group. DWP data reveals: women and children continue to be worst affected by poverty. 2019. [cited 25 January 2021. Available from: https://wbg.org.uk/blog/dwp-data-reveals-women-continue-to-be-worst-affected-by-poverty/#:~:text=45%25%20of%20single%20parents%20%E2%80%93%20the,%25)%20are%20now%20in%20poverty.]
96. Women's Budget Group. Triple whammy: The impact of local government cuts on women. London: Women's Budget Group; 2019.
97. Women and Equalities Committee. Benefits and Social Security. Parliament; 2021.
98. Marmot M, Goldblatt P, Allen J, Boyce T, McNeish D, Grady M, et al. Fair Society, Healthy Lives. 2010.
99. May J, Williams A, Cloke P, Cherry L. Food banks and the production of scarcity. Transactions of the Institute of British Geographers. 2020;45(1):208-22.https://doi.org/10.1111/tran.12340.
100. Jenkins RH, Aliabadi S, Vamos EP, Taylor-Robinson D, Wickham S, Millett C, et al. The relationship between austerity and food insecurity in the UK: A systematic review. EClinicalMedicine. 2021;33:1-10.https://doi.org/10.1016/j.eclinm.2021.100781.
101. David Cameron. Big Society Speech. London: Cabinet Office; 2010.
102. Lambie-Mumford H, Crossley D, Jensen E, Verbeke M, Dowler E. Household food insecurity in the UK: A review of food aid. 2014.
103. Power M, Doherty BOB, Small N, Teasdale S, Pickett KE. All in it Together? Community Food Aid in a Multi-Ethnic Context. Journal of Social Policy. 2017;46(3):447-71.https://doi.org/10.1017/S0047279417000010.
104. Barker M, Russell J. Feeding the food insecure in Britain: learning from the 2020 COVID-19 crisis. Food Security. 2020;12(4):865-70.doi: 10.1007/s12571-020-01080-5.
105. Power M, Doherty B, Pybus K, Pickett K. How COVID-19 has exposed inequalities in the UK food system: The case of UK food and poverty. Emerald Open Research. 2020;2:11.doi:10.35241/emeraldopenres.13539.2.
106. Government creates new National Institute for Health Protection [press release]. England 2020.
107. Department for Levelling Up Housing and Communities. Levelling Up the United Kingdom. HM Government 2022.
108. Food and Agriculture Organisation. An Introduction to the Basic Concepts of Food Security. 2008.
109. Department for Environment Food and Rural Affairs. UK Food Security Report 2021. 2021.
110. Anderson SA. Core indicators of nutritional state for difficult-to-sample populations. The Journal of Nutrition. 1990;120(11):1555-660
111. Food and Agriculture Organisation. Voices of the hungry Rome. Food and Agriculture Organisation 2015 [Available from: http://www.fao.org/in-action/voices-of-the-hungry/en/#.XMxIG3KWyUk
112. Taylor A, Loopstra R. Too Poor to Eat - Food Insecuirty in the UK www.foodfoundation.org.uk: The Food Foundation 2016 May 2016. 12 Nov 2018.
113. Dowler E. Food and Poverty in Britain: Rights and Responsibilities. Social Policy & Administration. 2002;36(6):698-717.https://doi.org/10.1111/1467-9515.00312.
114. Dowler EA, O'Connor D. Rights-based approaches to addressing food poverty and food insecurity in Ireland and UK. Social Science & Medicine. 2012;74(1):44-51.https://doi.org/10.1016/j.socscimed.2011.08.036.
115. Lambie-Mumford H. Food poverty and food charity in the United Kingdom. Envisioning a future without food waste and food poverty: Wageningen Academic Publishers; 2015. p. 245-8.
116. O'Connor N, Farag K, Baines R. What is food poverty? A conceptual framework. British Food Journal. 2016;118(2):429-49.https://doi.org/10.1108/BFJ-06-2015-0222.

117. Taylor-Robinson D, Rougeaux E, Harrison D, Whitehead M, Barr B, Pearce A. The rise of food poverty in the UK. BMJ : British Medical Journal. 2013;347:7157.https://doi.org/10.1136/bmj.f7157.
118. Lambie-Mumford H. Hungry Britain : the rise of food charity: Bristol, UK : Policy Press; 2017.
119. Lister R. Poverty. Cambridge, UK: Malden, MA : Polity; 2004.
120. Townsend P. 'The Meaning of Poverty'. The British Journal of Sociology. 2010;(61):85-102.https://doi.org/10.1111/j.1468-4446.2009.01241.x.
121. Marx K. Karl Marx Selected Works. London: Laurence and Wishart 1946.
122. Gordon D, Pantazis C, Levitas R. 1999 Poverty and Social Exclusion Survey of Britain. Joseph Rowntree Foundation; 1999.
123. Mack J. Breadline Britain. England; 1990.
124. National Centre for Social Research. 2012 Poverty and Social Exclusion Survey of Britain. 2012.
125. 5th ed: Houghton Mifflin Harcourt Publishing Company; 2016. hunger (n.d.).
126. Riches G. Food Bank Nations: Poverty, Corporate Charity and the Right to Food. Oxon: Routledge; 2018.
127. Campbell CC. Food insecurity: a nutritional outcome or a predictor variable? J Nutr. 1991;121(3):408-15.10.1093/jn/121.3.408.
128. Ashby S, Kleve S, McKechnie R, Palermo C. Measurement of the dimensions of food insecurity in developed countries: A systematic literature review. Public Health Nutrition. 2016;19(16):2887-96.10.1017/S1368980016001166.
129. Kendall A, Olson CM, Frongillo EA, Jr. Validation of the Radimer/Cornell measures of hunger and food insecurity. J Nutr. 1995;125(11):2793-801.doi: 10.1093/jn/125.11.2793.
130. Kuyper EM, Espinosa-Hall G, Lamp CL, Martin AC, Metz DL, Smith D, et al. Development of a tool to assess past food insecurity of immigrant latino mothers. J Nutr Educ Behav. 2006;38(6):378-82.doi: 10.1016/j.jneb.2006.05.019.
131. US Department of Agriculture. Survey Tools 2021 [cited 21 January 2021. Available from: https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/survey-tools/#household]
132. Loopstra R. Interventions to address household food insecurity in high-income countries. Proc Nutr Soc. 2018;77(3):270-81.doi: 10.1017/S002966511800006X.
133. Lambie-Mumford H, Dowler E. Rising use of 'food aid' in the United Kingdom. British food journal (1966). 2014;116(9):1418-25.https://doi.org/10.1108/BFJ-06-2014-0207.
134. DWP launches national measurement of household food insecurity [press release]. 2019.
135. The Food Foundation. Food Insecurity Tracking 2022 [cited 4 May 2022. Available from: https://www.foodfoundation.org.uk/initiatives/food-insecurity-tracking]
136. Feeding Britain. Food and coping strategies during the COVID-19 pandemic. 2020.
137. The Trussell Trust. End of Year Stats 2022 [cited 6 June 2022. Available from: https://www.trusselltrust.org/news-and-blog/latest-stats/end-year-stats/]
138. European Food Banks Federation. Our Story n.d. [cited 14 June 2022. Available from: https://www.eurofoodbank.org/our-story/
139. Lambie-Mumford H, Silvasti T. The Rise of Food Charity in Europe: What is food charity in Europe? : ENUF; 2020.
140. de Armiño KP. Erosion of Rights, Uncritical Solidarity and Food Banks in Spain. In: Riches G, Silvasti T, editors. First World Hunger Revisited: Food Charity or the Right to Food? London: Palgrave Macmillan UK; 2014. p. 131-45.
141. Eurostat. 8.6% of people in the EU unable to afford proper meal 2022 [cited 7 June 2022. Available from: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220225-1#:~:text=In%202020%2C%208.6%25%20of%20the,vegetarian%20equivalent%20every%20second%20day.]
142. Riches G. Food Banks and Food Security: Welfare Reform, Human Rights and Social Policy. Lessons from Canada? Social Policy & Administration. 2002;36(6):648-63.https://doi.org/10.1111/1467-9515.00309.

143. Riches G. Food banks and the welfare crisis. Ottawa: Canadian Council on Social Development;; 1986.
144. Riches G. Responding to hunger in a wealthy society: Issues and options Journal of the Canadian Dietetic Association. 1989;50:150-4
145. Caraher M, Furey S. Introduction The economics of emergency food aid provision: A financial, social and cultural perspective: Palgrave Macmillan; 2018. p. 2-10.
146. Poppendick J. Sweet Charity?: Emergency Food and the End of Entitlement: Penguin Books 1999.
147. Jones NRV, Tong TYN, Monsivais P. Meeting UK dietary recommendations is associated with higher estimated consumer food costs: an analysis using the National Diet and Nutrition Survey and consumer expenditure data, 2008–2012. Public Health Nutrition. 2018;21(5):948-56.10.1017/S1368980017003275.
148. O'Connell R, Owen C, Padley M, Simon A, Brannen J. Which Types of Family are at Risk of Food Poverty in the UK? A Relative Deprivation Approach. Social Policy and Society. 2019;18(1):1-18.10.1017/S1474746418000015.
149. Butland B, Kopelman P, McPherson K, Thomas S, Mardell J, Parry V. Foresight: Tackling Obesities: Future Choices –Project Report. UK: Government Office for Science 2007.
150. Scott C, Sutherland J, Taylor A. Affordability of the UK's Eatwell Guide. The Food Foundation 2018.
151. Food and Agriculture Organisation of the United Nations. Influencing food environments for healthy diets. Rome, Italy; 2016.
152. Scottish Government. Relationship between food environment and planning system. 2018.
153. Chambers R, Longhurst R, Pacey A. Seasonal dimensions to rural poverty. Great Britain: Frances Pinter; 1981.
154. Machin RJ. Understanding holiday hunger. The journal of poverty and social justice. 2016;24(3):311-9.doi: 10.1332/175982716X14689202610267.
155. Bambra C. Work, worklessness, and the political economy of health. Oxford, New York: Oxford University Press; 2011.
156. Whitehead M, Dahlgren G. Concepts and principles for tackling social inequities in health: Levelling up Part 1. Denmark: World Health Organisation; 2007.
157. Marmot M. Closing the health gap. Scandinavian Journal of Public Health. 2017;45(7):723-31.doi: 10.1177/1403494817717433.
158. Pickett K, Wilkinson R. The spirit level : why equality is better for everyone. Pickett K, editor. London: Penguin; 2010.
159. World Health Organization. Closing the gap in a generation: health equity through action on the social determinants of health. Geneva: World Health Organization, Commission on Social Determinants of Health; 2008.
160. Public Health Scotland. Food poverty. 2021. [cited 15 July 2022. Available from: http://www.healthscotland.scot/health-inequalities/fundamental-causes/poverty/food-poverty]
161. Bambra C. Health inequalities and welfare state regimes: theoretical insights on a public health 'puzzle'. Journal of Epidemiology and Community Health. 2011;65(9):740.doi: 10.1136/jech.2011.136333.
162. Mackenbach JP. Can we reduce health inequalities? An analysis of the English strategy (1997-2010). J Epidemiol Community Health. 2011;65(7):568-75.doi: 10.1136/jech.2010.128280.
163. Marmot M, Wilkinson R. Ourselves and others—for better or worse: social vulnerability and inequality. Social Determinants of Health: Oxford University Press; 2005.
164. Herman DR, Taylor Baer M, Adams E, Cunningham-Sabo L, Duran N, Johnson DB, et al. Life Course Perspective: evidence for the role of nutrition. Matern Child Health J. 2014;18(2):450-61.doi: 10.1007/s10995-013-1280-3.

165. Black BP, Holditch-Davis D, Miles MS. Life course theory as a framework to examine becoming a mother of a medically fragile preterm infant. Research in Nursing & Health. 2009;32(1):38-49.https://doi.org/10.1002/nur.20298.
166. Devine CM. A life course perspective: understanding food choices in time, social location, and history. J Nutr Educ Behav. 2005;37(3):121-8.doi: 10.1016/s1499-4046(06)60266-2.
167. Hertzman C. The biological embedding of early experience and its effects on health in adulthood. Ann N Y Acad Sci. 1999;896:85-95.doi: 10.1111/j.1749-6632.1999.tb08107.x.
168. Attree P. A critical analysis of UK public health policies in relation to diet and nutrition in low-income households. Matern Child Nutr. 2006;2(2):67-78.https://doi.org/10.1111/j.1740-8709.2006.00055.x.
169. Attree P. Low-income mothers, nutrition and health: a systematic review of qualitative evidence. Matern Child Nutr. 2005;1(4):227-40.doi: 10.1111/j.1740-8709.2005.00022.x.
170. NIHR Cambridge Biomedical Research Centre. DAPA Measurement Toolkit. 2022. [cited 15 July 2022. Available from: https://dapa-toolkit.mrc.ac.uk/diet/subjective-methods/24-hour-dietary-recall]
171. Dinour LM, Bergen D, Yeh MC. The food insecurity-obesity paradox: a review of the literature and the role food stamps may play. J Am Diet Assoc. 2007;107(11):1952-61.https://doi.org/10.1016/j.jada.2007.08.006.
172. Moradi S, Mirzababaei A, Dadfarma A, Rezaei S, Mohammadi H, Jannat B, et al. Food insecurity and adult weight abnormality risk: a systematic review and meta-analysis. Eur J Nutr. 2019;58(1):45-61.doi: 10.1007/s00394-018-1819-6.
173. Food Standards Agency. The Low Income Diet and Nutrition Survey (LIDNS). 2007.
174. Yau A, White M, Hammond D, White C, Adams J. Socio-demographic characteristics, diet and health among food insecure UK adults: cross-sectional analysis of the International Food Policy Study. Public Health Nutrition. 2020;23(14):2602-14.doi: 10.1017/S1368980020000087.
175. Hanson KL, Connor LM. Food insecurity and dietary quality in US adults and children: a systematic review. Am J Clin Nutr. 2014;100(2):684-92.https://doi.org/10.3945/ajcn.114.084525.
176. Johnson CM, Sharkey JR, Lackey MJ, Adair LS, Aiello AE, Bowen SK, et al. Relationship of food insecurity to women's dietary outcomes: a systematic review. Nutr Rev. 2018;76(12):910-28.doi: 10.1093/nutrit/nuy042.
177. Nord M, Hanson K. Adult Caregiver Reports of Adolescents' Food Security Do Not Agree Well With Adolescents' Own Reports. Journal of Hunger & Environmental Nutrition. 2012;7(4):363-80.doi: 10.1080/19320248.2012.732926.
178. Fram MS, Frongillo EA, Jones SJ, Williams RC, Burke MP, DeLoach KP, et al. Children are aware of food insecurity and take responsibility for managing food resources. J Nutr. 2011;141(6):1114-9.doi: 10.3945/jn.110.135988.
179. Briefel RR, Sempos CT, McDowell MA, Chien S, Alaimo K. Dietary methods research in the third National Health and Nutrition Examination Survey: underreporting of energy intake. Am J Clin Nutr. 1997;65(4):1203-9.doi: 10.1093/ajcn/65.4.1203S.
180. Pilgrim A, Barker M, Jackson A, Ntani G, Crozier S, Inskip H, et al. Does living in a food insecure household impact on the diets and body composition of young children? Findings from the Southampton Women's Survey. J Epidemiol Community Health. 2012;66(6):1-6.doi: 10.1136/jech.2010.125476.
181. Yang TC, Sahota P, Pickett KE, Bryant M. Association of food security status with overweight and dietary intake: exploration of White British and Pakistani-origin families in the Born in Bradford cohort. Nutrition Journal. 2018;17(1):48.https://doi.org/10.1186/s12937-018-0349-7.
182. Dietz WH. Does Hunger Cause Obesity? Pediatrics. 1995;95(5):766-7.doi: 10.1542/peds.95.5.766.
183. Crawford PB, Webb KL. Unraveling the Paradox of Concurrent Food Insecurity and Obesity. American Journal of Preventive Medicine. 2011;40(2):274-5.doi: 10.1016/j.amepre.2010.11.003.
184. Nettle D, Andrews C, Bateson M. Food insecurity as a driver of obesity in humans: The insurance hypothesis. Behav Brain Sci. 2017;40:1-14.https://doi.org/10.1017/S0140525X16000947.

185. Larson NI, Story MT. Food insecurity and weight status among U.S. children and families: a review of the literature. Am J Prev Med. 2011;40(2):166-73.https://doi.org/10.1016/j.amepre.2010.10.028.
186. Franklin B, Jones A, Love D, Puckett S, Macklin J, White-Means S. Exploring mediators of food insecurity and obesity: a review of recent literature. J Community Health. 2012;37(1):253-64.https://doi.org/10.1007/s10900-011-9420-4.
187. Fleming TP, Watkins AJ, Velazquez MA, Mathers JC, Prentice AM, Stephenson J, et al. Origins of lifetime health around the time of conception: causes and consequences. The Lancet. 2018;391(10132):1842-52.doi: 10.1016/S0140-6736(18)30312-X.
188. Arzhang P, Ramezan M, Borazjani M, Jamshidi S, Bavani NG, Rahmanabadi A, et al. The association between food insecurity and gestational weight gain: A systematic review and meta-analysis. Appetite. 2022;176:106-24.https://doi.org/10.1016/j.appet.2022.106124.
189. Demétrio F, Teles CAS, Santos DBD, Pereira M. Food insecurity in pregnant women is associated with social determinants and nutritional outcomes: a systematic review and meta-analysis. Cien Saude Colet. 2020;25(7):2663-76.doi: 10.1590/1413-81232020257.24202018.
190. Simmonds M, Llewellyn A, Owen CG, Woolacott N. Predicting adult obesity from childhood obesity: a systematic review and meta-analysis. Obesity Reviews. 2016;17(2):95-107.https://doi.org/10.1111/obr.12334.
191. Thousand Days. Why 1,000 days. 2022. [cited 18 February 2022. Available from: https://thousanddays.org/why-1000-days/]
192. Speirs KE, Fiese BH. The Relationship Between Food Insecurity and BMI for Preschool Children. Matern Child Health J. 2016;20(4):925-33.doi: 10.1007/s10995-015-1881-0.
193. St. Pierre C, Ver Ploeg M, Dietz WH, Pryor S, Jakazi CS, Layman E, et al. Food Insecurity and Childhood Obesity: A Systematic Review. Pediatrics. 2022;150(1):e2021055571.https://doi.org/10.1542/peds.2021-055571.
194. Zhong D, Gunnar MR, Kelly AS, French S, Sherwood NE, Berge JM, et al. Household food insecurity and obesity risk in preschool-aged children: A three-year prospective study. Soc Sci Med. 2022;307:115176.doi: 10.1016/j.socscimed.2022.115176.
195. Basitosis PP, editor Validity of the self-reported food sufficiency status item in the US. American Council on Consumer Interests 38th Annual Conference; 1992; Columbia, MO Washington, DC: US Department of Agriculture.
196. Drewnowski A, Specter SE. Poverty and obesity: the role of energy density and energy costs. Am J Clin Nutr. 2004;79(1):6-16.https://doi.org/10.1093/ajcn/79.1.6.
197. Drewnowski A. Obesity and the food environment: dietary energy density and diet costs. Am J Prev Med. 2004;27(3 Suppl):154-62.https://doi.org/10.1016/j.amepre.2004.06.011.
198. Abelow B. Home grown hunger: A study of people who use emergency food shelves in Minnesota. MN: Minnesota Food Education and Resource Center; 1985.
199. Brewer M, Finch D, Tomlinson D. Universal Remedy: Ensuring Universal Credit is fit for purpos. UK: Resolution Foundation; 2017.
200. Groesz LM, McCoy S, Carl J, Saslow L, Stewart J, Adler N, et al. What is eating you? Stress and the drive to eat. Appetite. 2012;58(2):717-21.https://doi.org/10.1016/j.appet.2011.11.028.
201. Laraia BA. Food Insecurity and Chronic Disease. Advances in Nutrition. 2013;4(2):203-12.https://doi.org/10.3945/an.112.003277.
202. Ritchie SA, Connell JM. The link between abdominal obesity, metabolic syndrome and cardiovascular disease. Nutr Metab Cardiovasc Dis. 2007;17(4):319-26.doi: 10.1016/j.numecd.2006.07.005.
203. Hanson MA, Gluckman PD. Early developmental conditioning of later health and disease: physiology or pathophysiology? Physiol Rev. 2014;94(4):1027-76.doi: 10.1152/physrev.00029.2013.
204. Gluckman PD, Hanson MA, Buklijas T. A conceptual framework for the developmental origins of health and disease. J Dev Orig Health Dis. 2010;1(1):6-18.doi: 10.1017/s2040174409990171.

205. Hanson M. The birth and future health of DOHaD. Journal of Developmental Origins of Health and Disease. 2015;6(5):434-7.doi: 10.1017/S2040174415001129.
206. Morris ZS, Wooding S, Grant J. The answer is 17 years, what is the question: understanding time lags in translational research. Journal of the Royal Society of Medicine. 2011;104(12):510-20.doi: 10.1258/jrsm.2011.110180.
207. Marshall MN. Bridging the ivory towers and the swampy lowlands; increasing the impact of health services research on quality improvement. International Journal for Quality in Health Care. 2014;26(1):1-5.doi: 10.1093/intqhc/mzt076.
208. Rycroft-Malone J. The PARIHS framework--a framework for guiding the implementation of evidence-based practice. Journal of nursing care quality. 2004;19(4):297-304.doi: 10.1097/00001786-200410000-00002.
209. Barton WM. The interrelations of research and practice. Journal of the American Medical Association 1912;8:1120-123.doi:10.1001/jama.2012.464.
210. Anon. THE INTERRELATIONS OF RESEARCH AND PRACTICE. JAMA. 2012;307(15):1562-.10.1001/jama.2012.464.
211. Vindrola-Padros C, Pape T, Utley M, Fulop NJ. The role of embedded research in quality improvement: a narrative review. BMJ Quality & Safety. 2017;26(1):70-80.http://dx.doi.org/10.1136/bmjqs-2015-004877.
212. Bannister J, I H. Knowledge mobilisation and the social sciences: dancing with new partners in an age of austerity. Contemporary Social Science. 2013;8:167-75.https://doi.org/10.1080/21582041.2013.770910.
213. Marshall M, Eyre L, Lalani M, Khan S, Mann S, de Silva D, et al. Increasing the impact of health services research on service improvement: the researcher-in-residence model. Journal of the Royal Society of Medicine. 2016;109(6):220-5.doi: 10.1177/0141076816634318.
214. Swan J, Bresnen M, Newell S. The object of knowledge: the role of objects in biomedical innovation. . Human Relations. 2007;60(12):1809-37.https://doi.org/10.1177/0018726707084915.
215. Lomas J. Essay: Using ‘Linkage And Exchange’ To Move Research Into Policy At A Canadian Foundation. Health Affairs. 2000;19(3):236-40.doi: 10.1377/hlthaff.19.3.236.
216. Cheetham M, Wiseman A, Khazaeli B, Gibson E, Gray P, Van der Graaf P, et al. Embedded research: a promising way to create evidence-informed impact in public health? Journal of Public Health. 2018;40:64-70.https://doi.org/10.1093/pubmed/fdx125.
217. van der Graaf P, Forrest LF, Adams J, Shucksmith J, White M. How do public health professionals view and engage with research? A qualitative interview study and stakeholder workshop engaging public health professionals and researchers. BMC Public Health. 2017;17(1):892.doi: 10.1186/s12889-017-4896-1.
218. van Driel M, Maeseneer J. Evidence-based medicine versus evidence-based policy: Family medicine in the frontline. The European journal of general practice. 2004;9:122-3.10.3109/13814780309160419.
219. Kneale D, Rojas-García A, Thomas J. Obstacles and opportunities to using research evidence in local public health decision-making in England. Health Research Policy and Systems. 2019;17(1):61.doi: 10.1186/s12961-019-0446-x.
220. Greenhalgh T, Sietsewieringa S. Is it time to drop the 'knowledge translation' metaphor? A critical literature review Journal of the Royal Society of Medicine. 2011;104:501-9
221. van der Graaf P, Cheetham M, McCabe K, Rushmer R. Localising and tailoring research evidence helps public health decision making. Health information and libraries journal. 2018;35(3):202-12.doi: 10.1111/hir.12219.
222. Lewin K. Action research and minority problems. Journal of Social Issues. 1946;2:34-46.https://doi.org/10.1111/j.1540-4560.1946.tb02295.x.
223. Cornwall A, Jewkes R. What is participatory research? . Social Science and Medicine 1995;41:1667–676.https://doi.org/10.1016/0277-9536(95)00127-S.

224. McGinity R, Salokangas M. Introduction: 'embedded research' as an approach into academia for emerging researchers. Management in Education. 2014;28(1):3-5.doi: 10.1177/0892020613508863.
225. Cheetham M, Wiseman A, Gibson E, Khazaeli B, Graaf PVd, Rushmer R. 025 PP: "A fresh set of eyes?" Negotiating the realities of embedded research in public health. BMJ Open. 2017;7:bmjopen-2017-016492.43.10.1136/bmjopen-2017-016492.43.
226. Duggan JR. Critical friendship and critical orphanship: Embedded research of an English local authority initiative. Management in Education. 2014;28(1):12-8.doi: 10.1177/0892020613510118.
227. Vindrola-Padros C, Eyre L, Baxter H, Cramer H, George B, Wye L, et al. Addressing the challenges of knowledge co-production in quality improvement: learning from the implementation of the researcher-in residence model. BMJ Quality & Safety. 2019;28:67-73.http://dx.doi.org/10.1136/bmjqs-2017-007127.
228. Power M. Food Insecurity and Food Aid in 'Advanced' Neoliberalism: Interrogating the trajectory of neoliberalism through a study of food insecurity and food aid in contemporary Bradford. UK: University of York; 2017.
229. Hammersley M. Ethnography : principles in practice. 3rd ed.. ed. Atkinson P, editor. London: London : Routledge; 2007.
230. Ottrey E, Jong J, Porter J. Ethnography in Nutrition and Dietetics Research: A Systematic Review. Journal of the Academy of Nutrition and Dietetics. 2018;118(10):1903-42.https://doi.org/10.1016/j.jand.2018.06.002.
231. O'Reilly K. Key concepts in ethnography. London: London : Sage Publications Ltd.; 2008.
232. Wiersma W. Research methods in education : an introduction. 7th ed. Boston: Boston : Allyn and Bacon; 2000.
233. Madden R. Being ethnographic : a guide to the theory and practice of ethnography. 2nd ed: London : SAGE Publications Ltd; 2017.
234. Tumilowicz A, Neufeld LM, Pelto GH. Using ethnography in implementation research to improve nutrition interventions in populations. Maternal & Child Nutrition. 2015;11(S3):55-72.10.1111/mcn.12246.
235. Hammersley M. Ethnography: problems and prospects. Ethnography and Education. 2006;1(1):3-14.doi: 10.1080/17457820500512697.
236. Thompson C, Smith D, Cummins S. Understanding the health and wellbeing challenges of the food banking system: A qualitative study of food bank users, providers and referrers in London. Social Science & Medicine. 2018;211:95-101.https://doi.org/10.1016/j.socscimed.2018.05.030.
237. Garthwaite K. The perfect fit? Being both volunteer and ethnographer in a UK foodbank. Journal of Organizational Ethnography. 2016;5(1):60-71.doi: 10.1108/JOE-01-2015-0009.
238. Garthwaite K, Bambra C. "How the other half live": Lay perspectives on health inequalities in an age of austerity. Social Science & Medicine. 2017;187:268-75.https://doi.org/10.1016/j.socscimed.2017.05.021.
239. Garthwaite K, Collins PJ, Bambra C. Food for Thought: An Ethnographic Study of Negotiating Ill Health and Food Insecurity in a UK Foodbank. Social science & medicine (1982). 2015;132:38-44.https://doi.org/10.1016/j.socscimed.2015.03.019.
240. Lindolf TR, Taylor BC. Qualitative Communication Research Methods. 3rd Edition ed. SAGE, editor. CA.: Thousand Oaks; 2011.
241. Tinney J. Negotiating Boundaries and Roles: Challenges Faced by the Nursing Home Ethnographer. Journal of Contemporary Ethnography. 2008;37(2):202-25.doi: 10.1177/0891241607312487.
242. Hill O'Connor C, Baker R. Working with and for social enterprises: the role of the volunteer ethnographer. Social Enterprise Journal. 2017;13(02):180-93.https://doi.org/10.1108/SEJ-07-2016-0033.
243. Watts JH. "Emotion, empathy and exit: reflections on doing ethnographic qualitative research on sensitive topics". Medical Sociology Online. 2008;3(2):3-14

244. Eskandari F, Lake AA, Weeks G, Butler M. Twitter conversations about food poverty: an analysis supplemented with Google Trends analysis. The Lancet. 2019;394:S38.https://doi.org/10.1016/S0140-6736(19)32835-1.
245. Knight A, Brannen J, Connell R, Hamilton L. How do children and their families experience food poverty according to UK newspaper media? Journal of Poverty and Social Justice. 2018;26(2):207-23.doi: 10.1332/175982718X15200701225223.
246. Wells R, Caraher M. UK print media coverage of the food bank phenomenon: from food welfare to food charity? British Food Journal. 2014;116(9):1426-45.doi: 10.1108/BFJ-03-2014-0123.
247. McKendrick J, Sinclair S, Irwin A, O'Donnell H, Scott G, Dobbie L. The media, poverty and public opinion in the UK. UK: Joesph Rowntree Foundation 2008.
248. Campbell R, Pound P, Morgan M, Daker-White G, Britten N, Pill R, et al. Evaluating meta-ethnography: systematic analysis and synthesis of qualitative research. Health Technology Assessment 2011.
249. Sandelowski M, Docherty S, Emden C. Qualitative metasynthesis: Issues and techniques. Research in Nursing & Health. 1997;20(4):365-71.https://doi.org/10.1002/(SICI)1098-240X(199708)20:4.
250. Britten N, Campbell R, Pope C, Donovan J, Morgan M, Pill P. Using meta ethnography to synthesise qualitative research: a worked example. Journal of Health Services Research & Policy. 2002;7(4):209-15.10.1258/135581902320432732.
251. Flemming K, Noyes J. Qualitative Evidence Synthesis: Where Are We at? International Journal of Qualitative Methods. 2021;20.10.1177/1609406921993276.
252. Noblit G, Hare D. Meta-Ethnography: synthesising qualitative studies. Newbury Park: Sage Publications; 1988. Available from: https://methods.sagepub.com/book/meta-ethnography.
253. France EF, Uny I, Ring N, Turley RL, Maxwell M, Duncan EAS, et al. A methodological systematic review of meta-ethnography conduct to articulate the complex analytical phases. BMC Medical Research Methodology. 2019;19(1):35.https://doi.org/10.1186/s12874-019-0670-7.
254. Atkins S, Lewin S, Smith H, Engel M, Fretheim A, Volmink J. Conducting a meta-ethnography of qualitative literature: Lessons learnt. BMC Medical Research Methodology. 2008;8(1):21.https://doi.org/10.1186/1471-2288-8-21.
255. France EF, Cunningham M, Ring N, Uny I, Duncan EAS, Jepson RG, et al. Improving reporting of meta-ethnography: the eMERGe reporting guidance. BMC Medical Research Methodology. 2019;19(1):25.https://doi.org/10.1186/s12874-018-0600-0.
256. Malpass A, Shaw A, Sharp D, Walter F, Feder G, Ridd M, et al. "Medication career" or "Moral career"? The two sides of managing antidepressants: A meta-ethnography of patients' experience of antidepressants. Social Science & Medicine. 2009;68(1):154-68.https://doi.org/10.1016/j.socscimed.2008.09.068.
257. Campbell R, Pound P, Pope C, Britten N, Pill R, Morgan M, et al. Evaluating meta-ethnography: a synthesis of qualitative research on lay experiences of diabetes and diabetes care. Soc Sci Med. 2003;56(4):671-84.doi: 10.1016/s0277-9536(02)00064-3.
258. Attree P. Growing up in disadvantage: a systematic review of the qualitative evidence. Child: care, health and development. 2004;30(6):679-89.https://doi.org/10.1111/j.1365-2214.2004.00480.x.
259. Smith KE, Anderson R. Understanding lay perspectives on socioeconomic health inequalities in Britain: a meta-ethnography. Sociology of health & illness. 2018;40(1):146-70.10.1111/1467-9566.12629.
260. National Institute for Health Research. International prospective register of systematic reviews 2020 [cited 18 December 2019. Available from: https://www.crd.york.ac.uk/prospero/]
261. Methley AM, Campbell S, Chew-Graham C, McNally R, Cheraghi-Sohi S. PICO, PICOS and SPIDER: a comparison study of specificity and sensitivity in three search tools for qualitative systematic reviews. BMC Health Services Research. 2014;14(1):579.doi: 10.1186/s12913-014-0579-0.
262. Tacconelli E. Systematic reviews: CRD's guidance for undertaking reviews in health care. The Lancet Infectious Diseases. 2010;10(4):226.https://doi.org/10.1016/S1473-3099(10)70065-7.

263. Clarivate Analytics. EndNote X9.3.3 ed.
264. Institutue QCR. Rayyan QCRI. 2020.
265. Carroll C, Booth A. Quality assessment of qualitative evidence for systematic review and synthesis: Is it meaningful, and if so, how should it be performed? Research Synthesis Methods. 2015;6(2):149-54.https://doi.org/10.1002/jrsm.1128.
266. Higgins JPT, Altman DG, Gøtzsche PC, Jüni P, Moher D, Oxman AD, et al. The Cochrane Collaboration's tool for assessing risk of bias in randomised trials. BMJ. 2011;343:d5928.doi: 10.1136/bmj.d5928.
267. Popay J, Rogers A, Williams G. Rationale and standards for the systematic review of qualitative literature in health services research. Qual Health Res. 1998;8(3):341-51.doi: 10.1177/104973239800800305.
268. Dixon-Woods M, Booth A, Sutton AJ. Synthesizing qualitative research: a review of published reports. Qualitative Research. 2007;7(3):375-422.doi: 10.1177/1468794107078517.
269. Dixon-Woods M, Sutton A, Shaw R. Appraising qualitative research for inclusion in systematic reviews: a quantitative and qualitative comparison of three methods. Journal of Health Services Research & Policy. 2007;12(1):42-7.doi: 10.1258/135581907779497486.
270. Singh J. Critical Appraisal Skills Programme. CASP Appraisal Tools. Journal of Pharmacology and Pharmacotherapeutics. 2013;4:76.doi: 10.4103/0976-500X.107697.
271. Lucherini M, Hill S, Smith K. Inequalities, harm reduction and non-combustible nicotine products: a meta-ethnography of qualitative evidence. BMC Public Health. 2020;20(1):943.doi: 10.1186/s12889-020-09083-9.
272. Barbour RS, Barbour M. Evaluating and synthesizing qualitative research: the need to develop a distinctive approach. J Eval Clin Pract. 2003;9(2):179-86.https://doi.org/10.1046/j.1365-2753.2003.00371.x.
273. Toye F, Seers K, Allcock N, Briggs M, Carr E, Barker K. Meta-ethnography 25 years on: challenges and insights for synthesising a large number of qualitative studies. BMC Medical Research Methodology. 2014;14(1):80.10.1186/1471-2288-14-80.
274. QSR International. NVivo. 11 ed2020.
275. Birt L, Scott S, Cavers D, Campbell C, Walter F. Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation? Qual Health Res. 2016;26(13):1802-11.https://doi.org/10.1177/1049732316654870.
276. Turk A, Boylan A-M, Locock L. A Researcher's Guide to Patient and Public Involvement. Health Talk Oxford University 2017.
277. Kindon S, Pain R, Kesby M. Participatory action research approaches and methods. Connecting people, participation and place Abingdon: Routledge. 2007;260
278. Tomitsch M. Co-design Workshops. In: Tomitsch M, Borthwick M, Ahmadpour N, Cooper C, Frawley J, Hepburn L-A, et al., editors. Design Think Make Break Repeat : a handbook of methods. [Revised].. ed: Amsterdam : BIS Publishers; 2020. p. 40-1.
279. Tomitsch M. Personas. In: Tomitsch M, Borthwick M, Ahmadpour N, Cooper C, Frawley J, Hepburn L-A, et al., editors. Design Think Make Break Repeat : a handbook of methods. [Revised].. ed: Amsterdam : BIS Publishers; 2020. p. 100-1.
280. Lucas PJ, Jessiman T, Cameron A, Wiggins M, Hollingworth K, Austerberry C. Healthy Start Vouchers Study: The Views and Experiences of Parents, Professionals and Small Retailers in England. 2013. March 2021.
281. Ohly H. A realist investigation of the impact of Healthy Start on the diets of low-income pregnant women in the UK: University of Central Lancashire 2018.
282. Canton J. Coping with hard times: the role that support networks play for lone mother families in times of economic crisis and government austerity. Families, Relationships and Societies. 2018;7(1):23-8.https://doi.org/10.1332/204674316X14651146433919.
283. Dabrowski V. The Role of the State in Shaping Young Women's Experiences of Austerity: University of London; 2017.

284. Garthwaite K. Hunger pains: Policy Press; 2016.
285. Halligan J. Social (in)security. Exploring welfare reform, poverty and health in North East England: Newcastle University; 2019.
286. Harden J, Dickson A. Low-income mothers' food practices with young children: A qualitative longitudinal study. Health Education Journal. 2014;74(4):381-91.https://doi.org/10.1177/0017896914535378.
287. Jolly A. 'You Just Have to Work with What You've Got' Practitioner Research with Precarious Migrant Families. Practice. 2018;30(2):99-116.https://doi.org/10.1080/09503153.2017.1385756.
288. MacLeod MA. Understanding the rise of food aid and its implications for the welfare state: a study of Scotland and Finland: University of Glasgow 2018.
289. McFadden A, Green JM, Williams V, McLeish J, McCormick F, Fox-Rushby J, et al. Can food vouchers improve nutrition and reduce health inequalities in low-income mothers and young children: a multi-method evaluation of the experiences of beneficiaries and practitioners of the Healthy Start programme in England. BMC Public Health. 2014;14(1):148.https://doi.org/10.1186/1471-2458-14-148.
290. Mort L. Migrant families and their support networks: narratives of austerity: Manchester Metropolitan University; 2017.
291. Neter JE, Dijkstra SC, Nicolaou M, Visser M, Brouwer IA. The role of food parcel use on dietary intake: perception of Dutch food bank recipients - a focus group study. Public Health Nutrition. 2020;23(9):1647-56.https://doi.org/10.1017/S1368980019003823.
292. Nielsen A, Lund TB, Holm L. The Taste of 'the End of the Month', and How to Avoid It: Coping with Restrained Food Budgets in a Scandinavian Welfare State Context. Social Policy and Society. 2015;14(3):429-42.https://doi.org/10.1017/S1474746415000056.
293. Ohly H, Crossland N, Dykes F, Lowe N, Moran VH. A realist qualitative study to explore how low-income pregnant women use Healthy Start food vouchers. Matern Child Nutr. 2019;15(1):e12632.doi: 10.1111/mcn.12632.
294. Power M, Small N, Doherty B, Pickett KE. Hidden hunger? Experiences of food insecurity amongst Pakistani and white British women. Br Food J. 2018;120(11):2716-32.doi: 10.1108/BFJ-06-2018-0342.
295. Share M. Housing, food and dignity: the food worlds of homeless families in emergency accommodation in Ireland. Journal of Social Distress and the Homeless. 2019;29(2):137-50.https://doi.org/10.1080/10530789.2019.1677065.
296. Soriano-Rivera. Exploring the uneven effects of economic recession and austerity on lone mothers: A critical realist intersectional approach: Durham University; 2017.
297. Spellman C. In-Work Poverty in the UK: The Stories of Working Women Using Food Banks: Durham University; 2021.
298. Spencer SR. Practices of food and diet in an urban context: Robert Gordon University Aberdeen; 2015.
299. Stack RJ, Meredith A. The Impact of Financial Hardship on Single Parents: An Exploration of the Journey From Social Distress to Seeking Help. Journal of Family and Economic Issues. 2018;39(2):233-42.https://doi.org/10.1007/s10834-017-9551-6.
300. van der Velde LA, Schuilenburg LA, Thrivikraman JK, Numans ME, Kiefte-de Jong JC. Needs and perceptions regarding healthy eating among people at risk of food insecurity: a qualitative analysis. International Journal for Equity in Health. 2019;18(1):184.https://doi.org/10.1186/s12939-019-1077-0.
301. Mort L. Migrant families and their support networks: narratives of austerity: Manchester Metropolitan University; 2017.
302. O'Connell R, Brannen J. Families and Food in Hard Times: European Comparative Research UCL Press. 2021.
303. Soriano-Rivera SJ. Exploring the uneven effects of economic recession and austerity on lone mothers: A critical realist intersectional approach: Durham University; 2017.
304. Canton J. Coping with hard times: the role that support networks play for lone mother families in times of economic crisis and government austerity. Families, Relationships and Societies. 2018;7(1):23-8

305. World Health Organization. European Food and Nutrition Action Plan 2015–2020. World Health Organisation for Europe 2014.
306. National Health Service. 5 A Day: what counts?: Eat Well 2018 [cited 20 Jan 2021. Available from: https://www.nhs.uk/live-well/eat-well/5-a-day-what-counts/
307. Public Health England. Better Health: Let's do this. 2021 [cited 8 March 2021. Available from: https://www.nhs.uk/better-health/]
308. The Food Foundation. Dietary inequalities: Making the food system fairer. 2021 [cited 13 January 2021. Available from: https://foodfoundation.org.uk/initiatives/dietary-inequalities]
309. National Food Strategy. National Food Strategy: Independent Review: The Plan. UK; 2021.
310. Fell B, Hewstone M. Psychological perspectives on poverty. Joseph Rowntree Foundation 2015.
311. Crossley S, Garthwaite K, Patrick R. The fragmentation of poverty in the UK: what's the problem? A working paper. 2019
312. Thompson C, Siddiqui T, Losztyn K, Leese D, Wincup E, Embleton B. Take action now to narrow the gap between incomes and the cost of living [Internet]2022. [cited 14 March 2022. Available from: https://www.jrf.org.uk/blog/take-action-now-narrow-gap-between-incomes-and-cost-living].
313. Bambra C, Garthwaite K, Copeland A, Barr B. Chapter 12 - All in it together? Health, inequalities, austerity, and the 'Great Recession'. Health inequalities : critical perspectives: Oxford : Oxford University Press 2016. p. 164-72.
314. Lambie-Mumford H, Silvasti T. Introduction: Exploring the Growth of Food Charity Across Europe. In: Lambie-Mumford H, Silvasti T, editors. The Rise of Food Charity in Europe: Bristol University Press; 2020. p. 1-18.
315. Paige J. Iain Duncan Smith leaves Commons food banks debate early. The Independent 2013.
316. Chase E, Walker R. The Co-construction of Shame in the Context of Poverty: Beyond a Threat to the Social Bond. Sociology. 2012;47(4):739-54.https://doi.org/10.1177/0038038512453796.
317. van der Horst H, Pascucci S, Bol W. The "dark side" of food banks? Exploring emotional responses of food bank receivers in the Netherlands. British Food Journal. 2014;116(9):1506-20.https://doi.org/10.1108/BFJ-02-2014-0081.
318. Retzinger SM. Identifying shame and anger in discourse: PROD. The American Behavioral Scientist. 1995;38(8):1104.https://doi.org/10.1177/0002764295038008006.
319. de Berker AO, Rutledge RB, Mathys C, Marshall L, Cross GF, Dolan RJ, et al. Computations of uncertainty mediate acute stress responses in humans. Nature Communications. 2016;7(1):10996.doi: 10.1038/ncomms10996.
320. Grupe DW, Nitschke JB. Uncertainty and anticipation in anxiety: an integrated neurobiological and psychological perspective. Nat Rev Neurosci. 2013;14(7):488-501.doi: 10.1038/nrn3524.
321. Lambie-Mumford H. Food poverty and food charity in the United Kingdom. Envisioning a future without food waste and food poverty : societal challenges. Wageningen: Wageningen : Wageningen Academic Publishers; 2015. p. 247-58.
322. Laverty L. Managing food insecurity through informal networks of care: an ethnography of youth practices in the North of England. Sociology of Health & Illness. 2019;41(4):709-22.https://doi.org/10.1111/1467-9566.12847.
323. Boje TP. Welfare and work. The gendered organisation of work and care in different European Countries. European Review. 2007;15(3):373-95.doi: 10.1017/S1062798707000361.
324. Sung S, Smyth L. Gendered families: states and societies in transition. Contemporary Social Science. 2022;17(4):305-12.10.1080/21582041.2022.2091155.
325. Fischler C. Commensality, society and culture. Social Science Information. 2011;50(3-4):529.https://doi.org/10.1177/0539018411413963.
326. Boothby EJ, Clark MS, Bargh JA. Shared experiences are amplified. Psychological Science. 2014;25(12):2209-16.https://doi.org/10.1177/0956797614551162.
327. Woolley K, Fishbach A. A recipe for friendship: Similar food consumption promotes trust and cooperation. Journal of Consumer Psychology. 2017;27(1):1-10.https://doi.org/10.1016/j.jcps.2016.06.003.

328. Herman CP, Polivy J, Pliner P, Vartanian LR. Effects of Social Eating. In: Social Influences on Eating. Cham Springer; 2019.
329. Murcott A. Introducing the Sociology of Food & Eating Great Britain: Bloomsbury Publishing Plc; 2019.
330. Dunabr RI. Breaking bread: the functions of social eating. Adaptive Human Behavior and Physiology. 2017;3(3):198-211.https://doi.org/10.1007/s40750-017-0061-4.
331. Healy AE. Measuring food poverty in Ireland: The importance of including exclusion. Irish Journal of Sociology. 2019;27(2):105-27.https://doi.org/10.1177/0791603519828313.
332. Smith M, Harvey J. Social eating initiatives and the practices of commensality. Appetite. 2021;161:105107.https://doi.org/10.1016/j.appet.2021.105107.
333. Pfeiffer S, Ritter T, Hirseland A. Hunger and nutritional poverty in Germany: quantitative and qualitative empirical insights. Critical Public Health. 2011;21(4):417-28.doi: 10.1080/09581596.2011.619519.
334. Harrison J. The Foodbank Dilemma. The New Statesman. 2014 October 2014.
335. Van der Kolk BA. The body keeps the score : mind, brain and body in the transformation of trauma: London, UK : Penguin Books; 2015.
336. Krieger N. Ecosocial theory, embodied truths, and the people's health: New York, NY : Oxford University Press; 2021.
337. Krieger N. Embodiment: a conceptual glossary for epidemiology. Journal of epidemiology and community health. 2005;59(5):350-5.http://dx.doi.org/10.1136/jech.2004.024562.
338. Arenas DJ, Thomas A, Wang J, DeLisser HM. A Systematic Review and Meta-analysis of Depression, Anxiety, and Sleep Disorders in US Adults with Food Insecurity. J Gen Intern Med. 2019;34(12):2874-82.https://doi.org/10.1007/s11606-019-05202-4.
339. Cooper CB, Neufeld EV, Dolezal BA, Martin JL. Sleep deprivation and obesity in adults: a brief narrative review. BMJ Open Sport & amp; Exercise Medicine. 2018;4(1):e000392.http://dx.doi.org/10.1136/bmjsem-2018-000392.
340. Guarino D, Nannipieri M, Iervasi G, Taddei S, Bruno RM. The Role of the Autonomic Nervous System in the Pathophysiology of Obesity. Frontiers in physiology. 2017;8:665-.https://doi.org/10.3389/fphys.2017.00665.
341. Aggarwal A, Monsivais P, Cook AJ, Drewnowski A. Does diet cost mediate the relation between socioeconomic position and diet quality? Eur J Clin Nutr. 2011;65(9):1059-66.doi: 10.1038/ejcn.2011.72.
342. Moraes C, McEachern MG, Gibbons A, Scullion L. Understanding Lived Experiences of Food Insecurity through a Paraliminality Lens. Sociology. 2021;55(6):1169-90.https://doi.org/10.1177/00380385211003450.
343. Henjum S, Morseth MS, Arnold CD, Mauno D, Terragni L. "I worry if I will have food tomorrow": a study on food insecurity among asylum seekers living in Norway. BMC Public Health. 2019;19(1):592.https://doi.org/10.1186/s12889-019-6827-9.
344. Campbell M, Thomson H, Fenton C, Gibson M. Lone parents, health, wellbeing and welfare to work: A systematic review of qualitative studies. BMC public health. 2016;16(1):188-.https://doi.org/10.1186/s12889-016-2880-9.
345. Coleman N, Riley T. Lone Parent Obligations: Following lone parents' journeys from benefits to work. Department for Work and Pensions, ; 2012.
346. Hayter AKM, Draper AK, Ohly HR, Rees GA, Pettinger C, McGlone P, et al. A qualitative study exploring parental accounts of feeding pre-school children in two low-income populations in the UK. Matern Child Nutr. 2015;11(3):371-84.https://doi.org/10.1111/mcn.12017.
347. Lovelace S, Rabiee-Khan F. Food choices made by low-income households when feeding their pre-school children: a qualitative study. Matern Child Nutr. 2015;11(4):870-81.dpo: 10.1111/mcn.12028.
348. Condon LJ, McClean S. Maintaining pre-school children's health and wellbeing in the UK: a qualitative study of the views of migrant parents. Journal of Public Health. 2017;39(3):455-63.doi: 10.1093/pubmed/fdw083.

349. Zamora-Sarabia A, Guterman R, Sanz B, Rico A, Otero-García L. Child health and the possibilities for childcare in a context of poverty and food insecurity: The narratives of parents attending a self-managed foodbank in Spain. Health & Social Care in the Community. 2019;27.10.1111/hsc.12712.
350. Power M, Pybus K, Pickett K, Doherty B. The reality is that on Universal Credit I cannot provide the recommended amount of fresh fruit and vegetables per day for my children?: Moving from a behavioural to a systemic understanding of food practices. Emerald Open Research. 2021;3(3).doi: 10.35241/emeraldopenres.14062.1.
351. Hall S, Knibbs S, Medien K, Davies G. Child Hunger in London: Understanding food poverty in the capital. London: Social Research Institute; 2013.
352. Hall S, Perry C. Family Matter: Understanding families in an age of Austerity. London: Social Research Institute; 2013.
353. Dalma A, Kastorini CM, Zota D, Veloudaki A, Petralias A, Yannakoulia M, et al. Perceptions of parents and children, participating in a school-based feeding programme in disadvantaged areas in Greece: a qualitative study. Child: care, health and development. 2016;42(2):267-77.doi: 10.1111/cch.12315.
354. Fairbrother H, Curtis P, Goyder E. Children's understanding of family financial resources and their impact on eating healthily. Health Soc Care Community. 2012;20(5):528-36.doi: 10.1111/j.1365-2524.2012.01070.x.
355. Harvey K. "When I go to bed hungry and sleep, I'm not hungry": Children and parents' experiences of food insecurity. Appetite. 2016;99:235-44.https://doi.org/10.1016/j.appet.2016.01.004.
356. Attree P. The Social Costs of Child Poverty: A Systematic Review of the Qualitative Evidence. Children & Society. 2006;20(1):54-66.https://doi.org/10.1002/CHI.854.
357. Ridge T. Living with poverty: A review of the literature on children’s and families’ experiences of poverty. Department for Work and Pensions 2009 2011/01/01. Report No.: 594 2020/12/17.
358. Wills W, Backett-Milburn K, Roberts M-L, Lawton J. The framing of social class distinctions through family food and eating practices. The Sociological Review. 2011;59(4):725-40.https://doi.org/10.1111/j.1467-954X.2011.02035.x.
359. Mason J, Hood S. Exploring issues of children as actors in social research. Children and Youth Services Review. 2011;33(4):490-5.https://doi.org/10.1016/j.childyouth.2010.05.011.
360. Fram MS, Frongillo EA, Jones SJ, Williams RC, Burke MP, DeLoach KP, et al. Children are aware of food insecurity and take responsibility for managing food resources. 2011;141:1114-9
361. National Health Service. Drinks and cups for babies and young children 2018 [cited 21 February 2022. Available from: https://www.nhs.uk/conditions/baby/weaning-and-feeding/drinks-and-cups-for-babies-and-young-children/#:~:text=Cows'%20milk%20can%20be%20used,iron%20to%20meet%20babies'%20needs.
362. Skinner JD, Carruth BR, Wendy B, Ziegler PJ. Children's food preferences: a longitudinal analysis. J Am Diet Assoc. 2002;102(11):1638-47.doi: 10.1016/s0002-8223(02)90349-4.
363. Mennella JA. Ontogeny of taste preferences: basic biology and implications for health. Am J Clin Nutr. 2014;99(3):704s-11s.doi: 10.3945/ajcn.113.067694.
364. Forestell CA, Mennella JA. Early determinants of fruit and vegetable acceptance. Pediatrics. 2007;120(6):1247-54.doi: 10.1542/peds.2007-0858.
365. Mennella JA, Beauchamp GK. Mothers' milk enhances the acceptance of cereal during weaning. Pediatr Res. 1997;41(2):188-92.doi: 10.1203/00006450-199702000-00006.
366. UNICEF. The Provision of Infant Formula at Food Banks 2020.
367. Cooksey-Stowers K, Schwartz MB, Brownell KD. Food Swamps Predict Obesity Rates Better Than Food Deserts in the United States. Int J Environ Res Public Health. 2017;14(11).doi: 10.3390/ijerph14111366.
368. Craigie AM, Lake AA, Kelly SA, Adamson AJ, Mathers JC. Tracking of obesity-related behaviours from childhood to adulthood: A systematic review. Maturitas. 2011;70(3):266-84.https://doi.org/10.1016/j.maturitas.2011.08.005.

369. Hazzard VM, Loth KA, Hooper L, Becker CB. Food Insecurity and Eating Disorders: a Review of Emerging Evidence. Current Psychiatry Reports. 2020;22(12):74.doi: 10.1007/s11920-020-01200-0.
370. Siddiqui F, Salam RA, Lassi ZS, Das JK. The Intertwined Relationship Between Malnutrition and Poverty. Frontiers in Public Health. 2020;8.doi: 10.3389/fpubh.2020.00453.
371. Ridge T. The Everyday Costs of Poverty in Childhood: A Review of Qualitative Research Exploring the Lives and Experiences of Low-Income Children in the UK. Children & Society. 2011;25(1):73-84.https://doi.org/10.1111/j.1099-0860.2010.00345.x.
372. Oldroyd L, Eskandari F, Pratt C, A. L. The Nutritional Quality of Food Parcels Provided by Foodbanks and the Effectiveness of Foodbanks at Reducing Food Insecurity in Developed Countries: A Mixed-Method Systematic Review. Journal of Human Nutrition and Dietetics. 2022:1-28.https://doi.org/10.1111/jhn.12994.
373. Chang K. Universal Infant Free School Meals in England: Uptake and outcomes. 2021.
374. Vik FN, Van Lippevelde W, Øverby NC. Free school meals as an approach to reduce health inequalities among 10–12- year-old Norwegian children. BMC Public Health. 2019;19(1):951.https://doi.org/10.1186/s12889-019-7286-z.
375. McKenzie HJ, McKay FH. Food as a discretionary item: the impact of welfare payment changes on low-income single mother's food choices and strategies. Journal of Poverty and Social Justice. 2017;25(1):35-48.doi: 10.1332/175982716X14822521840954.
376. Leung CW, Stewart AL, Portela-Parra ET, Adler NE, Laraia BA, Epel ES. Understanding the Psychological Distress of Food Insecurity: A Qualitative Study of Children's Experiences and Related Coping Strategies. Journal of the Academy of Nutrition and Dietetics. 2020;120(3):395-403.doi: 10.1016/j.jand.2019.10.012.
377. Evans LD, Kouros C, Frankel SA, McCauley E, Diamond GS, Schloredt KA, et al. Longitudinal relations between stress and depressive symptoms in youth: coping as a mediator. J Abnorm Child Psychol. 2015;43(2):355-68.doi: 10.1007/s10802-014-9906-5.
378. Morrow V, editor Networks and neighbourhoods: children's and young people's perspectives. 2001.
379. Hall M, Stephen L. Quality childcare for all New Economics Foundation; 2020.
380. Abbots E-J, Lavis A, Attala L. Careful Eating: Bodies, Food and Care: Bodies, Food and Care 1ed: Routledge; 2015.
381. Tronto JC. An Ethic of Care. Moral Boundaries: A Political Argument for an Ethic of Care 1ed: Routledge; 1993.
382. Bryman A. Social research methods. Fifth ed: Oxford, United Kingdom : Oxford University Press; 2016.
383. Duncan EAS, Nicol MM. Subtle Realism and Occupational Therapy: An Alternative Approach to Knowledge Generation and Evaluation. British Journal of Occupational Therapy. 2004;67(10):453-6.doi: 10.1177/030802260406701006.
384. Guba EG, Lincoln YS. Competing paradigms in qualitative research. Handbook of qualitative research. Thousand Oaks, CA, US: Sage Publications, Inc; 1994. p. 105-17.
385. Honderich T. The Oxford companion to philosophy. 2nd ed.. ed. Oxford. New York: Oxford. New York : Oxford University Press; 2005.
386. Popper KR. The logic of scientific discovery. London: London : Routledge Classics; 2002.
387. Park YS, Konge L, Artino AR, Jr. The Positivism Paradigm of Research. Academic Medicine. 2020;95(5)
388. Popper K. Conjectures and Refutations. London: Routledge and Kegan Paul; 1963.
389. Hirscheim RA. Chapter 2: Information Systems Epistemology: An Historical Perspective. In: Economics LSo, editor. Information Systems Research: Issues, Methods and Practical Guidelines. London: Blackweel Scientific Publications; 1992.
390. Mill J. A System of Logic. London: Longmans; 1843.
391. Levers M-JD. Philosophical Paradigms, Grounded Theory, and Perspectives on Emergence. SAGE Open. 2013;3(4):2158244013517243.https://doi.org/10.1177/2158244013517243.

392. Edwards PK, O'Mahoney J, Vincent S. Studying organisations using critical realism. Oxford: Oxford University Press 2014.
393. Denzin N, Lincoln Y. The Sagen Handbook of Qualitative Research. London: Sage; 2005. p. 21.
394. Braun V. Successful qualitative research : a practical guide for beginners. Clarke V, editor. London: SAGE; 2013.
395. Neale B. Qualitative Longitudinal Research: Research Methods: Bloomsbury Publishing 2021.
396. Green J, Thorogood N. Qualitative Methods for Health Research. SAGE. 2004;9:177-80
397. Barbour R. Introducing qualitative research : a student's guide. 2nd ed. Los Angeles, CA: SAGE Publications; 2014.
398. Dingwall R. Accounts, interviews and observations Context and Method in Qualitative Research. London: Sage; 1997.
399. Murray SA, Kendall M, Carduff E, Worth A, Harris FM, Lloyd A, et al. Use of serial qualitative interviews to understand patients' evolving experiences and needs. BMJ. 2009;339:b3702.https://doi.org/10.1136/bmj.b3702.
400. Read BL. Serial Interviews: When and Why to Talk to Someone More Than Once. International Journal of Qualitative Methods. 2018;17(1):1-10.https://doi.org/10.1177/1609406918783452.
401. Braun V, Clarke V. Reflecting on reflexive thematic analysis. Qualitative Research in Sport, Exercise and Health. 2019;11(4):589-97.https://doi.org/10.1080/2159676X.2019.1628806.
402. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology. 2006;3(2):77-101.doi: 10.1191/1478088706qp063oa.
403. Calman L, Brunton L, Molassiotis A. Developing longitudinal qualitative designs: lessons learned and recommendations for health services research. BMC Medical Research Methodology. 2013;13(1):14.https://doi.org/10.1186/1471-2288-13-14.
404. World Health Organization. Standards and Operational Guidance for Ethics Review of Health-Related Research with Human Participants. Geneva, Switzerland; 2011.
405. Marx K. Theories of Surplus Value, part 1. Moscow: Progress Publishers 1969.
406. England KVL. Getting Personal: Reflexivity, Positionality, and Feminist Research. The Professional Geographer. 1994;46(1):80-9.doi: 10.1111/j.0033-0124.1994.00080.x.
407. Cohen L. Research methods in education. 8th ed. Manion L, Morrison K, editors: New York : Routledge; 2018.
408. Finlay L, Gough B. Reflexivity : a practical guide for researchers in health and social sciences. Malden, MA: Malden, MA : Blackwell Science; 2003.
409. Malterud K. Qualitative research: standards, challenges, and guidelines. Lancet. 2001;358(9280):483-8.10.1016/s0140-6736(01)05627-6.
410. NECPC. North East child poverty now highest in the UK. North East Child Poverty Commission 2022 [cited 20 July 2022. Available from: https://www.nechildpoverty.org.uk/news/north-east-child-poverty-now-highest-in-the-uk]
411. Flick U. An introduction to qualitative research. 6th ed: Los Angeles. London : SAGE; 2018.
412. Braun V, Clarke V. (Mis)conceptualising themes, thematic analysis, and other problems with Fugard and Potts' (2015) sample-size tool for thematic analysis. International Journal of Social Research Methodology. 2016;19(6):739-43.https://doi.org/10.1080/13645579.2016.1195588.
413. Neale B, Hanna E. The ethics of researching lives qualitatively through time. 2012. Contract No.: Report 11 cited 18 March 2022.
414. Garfin DR, Silver RC, Holman EA. The novel coronavirus (COVID-2019) outbreak: Amplification of public health consequences by media exposure. Health Psychology. 2020;39(5):355-7.doi: 10.1037/hea0000875.
415. Archibald MM, Ambagtsheer RC, Casey MG, Lawless M. Using Zoom Videoconferencing for Qualitative Data Collection: Perceptions and Experiences of Researchers and Participants. International Journal of Qualitative Methods. 2019;18:1-8.doi: 10.1177/1609406919874596.
416. Lobe B, Morgan D, Hoffman KA. Qualitative Data Collection in an Era of Social Distancing. International Journal of Qualitative Methods. 2020;19:1-8.doi: 10.1177/1609406920937875.

417. Pell B, Williams D, Phillips R, Sanders J, Edwards A, Choy E, et al. Using Visual Timelines in Telephone Interviews: Reflections and Lessons Learned From the Star Family Study. International Journal of Qualitative Methods. 2020;19:1-11.doi: 10.1177/1609406920913675.
418. Bremner N. Time for Timelines: The Take-Home Timeline as a Tool for Exploring Complex Life Histories. International Journal of Qualitative Methods. 2020;19:40-5.doi: 10.1177/1609406920948978.
419. Patterson ML, Markey MA, Somers JM. Multiple Paths to Just Ends: Using Narrative Interviews and Timelines to Explore Health Equity and Homelessness. International Journal of Qualitative Methods. 2012;11(2):132-51.doi: 10.1177/160940691201100202.
420. Elizabeth Aburn G, Gott M, Hoare K. Experiences of an insider researcher - interviewing your own colleagues. Nurse Res. 2021;29(3):22-8.doi: 10.7748/nr.2021.e1794.
421. McConnell-Henry T, James A, Chapman Y, Francis K. Researching with people you know: Issues in interviewing. Contemporary Nurse. 2010;34(1):2-9.doi: 10.5172/conu.2009.34.1.002.
422. Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, et al. The socio-economic implications of the coronavirus pandemic (COVID-19): A review. International Journal of Surgery. 2020;78:185-93.https://doi.org/10.1016/j.ijsu.2020.04.018.
423. Ng K. Coronavirus: UK food banks running out of supplies as people stockpile and donations fall Independent 2020.
424. IFAN. We're calling for the UK Government to urgently provide direct income to those in need during the Coronavirus crisis but for now independent food banks urgently require food. 2020 [cited 6 May 2022. Available from: https://www.foodaidnetwork.org.uk/blog/we-re-calling-for-the-uk-government-to-urgently-provide-direct-income-to]
425. McKay FH, Bastian A, Lindberg R. Exploring The Response Of The Victorian Emergency And Community Food Sector To The COVID-19 Pandemic. Journal of Hunger & Environmental Nutrition. 2021;16(4):447-61.https://doi.org/10.1080/19320248.2021.1900974.
426. Revie E. The pandemic and food banks: what's happened and where do we go next? . The Trussell Trust 2021 [cited 4 May 2022. Available from: https://www.trusselltrust.org/2021/04/01/the-pandemic-and-food-banks/]
427. IFAN. Food bank volunteer hours research. Independent Food Aid Network.2017 [cited 3 May 2022. Available from: https://www.foodaidnetwork.org.uk/food-bank-volunteer-hours]
428. Bulman M. Coronavirus: Food banks forced to close amid Covid-19 outbreak. Independent. 2020.
429. Moberly T. Food banks may close as covid cases surge, charity warns. BMJ. 2021;372:27.doi: 10.1136/bmj.n27.
430. Forrest A. Britain's food banks 'close to breaking point' amid rapid rise in poverty, Rishi Sunak warned. Independent. 2022.
431. Butler P. More than a million UK residents live in 'food deserts', says study. The Guardian 2018.
432. Caraher M, Cowburn G. A survey of food projects in the English NHS regions and Health Action Zones in 2001. Health Education Journal. 2004;63(3):197-219.doi: 10.1177/001789690406300302.
433. McGlone P, Dobson B, Dowler E, Nelson M. Food projects and how they work. Joseph Rountree Foundation; ; 1999.
434. Lambie-Mumford H. 'Every Town Should Have One': Emergency Food Banking in the UK. Journal of Social Policy. 2013;42(1):73-89.doi: 10.1017/S004727941200075X.
435. BBC. Coronavirus: Nearly two million claim universal credit. BBC. 2020.
436. Department for Education. Investigation into the free school meals voucher scheme. London: National Audit Office; 2020.
437. Alahna Kindred. Shocked parents blast 'disgusting' free school meal rations as bread, tuna and crackers among 'measly' supplies. The Sun. 2020.
438. Lee RP, Coulson C, Hackett K. The Social Practices of Food Bank Volunteer Work. Social Policy and Society. 2021:1-18.doi: 10.1017/S1474746421000555.
439. Williams A, Cloke P, May J, Goodwin M. Contested space: The contradictory political dynamics of food banking in the UK. Environment and Planning A: Economy and Space. 2016;48(11):2291-316.doi: 10.1177/0308518X16658292.

440. Cheetham M, Moffatt S, Addison M, Wiseman A. Impact of Universal Credit in North East England: a qualitative study of claimants and support staff. BMJ Open. 2019;9(7):e029611.http://dx.doi.org/10.1136/bmjopen-2019-029611.
441. Craig P, Katikireddi SV. Early impacts of Universal Credit: the tip of the iceberg? The Lancet. 2020;5(3):E131-E2.https://doi.org/10.1016/S2468-2667(20)30036-0.
442. Riches G. Hunger, food security and welfare policies: Issues and debates in First World societies. Proceedings of the Nutrition Society. 1997;56(1A):63-74.doi: 10.1079/PNS19970010.
443. Riches G, Silvasti T. Hunger in the Rich World: Food Aid and Right to Food Perspectives. 2014.
444. Saxena LP, Tornaghi C. The emergence of social supermarkets in Britain: Food poverty, food waste and austerity retail. England: Coventry University; 2018.
445. Stettin S, Pirie C, McKendrick JH. Keeping the baby when we throw out the bathwater: social supermarkets for community development. Community Development Journal. 2022:bsab057.doi: 10.1093/cdj/bsab057.
446. Thompson E, Jitendra A, Rabindrakumar S. #5weekstoolong Why we need to end the wait for universal credit. The Trussell Trust; 2019.
447. Wright S, D'wyer P, Jones K, McNeill J, Scullion L, Stewart ABR. Final findings: Universal Credit. England: Welfare Conditionality; 2018.
448. Sustain. Develop an alliance and action plan to tackle food poverty. London.2022 [cited 7 May 2022. Available from: https://www.sustainweb.org/foodpoverty/action_plan/
449. Shaw S, van der Berg A. Developping food poverty action plans. Sustain; 2019.
450. Agostinho D, Paço A. Analysis of the motivations, generativity and demographics of the food bank volunteer. International Journal of Nonprofit and Voluntary Sector Marketing. 2012;17(3):249-61.https://doi.org/10.1002/nvsm.1427.
451. Dennis MK, Scanlon ET, Sellon AM. "It's a generosity loop": Religious and spiritual motivations of volunteers who glean produce to reduce food insecurity. Journal of Religion & Spirituality in Social Work: Social Thought. 2017;36(4):456-78.doi: 10.1080/15426432.2017.1284633.
452. Rondeau S, Stricker SM, Kozachenko C, Parizeau K. Understanding Motivations for Volunteering in Food Insecurity and Food Upcycling Projects. Social Sciences. 2020;9(3).doi: 10.3390/socsci9030027.
453. Caplan P. Big society or broken society?: Food banks in the UK. Anthropology Today. 2016;32(1):5-9.https://doi.org/10.1111/1467-8322.12223.
454. Barton KL, Wrieden WL, Sherriff A, Armstrong J, Anderson AS. Trends in socio-economic inequalities in the Scottish diet: 2001-2009. Public Health Nutr. 2015;18(16):2970-80.doi: 10.1017/s1368980015000361.
455. World Health Organization. Policy. 2022 [cited 10 June 2022. Available from: https://www.euro.who.int/en/health-topics/disease-prevention/nutrition/policy]
456. Local Government Association. Hundreds of thousands of eligible families miss out on Healthy Start Vouchers – LGA analysis. Local Government Association; 2022 [cited 8 December 2022. Available from: https://www.local.gov.uk/about/news/hundreds-thousands-eligible-families-miss-out-healthy-start-vouchers-lga-analysis
457. Landon G. 1159 Improving uptake of healthy start vouchers during the COVID-19 pandemic. Archives of Disease in Childhood. 2021;106:A254.10.1136/archdischild-2021-rcpch.441.
458. Sustain. Improve uptake of Healthy Start and Best Start schemes 2022 [cited 8 December 2022. Available from: https://www.sustainweb.org/foodpoverty/healthy_start/
459. Pfeiffer S, Ritter T, Oestreicher E. Food Insecurity in German households: Qualitative and Quantitative Data on Coping, Poverty Consumerism and Alimentary Participation. Social policy and society : a journal of the Social Policy Association. 2015;14(3):483-95.10.1017/S147474641500010X.
460. Silvasti T. Food Aid – Normalising the Abnormal in Finland. Social Policy and Society. 2015;14(3):471-82.10.1017/S1474746415000123.
461. Office for National Statistics. The cost of living, current and upcoming work: March 2022 2022 [08.12.2022. Available from:

https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/expenditure/articles/therisingcostoflivinganditsimpactonindividualsingreatbritain/november2021tomarch2022
462. £400 energy bills discount to support households this winter [press release]. 2022.
463. Energy Price Guarantee [press release]. 2022.
464. The war in Ukraine is exposing gaps in the world's food-systems research. Nature. 2022;604:217-8
465. The World Bank. The impact of the War in Ukraine on Food Security 2022 [08.12.2022. Available from: https://www.worldbank.org/en/news/video/2022/04/05/the-impact-of-the-war-in-ukraine-on-food-security-world-bank-expert-answers
466. Morris N, Cooper C. Hungry Britain: More than 500,000 people forced to use food banks; Number has trebled in past 12 months. The Independent. 2013.
467. Unicef. Unicef UK statement on funding of UK food programmes. 2020 [cited 7 June 2022. Available from: https://www.unicef.org.uk/press-releases/unicef-uk-statement-on-funding-of-uk-food-programmes/]
468. European Food Banks Federation. Food poverty, a growing problem in Europe. 2021 [cited 22 July 2022. Available from: https://www.eurofoodbank.org/what-s-new-2021-01-05-food-poverty-a-growing-problem-in-europe/]
469. Hill RP, Gaines J. The Consumer Culture of Poverty: Behavioral Research Findings and Their Implications in an Ethnographic Context. The Journal of American Culture. 2007;30(1):81-95.https://doi.org/10.1111/j.1542-734X.2007.00466.x.
470. Preston J, Firth R. Mutual Aid, Anarchist Preparedness and COVID-19. Coronavirus, Class and Mutual Aid in the United Kingdom. Cham: Cham: Springer International Publishing; 2021. p. 57-82.
471. Riches G, Gerlings K. Is 'Left Over' Food for 'Left Behind' People the Best We Can Do? The Tyee. 2019.
472. Dowler E, Lambie-Mumford H. How Can Households Eat in austerity? Challenges for Social Policy in the UK. Social Policy and Society. 2015;14(3):417-28.doi: 10.1017/S1474746415000032.
473. Government data shows £20 uplift is likely to have protected people on Universal Credit from food insecurity [press release]. London2022.
474. Millions of most vulnerable households will receive £1,200 of help with cost of living [press release]. 2022.
475. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ. 2021;372:n71.https://doi.org/10.1136/bmj.n71.
476. Thorne S, Jensen L, Kearney MH, Noblit G, Sandelowski M. Qualitative metasynthesis: reflections on methodological orientation and ideological agenda. Qual Health Res. 2004;14(10):1342-65.https://doi.org/10.1177/1049732304269888.
477. Health Talk. Representing a range of views and experiences: being representative 2022 [08.12.2022. Available from: https://healthtalk.org/patient-and-public-involvement-research/representing-a-range-of-views-and-experiences-being-representative
478. Dean H. Introduction. Ethics and social policy research. Luton: University of Luton Press; 1996.
479. Jones A. Involving children and young people as researchers. Doing research with children and young people: SAGE; 2004.
480. Sime D. Ethical and methodological issues in engaging young people living in poverty with participatory research methods. Children's Geographies. 2008;6(1):63-78.10.1080/14733280701791926.
481. Petticrew M, Egan M, Thomson H, Hamilton V, Kunkler R, Roberts H. Publication bias in qualitative research: what becomes of qualitative research presented at conferences? J Epidemiol Community Health. 2008;62(6):552-4.http://dx.doi.org/10.1136/jech.2006.059394.
482. Hirsch D, Stone J. Local indicators of child poverty after housing costs, 2019/20. Loughborough University 2021.
483. Nichols A, Donovan C. The state of crisis support: Local welfare assistance through covid and beyond. End Furniture Poverty; 2022.

484. Oliver K, de Vocht F, Money A, Everett M. Who runs public health? A mixed-methods study combining qualitative and network analyses. J Public Health (Oxf). 2013;35(3):453-9.doi: 10.1093/pubmed/fdt039.
485. The Health Foundation. Implementing health in all policies: Lessons from around the world. London; 2019.
486. Green L, Ashton K, Bellis MA, Clemens T, Douglas M. 'Health in All Policies'-A Key Driver for Health and Well-Being in a Post-COVID-19 Pandemic World. International journal of environmental research and public health. 2021;18(18):9468.doi: 10.3390/ijerph18189468.

APPENDICES

Appendix A – Ethical approval for original project

Faculty of Medical Sciences
Newcastle University
The Medical School
Framlington Place
Newcastle upon Tyne
NE2 4HH, United Kingdom

17 February 2021

Zoe Bell
Population Health Sciences Institute

FACULTY OF MEDICAL SCIENCES: ETHICS COMMITTEE

Dear Zoe

Title: A qualitative exploration of food insecurity and its impact on diet and nutrition amongst women and their children in the North East of England
Application: 1876/1149/2020 and Amendments
Start date to end date: 29/03/2020 to 13/03/2022

On behalf of the Faculty of Medical Sciences Ethics Committee, I am writing to confirm that the ethical aspects of your proposal have been considered and your study has been given ethical approval.

The approval is limited to this project: **1876/1149/2020 (and amendments)**. If you wish for a further approval to extend this project, please submit a re-application to the FMS Ethics Committee and this will be considered.

During your research project you may find it necessary to revise your protocol. Substantial changes in methodology or changes that impact on the interface between the researcher and the participants must be considered by the FMS Ethics Committee, prior to implementation. *

At the close of your research project, please report any adverse events that have occurred and the actions that were taken to the FMS Ethics Committee. *

Yours sincerely

Marjorie Holbrough
On behalf of Faculty Ethics Committee

cc. Professor Daniel Nettle, Chair of FMS Ethics Committee
Mrs Kay Howes, Research Manager

*Please refer to the latest guidance available on the internal Newcastle web-site.

Appendix B – Leaflet for original project

Study for women using services offering food parcels

This could be for you if you…

- Are you a female 18-45 years, pregnant or with a child below 5 years of age
- Have recently received food from a service offering food parcels
- Live in Gateshead

You will be asked to participate in….

- An interview approx. 1 hour long
- Optional second & third interview
- Telephone or online video call interview

Expenses

- Token of thanks will be given as a £10 supermarket voucher after each interview

Interested?

Email Zoë Bell (PhD Student)
z.bell2@newcastle.ac.uk
Call or Text 07709 939397

Funded through the Economic & Social Research Council PhD Studentship in collaboration with Gateshead Council

Appendix C – Participant information sheet (PIS) for original project

Information Sheet for potential participants

A study exploring women's use of services offering food parcels and the impact on diet and nutrition

Hello,

My name is Zoë Bell and I am a PhD Student from Newcastle University. I am asking you to take part in research. Before you decide if you want to take part or not, I want to tell you why this research is being done, and what you can expect if you take part. Please ask if you have any questions. Please feel free to talk about the study with others if you wish. Please contact me directly or the person who handed you this information sheet if you wish to find out more or participate.

Thank you for reading this.

What is the purpose of the research?
The aim of this research is to know more about women who are accessing services offering food parcels in Gateshead. I would like to ask some questions about the circumstances that led you to using the services, and your views on nutrition. I would like to learn from your experiences about what extra support you feel you would need, if any, to have a healthy and balanced diet.

Why have I been invited to take part?
You have been contacted because I want to interview women who have had experience of using a service offering free food parcels. I am inviting women to take part if they are over 18 years of age, of childbearing age, if they are pregnant or have children under the age of 5 years.

Do I have to take part?
No. It is entirely up to you to decide whether or not you want to take part. If you decide to take part, you will be given this information sheet to keep. You will also be asked to sign a 'consent form'. If you decide to take part in the interview, you are still free to stop the interview at any time without giving a reason, or withdraw from the study. No questions will be asked if you stop or withdraw. Deciding whether or not to take part in the study will not have any impact on you being able to access any services in the future.

What will happen if I take part?
If you decide you want to know more about the study or want to take part then contact me directly with the details at the end of this form. I can discuss the research with you in more detail and arrange a time for you to have the interview. The interview will be by telephone or online using Skype or Zoom or a similar platform. The follow-up interviews will have the option of face-to-face. You will receive a £10 supermarket voucher as a token of thanks. I will ask you which supermarket is most convenient for you prior to the interview. This will be

1

posted to your address if the interview is by telephone or online. You will be paid for your travel costs for interviews taking place face-to-face.

What would the interview be like?
I will discuss the research with you, answering any questions you might have. If you are happy to take part then you will provide verbal or written consent prior to the interviewing starting.

The interview will be like a conversation. I will ask you to talk about you and your family and the circumstances that led you to the services offering free food parcels. I will ask you to talk about how this affects your diet and nutrition and daily food activities. I will ask questions about what your thoughts and feelings have been, how you have got support and information and what you have found helpful, or not.

While people sometimes find it helpful to talk about their story to researchers this research is not the same thing as counselling. However, we can give everyone a list of useful contacts that can be used to get more help if you want.

How long would the interview take?
The time it takes for an interview varies, depending on how much you to say, but most interviews last an hour. If you would prefer, we can interview you on two different occasions. Remember, if you want to stop the interview at any time, you can do so without giving any reason at all.

What if I decide to withdraw after the interview has taken place?
If you decide to withdraw/leave the research then any information collected prior to withdrawal will be kept. If you decide that withdrawal is something that you would like to do please contact me using the contact information on the sheet below.

What would happen after the interview?
I will copy the audio-recording onto a university file store accessible only to me. I will then delete the recording from the audio recorder. I will then type out everything you said in the interview. At the same time I will change your name to a different code name so that you are not identifiable. Any other names mentioned will be also be given a code. The digital recording and the typed up record (transcript), identified only by the code name, will both be kept on Newcastle university file store accessible only to me.

Once the interview has finished I will ask if you are interested in taking part in a follow-up interview a couple of months later. This interview would similar to the first one. We would discuss anything that has changed or developed since the first interview with some additional questions related to the topic. If you are willing to be contacted to ask if you want to participate you will give verbal consent. I will contact you later on in the study to arrange a suitable time, convenient for you. You will receive another £10 supermarket voucher as a token of

thanks. You will have the opportunity to take part in a second follow-up interview a few months after again, if you wish. This would be similar to the second interview.

How would the researcher use the interview tape and transcript?

Before the interview you will be asked to provide verbal or written consent. You give consent to Newcastle University to using all the data provided from the interview within research, to present in published articles and at conferences. You will not be identifiable in the presented findings from the study. It is very important that you take time to think about and discuss participating before you provide verbal or written consent.

I will use your name and contact details (telephone number or email) to contact you about the research study. The only individuals who will have access to personal information that identifies you will be me. All data use is strictly within the terms of the General Data Protection Regulations.

What are the possible benefits of taking part?

There will not be any direct benefits for you taking part in this type of research. However, there are possible wider benefits of the research to Gateshead and the services you are accessing. Your experiences will potentially provide additional practical information to help the services you are currently using, as well as provide recommendations for policy changes.

What are the possible disadvantages and risks of taking part?

Sometimes people find it distressing talking about their experience with the researcher. For this reason, you don't have to answer any questions that don't feel comfortable answering. The interview can be stopped at any time. It can be stopped altogether or re-arranged, whichever you prefer. The researcher is not a counsellor, but can give you a list of useful contacts to get more help and support if you want.

Who is funding this research?

The Economic and Social Research Council (ESRC) are funding this research. The funding has been awarded as part of the researcher's 3.5 years PhD Studentship.

Has this study received ethical approval?

This study was approved by the Faculty of Medical Sciences Research Ethics Committee, part of Newcastle University's Research Ethics Committee. This committee contains members who are internal to the Faculty, as well as one external member. This study was reviewed by members of the committee, who must provide impartial advice and avoid significant conflicts of interests.

Who should I contact for further information relating to the research?

Zoë Bell (PhD Student)

z.bell2@ncl.ac.uk

Call or text : 07709939397

Newcastle University

Baddiley Clark Building

Newcastle University

Newcastle Upon Tyne

NE2 4BN

Who should I contact in order to file a complaint?

Given the nature of the study it is highly unlikely you will suffer harm by taking part. However, the University has arrangements in place to provide for harm arising from participation in the study for which the University is the Research Sponsor. If you wish to complain about any aspect of the way in which you have been approached or treated during the course of this study, you should contact Clare Bambra at Newcastle University on 0191 208 8289 or email Clare.Bambra@newcastle.ac.uk.

If you wish to raise a complaint on how your personal data is handled, you can contact the Data Protection Officer who will investigate the matter: **http://www.ncl.ac.uk/data.protection/PrivacyNotice** and/or by contacting Newcastle University's Data Protection Officer (Maureen Wilkinson, **rec-man@ncl.ac.uk)**.

If you are not satisfied with their response you can complain to the Information Commissioner's Office (ICO): https://ico.org.uk/

Many thanks for reading this information sheet.

Zoë Bell

Appendix C continued – Consent form

Newcastle University

Consent Form for research participants – Interviews

A study exploring women's use of services offering food parcels and the impact on diet and nutrition

Thank you for your interest in taking part in this research. Please complete this form after you have read the Information Sheet and listened to an explanation about the research study. You will be given a copy of this Consent Form.

		Please initial box to confirm consent
1.	I confirm that I have read the information sheet dated *[20/04/2020]* (version 1.1) for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.	
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, *[without my medical care or legal rights being affected]*. I understand that if I decide to withdraw from the study any data I have provided up to that point will be kept.	
3.	I consent to the processing of my personal information *[names, ages, ethnicity, phone number, service recruited from, children's names and ages]* for the purposes of this research study, as described in the information sheet dated *[20/04/2020]* (version 1.1).	
4.	I understand that some of the data I have provided may be included in reports and published in other work.	
5.	I consent to the retention of my personal information *[name, phone number, email address, service recruited from]* for 1 year, for the purpose of being re-contacted at the end of the study with the results	
6.	I consent to being *audio* recorded and understand that the recordings will be destroyed from the audio recording device immediately after the audio recording has been uploaded onto a password-protected university server. It will be stored non-identifiably on a password- protected university server, accessible to only the researcher, kept for 3 years after the study. I understand that being audio recorded is optional and therefore is not necessary for my participation in this research.	
8.	I confirm that I am 18 years of age or older	
7.	I agree to take part in this research project.	
	Participant *Name of participant* *Signature* *Date*	
	Researcher *Name of researcher* *Signature* *Date*	

Appendix D – Topic guide

Topic guide for semi-structured interviews with women

Participant number: ____________________

Date and place of interview: ________________________

Time start: _______________________

Time end: ________________________

Voice recorded? Yes No

Introduction

Thank you so much for agreeing to take part in this interview. I'm Zoë and I'm from Newcastle University. I am conducting this study to explore the lives of women and their children who are accessing services offering food parcels in Gateshead. To understand your day-to-day experience in accessing food and its impact on your diet, nutrition and health.

I want to hear your views and opinions and listen to your experience. Everything you say will be anonymous, even from my research team, so please be as honest as you can. The interview should last about an hour but if you'd like to stop it before then that is fine. If I ask anything that you are not comfortable with, please let me know and we can move on to a different question or stop the interview if you'd like. With your permission I will be recording the interview and you won't be identifiable in the recording. This is to allow me to transcribe the interview so I can analyse it later. The interview will be in two parts. The first part is about you and your family and how you came to use the services. The second part more focused on diet and nutrition.

Is there anything you'd like to ask me before we start the interview?

Interview

Interview with participant: ____________________

Introductions
This section will elicit biographical narratives and descriptions of family members. These questions should serve as an effective warm-up activity, providing information for later questions and prompts.

Tell me about you and your family / children
Prompts as necessary

- How many children do you have? Are they at school?
- Do you work? Where do you / your partner work?
- How long have you lived in this area? How long have you lived in your house/flat for?
- Do you own the house? Is that through the housing association or private rented?

What does enough food mean to your family? (enough in terms of what?)
Do you have enough to eat in your family?

If NOT, Explain.
Have you experience this situation only once or does it happen regularly?

- Are other / wider family members affected?
- When it happens, how long does it last?

Coming to the foodbank
Can you tell me how you first came to use a food bank/ food co-operative, the particular events or circumstances that led you there?

Think about the last time you received a food parcel, what did you like / not like about the process and experience? How did you feel afterwards?

Prompts as necessary

- What surprised you most about the process?
- How did you get a referral?
- Have you had to go to a foodbank or use food aid again?
- Are you still experiencing these difficulties now? If it has got better, why?

Food practices and change
These questions are designed to develop a picture of how food provisioning practices are impacted upon by experiences of food poverty.

For you, what is a healthy diet?

Tell me about your experience of accessing healthy food in Gateshead

Prompts as necessary

- Think about the last time you went food shopping what did you like / not like about your experience? How did you feel after?
- Think about the last time you cooked a meal at home, what did you like / not like about your experience?

Tell me, how you decided how to feed your baby, child

- Can you describe what is was like feeding your baby in that time?

Tell me, how you decide how to feed your family?

- Can you describe what is was like feeding your family in that time?
- If needed, ask about any change in their behaviour (relation with others, self-esteem, eating pattern, etc.)? How is he/she sleeping?

When you have access to food parcels, do your meals change a lot compared to the usual? How do they differ (number of meals, composition, choice of food)?

Recommendations
The aim here is to understand from women's lived experiences what they need in order to mitigate the experience of food poverty.

Based on your experience, has the foodbank made your life easier? What would make life easier to access healthy food in Gateshead?

<u>**** Additions and changes for follow-up interview two and three</u>

The introduction section will be replaced by a verbal summary of the previous interviews content (provided by the researcher) and an invitation for the participant to report anything that had changed or developed since then – especially circumstances. The remaining three topics will be the same, with additional questions added on a participant-by-participant basis in order to follow-up specific responses from previous interviews.

Exit question:
Are there any other experiences that you feel are important to raise or share?

Appendix E – Systematic review search strategy

Web of Science

(TI=(wom?n or female or mother* or matern* or mum or father* or dad or caregiver* or guardian* or parent* or preg* or postnatal or newborn or bab* or infan* or toddler or child* or preschool or adolescent or teen* or "young adult" or "lowest income group")) OR (AB=(wom?n or female or mother* or matern* or mum or father* or dad or caregiver* or guardian* or parent* or preg* or postnatal or newborn or bab* or infan* or toddler or child* or preschool or adolescent or teen* or "young adult" or "lowest income group"))

AND ((TI=("food insecur*" or "food secur*" or "food poverty" or "food insufficienc*" or "food assistance" or "food depriv*" or poverty or "food bank*" or hunger or "access to food" or hardship or "food access"))OR (AB=("food insecur*" or "food secur*" or "food poverty" or "food insufficienc*" or "food assistance" or "food depriv*" or poverty or "food bank*" or hunger or "access to food" or hardship or "food access"))

AND (TS=(nutrition or "food practices" or "food preferences" or "healthy eating" or "family influences" or health or "feeding behaviour" or "feeding practices" or "food habit"s or diet or "diet quality" or "portion size" or breastfeeding or "complimentary feeding" or "maternal nutrition" or "child nutrition" or "infant food" or weight or obesity or "childhood obesity" or "toddler development" or growth or "growth trajectories"))

AND (TS=("qualitative research" or "grounded theory" or ethnograph* or phenomenolog* or feminis* or narrative or interview* or "focus group" or "case stud*" or anthrop* or observ* or "field notes" or biograph* or "life history" or photovoice or "photo elicitation" or autoethnograph* or "creative method" or "thematic analysis"))

AND LANGUAGE: (English) *Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI Timespan=2008-2020*

Scopus

TITLE-ABS ("food insecur*" OR "food secur*" OR "food poverty" OR "food insufficien*" OR "food assistance" OR "food depriv*" OR poverty OR "foodbanks" OR "food banks" OR hunger OR "food access*")

AND TITLE-ABS("food insecur*" or "food secur*" or "food poverty" or "food insufficien*" or "food assistance" or "food depriv*" or poverty or "foodbanks" or "food banks" or hunger or "food access")

AND TITLE-ABS-KEY (nutrition OR "food practices" OR "food preferences" OR "healthy eating" OR "feeding behaviour" OR "feeding practices" OR "food habits" OR diet OR "diet quality" OR "portion size" OR breastfeeding OR "complimentary feeding" OR weaning OR "maternal nutrition" OR "child nutrition" OR "infant food" OR weight OR obesity OR "childhood obesity" OR development OR growth)

AND TITLE-ABS-KEY("qualitative research" or "grounded theory" or ethnograph* or phenomenolog* or feminis* or narrative* or interview* or "focus group*" or "case stud*" or anthrop* or observ* or "field notes" or biograph* or "life history" or photovoice or "photo elicitation" or autoethnograph* or "creative method" or "thematic analysis")

(LIMIT-TO (AFFILCOUNTRY,"United States") OR LIMIT-TO (AFFILCOUNTRY,"United Kingdom") OR LIMIT-TO (AFFILCOUNTRY,"Canada") OR LIMIT-TO (AFFILCOUNTRY,"Australia") OR LIMIT-TO (AFFILCOUNTRY,"Netherlands") OR LIMIT-TO (AFFILCOUNTRY,"Germany") OR LIMIT-TO (AFFILCOUNTRY,"France") OR LIMIT-TO (AFFILCOUNTRY,"Sweden") OR LIMIT-TO (AFFILCOUNTRY,"Italy") OR LIMIT-TO (AFFILCOUNTRY,"Switzerland") OR LIMIT-TO (AFFILCOUNTRY,"Spain") OR LIMIT-TO (AFFILCOUNTRY,"Norway") OR LIMIT-TO (AFFILCOUNTRY,"New Zealand") OR LIMIT-TO (AFFILCOUNTRY,"Belgium") OR LIMIT-TO (AFFILCOUNTRY,"Japan") OR LIMIT-TO (AFFILCOUNTRY,"Denmark") OR LIMIT-TO (AFFILCOUNTRY,"Finland") OR LIMIT-TO (AFFILCOUNTRY,"Ireland") OR LIMIT-TO (AFFILCOUNTRY,"Poland") OR LIMIT-TO (AFFILCOUNTRY,"Israel") OR LIMIT-TO (AFFILCOUNTRY,"Chile") OR LIMIT-TO (AFFILCOUNTRY,"Austria") OR LIMIT-TO (AFFILCOUNTRY,"Portugal") OR LIMIT-TO (AFFILCOUNTRY,"Greece") OR LIMIT-TO (

AFFILCOUNTRY,"Czech Republic") OR LIMIT-TO (AFFILCOUNTRY,"Hungary") OR LIMIT-TO (AFFILCOUNTRY,"Slovakia") OR LIMIT-TO (AFFILCOUNTRY,"Estonia") OR LIMIT-TO (AFFILCOUNTRY,"Luxembourg") OR LIMIT-TO (AFFILCOUNTRY,"Iceland") OR LIMIT-TO (AFFILCOUNTRY,"Lithuania") OR LIMIT-TO (AFFILCOUNTRY,"Slovenia") OR LIMIT-TO (AFFILCOUNTRY,"Undefined"))

Limits 2008-current, English language

CINHAL

(MH "Women+") OR (MH "Expectant Mothers") OR (MH "Parents+") OR (MH "Fathers") OR "dad" OR (MH "Guardianship, Legal") OR (MH "Caregivers") OR (MH "Child+") OR (MH "Infant") OR (MH "Infant, Newborn+") OR (MH "Adolescence")

AND (MH "Food Security") OR (MH "Food Assistance") OR (MH "Hunger") OR (MH "Poverty") OR “"food pantry or food pantries or food bank or food banks or food access”

AND (MH "Nutrition") OR (MH "Diet") OR (MH "Food Intake") OR (MH "Infant Nutrition") OR (MH "Adolescent Nutrition") OR (MH "Child Nutrition") OR (MH "Food Preferences") OR (MH "Food Habits") OR (MH "Portion Size") OR (MH "Eating Behavior") OR (MH "Breast Feeding") OR (MH "Bottle Feeding") OR (MH "Infant Feeding") OR (MH "Body Weight") OR "growth and development"

AND (MH "Delphi Technique") OR (MH "Interviews") OR (MH "Narratives") OR (MH "Focus Groups") OR (MH "Observational Methods")) OR (MH "Qualitative Studies+")

Limits 2008-current, English language

ASSIA

(wom?n OR female OR mother* OR matern* OR mum OR father OR dad OR caregiver OR guardian OR parent* OR preg* OR postnatal OR newborn OR bab* OR infan* OR toddler OR child* OR preschool OR adolescent OR teen* OR "young adult" OR "lowest income group")

AND ("food insecur*" OR "food secur*" OR "food poverty" OR "food insufficien*" OR "food assistance" OR "food depriv*" OR "poverty" OR "foodbanks" OR "food banks" OR "hunger" OR "access to food" OR "food aid" or “food access*”)

AND (nutrition OR "food practices" OR "food preferences" OR "healthy eating" OR "feeding behaviour" OR "feeding practices" OR "food habits" OR diet OR "diet quality" OR "portion size" OR breastfeeding OR "complimentary feeding" OR weaning OR "maternal nutrition" OR "child nutrition" OR "infant food" OR weight OR obesity OR "childhood obesity" OR development OR growth)

AND ("qualitative research" OR "grounded theory" OR ethnograph* OR phenomenolog* OR feminis* OR narrative* OR interview* OR "focus group*" OR "case stud*" OR anthrop* OR observ* OR "field notes" OR biograph* OR "life history" OR photovoice OR "photo elicitation" OR autoethnograph* OR "creative method" OR "thematic analysis")

1 Jan 2008 to current, English Language

Embase

1	poverty/ or food insecurity/ or food poverty.mp. or food availability/
2	food assistance/
3	food bank.mp.
4	food insufficiency.mp.
5	hunger/ or hunger.mp.
6	female/
7	mother/ or parent/ or adolescent mother/ or expectant mother/

8	adolescent father/ or father/
9	parent/ or adolescent parent/ or adoptive parent/ or divorced parent/ or father/ or mother/ or separated parent/ or single parent/
10	pregnancy/
11	caregiver/
12	legal guardian/
13	newborn/ or infant/
14	child/ or toddler/ or preschool child/
15	young adult/
16	adolescent/
17	lowest income group/
18	6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17
19	maternal nutrition/ or child nutrition/ or infant nutrition/ or adolescent nutrition/ or nutrition/
20	diet/ or healthy diet/
21	feeding behavior/ or eating habit/ or food preference/ or meal size/ or portion size/
22	food practices.mp.
23	breast feeding/ or infant feeding/
24	weaning/
25	"physical constitution and health"/ or body constitution/ or body weight/ or health/ or wellbeing/
26	adolescent obesity/ or childhood obesity/ or obesity/ or diet-induced obesity/
27	child growth/
28	child development/
29	19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28
30	qualitative research/
31	grounded theory/
32	ethnography/

33	phenomenology/
34	feminism/
35	narrative/
36	interview/ or semi structured interview/ or structured interview/ or telephone interview/ or unstructured interview/
37	focus group.mp.
38	case study/
39	anthropology/
40	thematic analysis/
41	participant observation/
42	field notes.mp.
43	participatory research/
44	photo voice.mp.
45	photo elicitation.mp.
46	creative method.mp.
47	30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46
48	access to food.mp.
49	1 or 2 or 3 or 4 or 5 or 48
50	18 and 29 and 47 and 49
51	limit 50 to (human and english language and yr="2008 - Current")

OVID

1	Food Supply/
2	food insecur*.mp.
3	Poverty/ or food poverty.mp.
4	Hunger/ or food insufficiency.mp.
5	Food Deprivation/
6	Food Assistance/

7	access to food.mp.
8	food bank*.mp.
9	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8
10	Pregnancy/ or Female/ or wom?n.mp.
11	exp parents/ or single-parent family/
12	Legal Guardians/
13	Caregivers/
14	adult children/ or age groups/ or adolescent/ or adult/ or child/ or infant/ or infant, newborn/
15	lowest income group.mp.
16	10 or 11 or 12 or 13 or 14 or 15
17	feeding behavior/ or bottle feeding/ or breast feeding/ or food preferences/
18	infant feeding.mp.
19	"diet, food, and nutrition"/ or food/ or diet/ or diet, healthy/ or portion size/ or serving size/
20	child nutrition.mp.
21	exp Body Weight/
22	malnutrition/ or overnutrition/ or obesity/ or obesity, abdominal/ or obesity, maternal/ or obesity, morbid/ or pediatric obesity/
23	"growth and development"/ or growth/ or human development/
24	17 or 18 or 19 or 20 or 21 or 22 or 23
25	grounded theory/ or qualitative research/
26	ethnograph*.mp.
27	phenomenology.mp.
28	feminis*.mp.
29	narrative.mp.
30	interview/
31	Focus Groups/
32	case stud*.mp.

33	Anthropology, Cultural/
34	observ*.mp.
35	field notes.mp.
36	biograph*.mp.
37	life history.mp.
38	Community-Based Participatory Research/ or photovoice.mp.
39	photo elicitation.mp.
40	autoethnography.mp.
41	creative method.mp.
42	thematic analysis.mp.
43	25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42
44	9 and 16 and 24 and 43
45	limit 44 to (English language and humans and yr="2008 - Current")

Websites

European Foodbank Federation

Trussell Trust

Independent Food Aid Network

The Food Foundation

Feeding Britain

Royal College of Obstetrics and Gynaecology

Royal College of Nursing

UNICEF

International Confederation of Midwives

Baby friendly initiative

La leche league international

Appendix F– List of high-income countries as per OECD definition Available at: https://www.worldbank.org/en/news/press-release/2019/10/24/doing-business-2020-oecd-high-income-economies-remain-global-benchmarks-on-most-doing-business-indicators**. Accessed November, 2020**

Australia

Austria

Belgium

Canada

Chile

Czech Republic

Denmark

Estonia

Finland

France

Germany

Greece

Hungary

Iceland

Ireland

Israel

Italy

Japan

Korea

Latvia

Lithuania

Luxembourg

Netherlands

New Zealand

Norway

Poland

Portugal

Slovakia

Slovenia

Spain

Sweden

Switzerland

United Kingdom

United States

Appendix G – Critical Appraisal Skills Programme (CASP) of included studies – women's review

CASP Question	Canton, 2018	Dabrowski et al., 2017	Garthwaite et al., 2015	Harden and Dickson, 2014	Halligan 2019	Jolly, 2018	Lucas et al., 2013	MacLeod, 2018	McFadden et al., 2014	Mort, 2017	Neter et al., 2020
Clear relevant aim?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate methodology?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate research design?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate recruitment strategy?	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate data collection method?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reflexivity discussed?	Can't tell	Yes	Yes	Can't tell	Yes	Can't tell	No	Yes	Yes	Yes	Can't tell
Ethical issues been considered?	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Can't tell	Yes	Yes	Yes	Yes
Sufficiently rigorous data analysis methods?	Can't tell	Yes	Yes	Yes	Yes	Can't tell	No	Yes	Yes	Yes	Yes
Clear statement of finding?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Valuable research question?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Score Quality	**18 Good**	**20 High**	**19 Good**	**17 Good**	**20 High**	**17 Good**	**15 Good**	**20 High**	**20 High**	**20 High**	**19 Good**

Appendix G – CASP continued

CASP Question	Nielsen et al., 2015	O'Connell and Brannen, 2021	Ohly et al., 2018	Power et al., 2018	Purdam et al., 2016	Share, 2019	Soriano-Rivera, 2017	Spellman, 2021	Stack and Meredith, 2018	Spencer, 2015	van der Velde, 2019
Clear relevant aim?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate methodology?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate research design?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate recruitment strategy?	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate data collection method?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reflexivity discussed?	No	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Can't tell	Can't' tell	No
Ethical issues been considered?	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes	Can't tell	Can't tell	Yes
Sufficiently rigorous data analysis methods?	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Clear statement of finding?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Valuable research question?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Score Quality	**18 Good**	**20 High**	**20 High**	**20 High**	**15 Low**	**20 High**	**20 High**	**20 High**	**18 Good**	**18 Good**	**18 Good**

Appendix H – Empathetic model

I'm going to share with you a story about a woman called Mary from my project.

Mary is 35 years old. She lives in a city in England

Mary has three children. Two are in primary school and her youngest is 18 months old

Before children, Mary worked full-time as a school dinner lady in a primary school

Mary is not back to work yet, but her partner works full-time

They support their income with universal credit, access healthy start vouchers & free school meals for their children

Mary manages all the food for the family on a tight budget

The financial crises and recession in England, the changes to benefits systems, and the pandemic have restricted her food budget more

She is often worrying whether there will be enough food to feed the family, or if the food is healthy enough or if her children will like the food she gives them

Appendix I – Critical Appraisal Skills Programme (CASP) of included studies – children's review

CASP Question	Canton, 2018	Condon and McClean, 2017	Dalma et al., 2016	Fairbrother et al., 2012	Garthwaite et al., 2015	Hall et al., 2013	Hall & Perry, 2013	Harvey et al., 2016	Hayter et al., 2015	Jolly, 2018
Clear relevant aim?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate methodology?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate research design?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate recruitment strategy?	Yes	Yes	Yes	Yes	Can't tell	Can't tell	Yes	Yes	Yes	Yes
Appropriate data collection method?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reflexivity discussed?	Can't tell	Yes	Can't tell	Yes	Yes	No	No	Yes	Can't tell	Can't tell
Ethical issues been considered?	Yes	Yes	Yes	Yes	Yes	No	Can't tell	Yes	Can't tell	Can't tell
Sufficiently rigorous data analysis methods?	Can't tell	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Can't tell
Clear statement of finding?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Valuable research question?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Score **Quality**	**18** **Good**	**20** **High**	**19** **Good**	**20** **High**	**19** **Good**	**13** **Low**	**15** **Low**	**20** **High**	**18** **Good**	**17** **Good**

Appendix I– CASP continued

CASP Question	Laverty, 2019	Lovelace and Rabiee-Khan, 2015	Nielsen et al., 2015	O'Connell and Brannen, 2021	Power et al., 2021	Purdam et al.,2016	Share, 2019	Spencer, 2015	Zamora-Sarabia et al., 2019
Clear relevant aim?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate methodology?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate research design?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Appropriate recruitment strategy?	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Yes	Yes
Appropriate data collection method?	Yes	Can't tell	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Reflexivity discussed?	Yes	Yes	No	Yes	Yes	Can't tell	Yes	Can't' tell	Yes
Ethical issues been considered?	Yes	Yes	Yes	Yes	Yes	Can't tell	Yes	Can't tell	Yes
Sufficiently rigorous data analysis methods?	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Clear statement of finding?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Valuable research question?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Score **Quality**	**20** **High**	**19** **Good**	**18** **Good**	**20** **High**	**20** **High**	**15** **Low**	**20** **High**	**18** **Good**	**20** **High**

Appendix J – Ethical approval

Ethics Form Completed for Project: A qualitative exploration of food insecurity and its impact on diet and nutrition amongst women and their children in the North East of England Zoe Bell

Policy & Information Team, Newcastle University <noreply@limesurvey.org>
Mon 29/06/2020 15:49
To: Zoe Bell (PGR) <Z.Bell2@newcastle.ac.uk>

⚠ External sender. Take care when opening links or attachments. Do not provide your login details.

Ref: 4043/2020

Thank you for submitting the ethical approval form for the project 'A qualitative exploration of food insecurity and its impact on diet and nutrition amongst women and their children in the North East of England' (Lead Investigator: Zoe Bell). Expected to run from 29/06/2020 to 31/03/2022.

Based on your answers, the University Ethics Committee grants its approval for you to start working on your project. Please be aware that if you make any significant changes to your proposal then you should complete this form again, as further review may be required. This confirmation may be used within a research portfolio as evidence of ethical approval. Please note: this confirmation will be the only correspondence you should expect to receive as evidence of ethical approval. There will be no other confirmation provided. You may now proceed with research. If you have any queries, please review the internal and external ethics FAQ pages before contacting res.policy@ncl.ac.uk.

The UK government has placed strict restrictions on direct social contact in order to limit the spread of the COVID-19 coronavirus. Researchers must not begin - or continue to conduct - any project involving direct contact with human participants until the current restrictions are lifted. Any ethics approvals for such projects received automatically during this period will not be valid.

Best wishes

Research, Policy, Intelligence and Ethics Team,

Appendix K – Advert for recruiting frontline workers

Are you a frontline worker (third sector, health or social sector) helping women & children access food aid in the North East?

I am conducting research into the perspectives of frontline workers who have worked with people experiencing food insecurity during the pandemic.

Willing to interview for research on food insecurity?

Contact me for more information
z.bell2@ncl.ac.uk

Register interest
https://hw7wyg7dyr4.typeform.com/to/YkCjXcYS

Appendix L – Participant information sheet (PIS)

Information Sheet for frontline workers

A study exploring frontline workers views of the nature of food insecurity in a changing landscape

My name is Zoë Bell and I am a PhD Student from Newcastle University. I am asking you to take part in research. Before you decide if you want to take part or not, I want to tell you why this research is being done, and what you can expect if you take part. Please ask if you have any questions. Please feel free to talk about the study with others if you wish. Please contact me directly if you wish to find out more or participate.

Thank you for reading this.

What is the purpose of the research?

The aim of this research is to know more about frontline workers views on the nature of food insecurity in a changing landscape. This project is part of a wider PhD project that focuses on women and children experiencing food insecurity. I would like to ask some questions to understand from your perspective the circumstances that drive women to need food aid, perceived impact on women and their children's general health and wellbeing, challenges faced by services in helping this group and ways to mitigate food insecurity. I would like to learn from your experiences about what extra support you feel is needed to help families have a healthy and balanced diet. You will be asked to reflect on their personal experience of interacting with clients dealing with food insecurity.

Why have I been invited to take part?

You have been contacted because I want to interview people who are working on the frontline supporting women and their children access food in the North East of England.

Do I have to take part?

No. It is entirely up to you to decide whether or not you want to take part. If you decide to take part, you will be given this information sheet to keep. You will also be asked to provide written consent and/or provide verbal consent. If you decide to take part in the interview, you are still free to stop the interview at any time without giving a reason, or withdraw from the study. No questions will be asked if you stop or withdraw.

What will happen if I take part?

If you read this information sheet and decide you want to know more about the study or want to participate then contact me directly with the details at the end of this form. I will try to answer any questions you have about the interview or study. If you are happy to participate then we will arrange a time and date for the interview. The interview will be via telephone or an online virtual platform.

Newcastle University

What would the interview be like?

I will discuss the research with you, answering any questions you might have. If you are happy to take part then you will provide verbal or written consent prior to the interviewing starting.

How long would the interview take?

The time it takes for an interview varies, depending on how much you say, but most interviews last an hour. Remember, if you want to stop the interview at any time, you can do so without giving any reason at all.

What if I decide to withdraw after the interview has taken place?

If you decide to withdraw/leave the research, then any information collected prior to withdrawal will be kept. If you decide that withdrawal is something that you would like to do please contact me using the contact information on the sheet below.

What would happen after the interview?

I will copy the audio-recording onto a university file store accessible only to me. I will then delete the recording from the audio recorder. I will then type out everything you said in the interview. At the same time I will change your name to a different code name so that you are not identifiable. Any other names mentioned will be also be given a code. The digital recording and the typed up record (transcript), identified only by the code name, will both be kept on Newcastle university file store accessible only to me.

I will thank you for your time and ask whether you would be willing to be contacted to participate in a follow-up interview at a later date (a few months later). If willing, I will contact you a few months on and the process will be repeated. Participation in one interview is valuable to the research, so please don't feel you have to commit / decide about both interviews right away.

How would the researcher use the interview tape and transcript?

Before the interview you will be asked to provide verbal or written consent. You give consent to Newcastle University to using all the data provided from the interview within research, as part of my PhD thesis, to present in published articles and at conferences. You will not be identifiable in the presented findings from the study. It is very important that you take time to think about and discuss participating before you provide verbal or written consent.

I will use your name and contact details (telephone number or email) to contact you about the research study. The only individuals who will have access to personal information that identifies you will be me. All data use is strictly within the terms of the General Data Protection Regulations.

What are the possible benefits of taking part?

There will not be any direct benefits for you taking part in this type of research. However, there are possible wider benefits of the research to Gateshead and the services you are a part of. Potentially providing additional practical information for women accessing frontline services offering food parcels, as well as appropriate recommendations for policy changes.

What are the possible disadvantages and risks of taking part?

The research involves talking about sensitive topics due to the nature of the topic. For this reason, you don't have to answer any questions that don't feel comfortable answering. The interview can be stopped at any time. It can be stopped altogether or re-arranged, whichever you prefer.

Who is funding this research?

The Economic and Social Research Council (ESRC) are funding this research. The funding has been awarded as part of the researcher's 3.5 years PhD Studentship.

Has this study received ethical approval?

This study was approved by the Faculty of Medical Sciences Research Ethics Committee, part of Newcastle University's Research Ethics Committee. This committee contains members who are internal to the Faculty, as well as one external member. This study was reviewed by members of the committee, who must provide impartial advice and avoid significant conflicts of interests.

Who should I contact for further information relating to the research?

Zoë Bell (PhD Student)

z.bell2@ncl.ac.uk

Phone number: 07540857061

Baddiley Clark Building

Newcastle University

Newcastle Upon Tyne

NE2 4BN

Who should I contact in order to file a complaint?

Given the nature of the study it is highly unlikely you will suffer harm by taking part. However, the University has arrangements in place to provide for harm arising from participation in the study for which the University is the Research Sponsor. If you wish to complain about any aspect of the way in which you have been approached or treated during the course of this study, you should contact Clare Bambra at Newcastle University on 0191 208 8289 or email Clare.Bambra@newcastle.ac.uk.

Appendix M – Consent form

Newcastle University

Consent Form for research participants – Interviews

A study exploring frontline worker's experiences of the nature of food insecurity within a changing landscape

Thank you for your interest in taking part in this research. Please complete this form after you have read the Information Sheet and listened to an explanation about the research study. You will be given a copy of this Consent Form.

		Please initial box to confirm consent
1.	I confirm that I have read the information sheet dated *[15/06/2020]* (version 1.0) for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.	
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, *[without my medical care or legal rights being affected]*. I understand that if I decide to withdraw from the study any data I have provided up to that point will be kept.	
3.	I consent to the processing of my personal information *[name, job role]* for the purposes of this research study, as described in the information sheet dated *[15/06/2020] (version 1.0*)	
4.	I understand that some of the data I have provided may be included in reports and published in other work.	
5.	I consent to the retention of my personal information *[name, phone number, email address, job role]* for 1 year, for the purpose of being re-contacted at the end of the study with the results	
6.	I consent to being *audio* recorded and understand that the recordings will be destroyed from the audio recording device immediately after the audio recording has been uploaded onto a password-protected university server. It will be stored non-identifiably on a password- protected university server, accessible to only the researcher, kept for 3 years after the study. I understand that being audio recorded is optional and therefore is not necessary for my participation in this research.	
8.	I confirm that I am 18 years of age or older	
7.	I agree to take part in this research project.	
	Participant __________ __________ ______ *Name of participant* *Signature* *Date*	
	Researcher __________ __________ ______ *Name of researcher* *Signature* *Date*	

Appendix M continued - Follow-up consent form

Newcastle University

Consent Form for research participants – Follow-up interviews

A study exploring frontline worker's experiences of the nature of food insecurity within a changing landscape

Thank you for your interest in taking part in this research. Please complete this form after you have read the Information Sheet and listened to an explanation about the research study. You will be given a copy of this Consent Form.

		Please initial box to confirm consent
1.	I confirm that I have read the information sheet dated *[15/06/2020]* (version 1.0) for the above study, I have had the opportunity to consider the information, ask questions and I have had any questions answered satisfactorily.	
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, *[without my medical care or legal rights being affected]*. I understand that if I decide to withdraw from the study any data I have provided up to that point will be kept.	
3.	I consent to the processing of my personal information *[name, job role]* for the purposes of this research study, as described in the information sheet dated *[15/06/2020]* (version 1.0)	
4.	I understand that some of the data I have provided may be included in reports and published in other work.	
5.	I consent to the retention of my personal information *[name, phone number, email address, job role]* for 1 year, for the purpose of being re-contacted at the end of the study with the results	
6.	I consent to being *audio* recorded and understand that the recordings will be destroyed from the audio recording device immediately after the audio recording has been uploaded onto a password-protected university server. It will be stored non-identifiably on a password- protected university server, accessible to only the researcher, kept for 3 years after the study. I understand that being audio recorded is optional and therefore is not necessary for my participation in this research.	
8.	I confirm that I am 18 years of age or older	
7.	I agree to take part in this research project.	
	Participant _____________ _____________ ________ *Name of participant* *Signature* *Date*	
	Researcher _____________ _____________ ________ *Name of researcher* *Signature* *Date*	

Appendix N – Topic guide

Topic guide for interview with frontline workers

Date and place of interview: ________________________

Time start: _______________________

Time end: ________________________

Voice recorded? Yes No

Introduction

Thank you so much for agreeing to take part in this interview. I'm Zoë and I'm from Newcastle University. This study is exploring the perspectives of frontline workers on the nature of food insecurity within a changing landscape.

The aim of this interview is to understand from your perspective, as someone who works on the frontline:

1. The circumstances underlying food insecurity
2. Perceived impact on women and their children's general health and wellbeing
3. Ways to address food insecurity

Everything you say will be anonymous, even from my research team, so please be as honest as you can. The interview should last about an hour but if you'd like to stop it before then that is fine. If I ask anything that you are not comfortable with, please let me know and we can move on to a different question. With your permission I will be recording the interview and you won't be identifiable in the recording. This is to allow me to transcribe the interview so I can analyse it later.

Is there anything you'd like to ask me before we start the interview?

Introduction

These questions will serve as an icebreaker and provide context for the interview. They also provide an overview of how the frontline worker views the issue of food poverty.

Can you tell me about your role?
Prompts as necessary
- How long have you worked here?
- How has it changed since you have been here?

Has you view of food poverty changed since starting your role?

Circumstances / Encountering and addressing food poverty

The aim here is to elicit accounts of interactions between frontline workers and clients and how the landscape has changed.

Tell me about the women and children that come to your service / you work with
- Referrers (How did you become aware of food poverty as a problem for your client / patient?)
- How do you feel about the way in which this problem is addressed and your role in this?

Prompts as necessary:
- What are the circumstances that bring people to your service / co-operative
  - Housing, Employment, Education, Welfare System
- Is there anything that makes this worse?
- Do you find yourself dealing with the same people over a period of time?

Can you tell me about your experience of working on the frontline within the food aid system both before and during COVID-19?
- How has your service responded?
- Has your role changed?
- Has how you interact with women and children differed?
- Has the food you are able to provide changed? If so, how?

Can you tell me about how the landscape has impacted food insecurity?

General health and wellbeing

The aim here is to develop a picture of frontline workers' views of how food insecurity impacts the health and wellbeing of women and children experiencing it. These questions will also build a picture of how the services meet their client's needs.

In your experience how does having limited access to enough quality food affect women and children's health and wellbeing?

- How do find women cope (or not) with food insecurity?
- Can you think of any specific examples to share about how women cope?
- Do they have specific requirements / needs?

Challenges

The aim here is to understand frontline worker's views of what is needed to mitigate food poverty.

Based on your experience working with families, would anything make life easier for them to access healthy food in Gateshead?

- Benefits / challenges or barriers and facilitators to ideas mentioned
- Any potential learning from the pandemic?

Exit

Are there any other experiences you feel are important to raise?

*** Follow-up interview**

Will begin with a summary of the previous interview (provided by the researcher) and an invitation for the participant to report on anything that has changed or developed since interview one. Additional questions added on a participant-by-participant basis in order to follow-up on specific responses from previous interview. Questions will be refined to suit the participants more appropriately over time.

Appendix O – Timeline of policy changes during the height of the pandemic