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The Impact of Food Insecurity on Child Development in London and Islamabad

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Abstract

This dissertation examined how food insecurity impacts child development in two contrasting urban areas: London, a high-income area with robust welfare infrastructure, and Islamabad, a low- to middle-income area characterised by structural poverty and a weak institutional framework. A critical appraisal and synthesis of 20 studies published between 2018 and 2025 was conducted using a systematic review methodology. The results indicated that food insecurity presents in various ways in different settings, but the outcomes are consistently adverse, affecting the nutritional, educational, and psychosocial well-being of children. Food insecurity in Islamabad was closely linked to stunting, wasting, undernutrition, child labour, and low school attendance, with maternal empowerment being a key determinant. By comparison, in London, food insecurity was associated with the obesity paradox, food bank dependency, welfare disjunctures, and holiday hunger, which are attributable to institutional and policy failures.

The research also pointed out the shortcomings of existing institutional responses. The Free School Meals and Welfare provisions in London mitigate risk but create serious gaps, whereas the BISP and Ehsaas programmes in Pakistan offer partial support but are undermined by poor urban targeting and governance issues. Thematic analysis, informed by the Social Determinants of Health, Bronfenbrenner's Ecological Systems Theory, and Sen's Capability Approach, revealed that food insecurity not only denies children access to proper nutrition but also to fundamental abilities, such as education, social engagement, and psychological well-being.

The dissertation concludes with policy suggestions tailored to each context, as well as cross-cutting global lessons aligned with the Sustainable Development Goals (SDG 2 and SDG 3), emphasising the need for systemic change to safeguard the rights and development of children.

Keywords: Food insecurity, child development, London, Islamabad, nutrition, education, mental health, welfare, maternal empowerment, Sustainable Development Goals.

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Chapter 1 Introduction

1.1 Background and Context

Food insecurity—defined by the FAO (2023) as the lack of regular access to enough safe and nutritious food for normal growth and development—is a pervasive public health issue that disproportionately affects children's developmental outcomes. While the phenomenon is global, its urban manifestations in both high- and low-middle-income countries reveal divergent but equally concerning trends. According to the FAO's 2023 report, approximately 2.4 billion people globally were moderately or severely food insecure in 2022, a significant portion of whom reside in urban areas due to economic precarity and poor policy responses (FAO, 2023).

In the UK, food insecurity has doubled since the COVID-19 pandemic, affecting over 4 million children in 2023 (Trussell Trust, 2023). In London specifically, the Mayor's office reported that 24% of households with children experienced some level of food insecurity in 2022 (GLA, 2022). Meanwhile, Islamabad reflects a parallel crisis under different structural constraints. Around 36.9% of urban Pakistani households face moderate or severe food insecurity (Hameed et al., 2024), with stunting and undernutrition remaining endemic among preschool-aged children (Alsager et al., 2025).

Crucially, early childhood is a period of rapid neurodevelopment and physical growth, and inadequate nutrition during this phase has irreversible consequences (Naveed and Shah, 2024). Poor dietary diversity in children under five has been directly linked to impaired learning, weakened immunity, and emotional distress (Ajaz et al., 2025). In Pakistan, children from food-insecure urban households are more likely to exhibit delayed cognitive milestones and emotional regulation deficits (Aqib, 2023). In contrast, even marginal food insecurity in London has been linked to poor school performance and behavioural issues (Meadows et al., 2024; Singh and Uthayakumar-Cumarasamy, 2022).

Despite the UK's relative wealth, London's high cost of living has created structural inequality that echoes conditions in low- to middle-income cities, such as Islamabad. The issue intersects with SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being), demanding multi-scalar responses that address both systemic poverty and nutritional policy failures (Hashmi et al., 2024). Thus, examining child development in both contexts offers critical insight into how different socioeconomic systems shape the consequences of food insecurity for the youngest and most vulnerable.

1.2 Research Problem Statement

The world has been paying increasing attention to child health and nutrition. Food insecurity is a silent epidemic that is disproportionately affecting the cognitive, emotional, and physical growth of children. Empirical studies show that food-insecure children are at heightened risk of impaired brain development, poor academic performance, emotional dysregulation, and chronic illness, particularly when the deprivation occurs during early developmental windows (Gallegos et al., 2021; Alsager et al., 2025). The implications are generational—children raised in nutritionally deficient environments are more likely to experience life-long socioeconomic disadvantage and mental health struggles (Naveed and Shah, 2024).

The current literature is fragmented and heavily skewed toward either Global North contexts, where welfare mechanisms exist but inequality persists, or Global South settings, where the problem is often conflated with rural poverty and underdevelopment. Comparative analyses of the effects of food insecurity on child development in urban environments, such as London and Islamabad, are rare, despite both cities exemplifying growing intra-urban inequality (Hashmi et al., 2024; GLA, 2022).

The COVID-19 pandemic and the global economic downturn have further intensified this divide. In London, the number of people dependent on food banks doubled between 2020 and 2022 (Trussell Trust, 2023). Similarly, in Pakistan, urban inflation and food price volatility

pushed 36.9% of households into food insecurity (Hameed et al., 2024). These dynamics demand investigation into how diverse structural contexts mediate the same problem—chronic undernourishment of children in economically vulnerable households.

The problem is not simply one of nutritional deprivation, but a compounded failure of urban systems to safeguard child development during times of crisis. A comparative lens is essential to unpack the structural and policy-level contributors to this enduring public health emergency.

1.3 Research Question

Primary Research Question:

- How does food insecurity impact child development in London and Islamabad?

Sub-questions:

- What are the major drivers of urban food insecurity in these cities?
- How does it affect children's cognitive, emotional, and physical development?
- What lessons can be drawn to inform future policy and practice?

1.4 Research Aims and Objectives

Research Aim:

This study aims to analyse the effects of food insecurity on the physical, cognitive, and emotional development of children in London and Islamabad.

Objectives:

- To identify key drivers of food insecurity in both cities.
- To compare the effects on nutrition, learning outcomes, and mental health.
- To assess institutional responses, policies, and support systems.
- To recommend culturally appropriate interventions for child food insecurity.

1.5 Rationale for Study

The rising prevalence of food insecurity in urban settings has become a critical public health concern, yet the comparative dimension between developed and developing urban contexts remains woefully underexplored. This study addresses a notable gap by juxtaposing London and Islamabad—two urban capitals shaped by contrasting economic systems yet increasingly vulnerable to food insecurity due to widening urban inequalities (Hashmi et al., 2024; GLA, 2022).

Islamabad, despite being Pakistan's political and administrative capital, is significantly underrepresented in global food security literature. Most studies on food insecurity in Pakistan focus on rural provinces, thereby excluding urban poor populations whose nutritional deprivation is often masked by aggregate development indicators (Ali, 2021; Alsager et al., 2025). This research brings Islamabad into critical focus as a city grappling with rapid urbanization, inflation, and weak public health provisioning—factors that exacerbate child malnutrition and cognitive delays (Hameed et al., 2024).

While nutritional deficiency is widely documented, the cognitive and emotional consequences of food insecurity remain insufficiently investigated, particularly in comparative urban contexts (Paquin et al., 2021). Children experiencing food insecurity show higher rates of anxiety, behavioral disorders, and academic underperformance, yet few public health interventions explicitly address these dimensions (Ke and Ford-Jones, 2015; Naveed and Shah, 2024).

This study is also timely: both cities experienced post-COVID surges in household food insecurity, underscoring systemic weaknesses in welfare systems (Trussell Trust, 2023; Idris, 2021). By aligning with SDGs 2 and 3, this dissertation offers a framework to guide public health practitioners and policymakers in crafting localized yet globally informed responses to urban food inequities.

1.6 Research Scope

This study focuses exclusively on children under the age of 18 residing in urban households in London (UK) and Islamabad (Pakistan), providing a cross-contextual examination of how food insecurity affects child development. The research is restricted to secondary data sources and will employ a systematic literature review (SLR) methodology, limiting its scope to peer-reviewed articles and grey literature published between 2015 and 2025. This temporal range enables the inclusion of literature addressing both pre- and post-COVID-19 dynamics, which are crucial for understanding the recent exacerbations of food insecurity (Frongillo et al., 2022; Hameed et al., 2024).

The study excludes rural populations, adult cohorts, and primary data methods such as interviews or field surveys, ensuring ethical simplicity and practical feasibility. Additionally, it will not engage in intervention or programme evaluation, instead prioritizing critical synthesis of developmental outcomes in relation to food security metrics.

1.7 Chapter Summary

This chapter outlined the background, research problem, and rationale for examining the impact of food insecurity on child development in the urban contexts of London and Islamabad. It established the conceptual boundaries of the study, clarified its relevance to the Sustainable Development Goals (SDGs), and articulated the critical gaps in the existing literature—particularly the lack of cross-contextual analyses between the Global North and South. By focusing on under-18 populations in urban households, the chapter reinforced the importance of addressing food insecurity as both a developmental and structural issue. The next chapter will provide a detailed critical review of existing evidence, theories, and gaps.

Chapter 2 Literature Review

2.1 Introduction

This literature review critically synthesises existing scholarship on the impact of food insecurity on child development within urban settings, with a specific focus on London and Islamabad. It examines the intricate relationship between nutritional deprivation and developmental outcomes—cognitive, emotional, and physical—through a comparative lens, thereby addressing an underexplored aspect of global public health. The review draws upon peer-reviewed studies, institutional reports, and grey literature, prioritizing research that reflects post-pandemic shifts in urban food insecurity.

Four key themes guide this review: (1) global and local trends in urban food insecurity; (2) developmental consequences of undernutrition; (3) socioeconomic and policy drivers unique to London and Islamabad; and (4) the pandemic's intensifying effects on food access. These themes were selected to provide a comprehensive understanding of the problem—from its structural causes to its developmental outcomes.

The literature is framed by the Sustainable Development Goals, particularly SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being), as both cities struggle to meet these benchmarks despite starkly different resource environments. This chapter not only identifies gaps in current research but also establishes a conceptual foundation for understanding how diverse urban systems produce similar risks to child development, particularly through the lens of food insecurity.

2.2 Urban Food Insecurity – Global and Local Perspectives

Food insecurity, as defined by the Food and Agriculture Organization (FAO, 2023), refers to the lack of "regular access to enough safe and nutritious food for normal growth and development and an active and healthy life." This issue is no longer confined to low-income

rural areas but is intensifying in urban environments globally, driven by structural inequalities and socioeconomic shocks (Frongillo et al., 2022; Carducci, 2022).

In London, a city located within a high-income welfare state, paradoxically, 24% of households with children experienced food insecurity in 2022, with the burden falling heavily on ethnic minorities and single-parent families (GLA, 2022). The Trussell Trust (2023) reported a record 2.1 million emergency food parcels distributed between 2022 and 2023, underscoring the growing prevalence of poverty despite a robust GDP. Conversely, Islamabad, the capital of a lower-middle-income country, presents a different but equally dire picture. Hameed et al. (2024) found that 36.9% of urban households in Pakistan experienced moderate to severe food insecurity, often leading to chronic child malnutrition and stunting (Alsager et al., 2025; Nawab et al., 2021).

What links both cities is not their GDP, but the urbanization paradox—economic growth coexists with growing food insecurity due to poor social safety nets, housing precarity, and inflation (Idris, 2021; Hashmi et al., 2024). In Islamabad, food insecurity is exacerbated by political instability and commodity inflation, with food prices rising over 18.3% in 2023 alone (Pakistan Bureau of Statistics, 2023). Meanwhile, in London, the cost-of-living crisis has exacerbated nutritional inequalities, particularly following cuts to the Universal Credit system (Reeves and Loopstra, 2021; Johnstone and Lonnie, 2024).

The literature identifies several structural determinants contributing to urban food insecurity. These include housing insecurity, which forces households to choose between rent and food (Snell et al., 2018; Thompson, 2022); wage stagnation, particularly in the informal sector; and inadequate state interventions (Hashmi et al., 2024). In both cities, public feeding programs—such as Free School Meals in the UK and Ehsaas Kifalat in Pakistan—have failed to provide consistent access to nutritious meals for vulnerable children (Mehdi, 2024; Farooq et al., 2024; Shields, 2021).

Another issue lies in the methodological fragmentation in measuring food insecurity. The Household Food Insecurity Access Scale (HFIAS) and the Food Insecurity Experience Scale (FIES) are widely used but not without critique. While HFIAS focuses on access dimensions, it overlooks the psychosocial impacts, particularly in children (Coates et al., 2007). FIES, adopted by the FAO, facilitates cross-national comparisons but still relies on adult perceptions and lacks sensitivity to intra-household inequities, such as gender- or age-based food allocation (Ballard et al., 2013; Saint Ville et al., 2019). Additionally, dietary diversity scores, often used in Pakistan, provide a limited view of nutrition that overlooks the emotional and educational impacts (Ajaz et al., 2025).

Few comparative studies examine how similar urban phenomena—such as rising rent, school closures, and unstable employment—impact food access differently in high- versus low-income countries. According to Naveed and Shah (2024), in both cases, structural determinants like urban planning, the extent of welfare states, and health literacy play a critical role in mediating food access. The Capability Approach, as advocated by Sen, suggests that food insecurity is not only a question of calories but also a question of weakened agency and loss of life opportunities (Gombert et al., 2017; Wells et al., 2021).

To conclude, food insecurity in urban areas in both London and Islamabad is not an exception but a symptom of more fundamental systemic failures. Drivers context-specifically influence it, but its outcomes, particularly in terms of child development and equity, are convergent worldwide. Therefore, addressing food insecurity requires a contextual, intersectional, and rights-based approach to public health.

2.3 Child Development Outcomes – Cognitive, Physical and Emotional

The impact of food insecurity on child development is extensive and multidimensional, affecting cognitive abilities, physical growth, and emotional well-being in both the short and long term. The extensive body of research has demonstrated that inadequate or erratic access

to healthy food during childhood is a significant impediment to the development of crucial cognitive abilities, such as memory, attention, and executive functioning. For example, González-Fernández and Le (2024), in their study of Pakistani children, found that those exposed to chronic food insecurity performed substantially worse in developmental assessments by age five. This finding aligns with UK-based evidence where children in food-insecure households demonstrate lower academic attainment and reduced concentration in classroom settings (Loopstra and Lambie-Mumford, 2023; Brown et al., 2023). These effects are not transient. Poor nutrition during critical developmental periods can permanently disrupt neurological growth, including the development of the hippocampus and prefrontal cortex (Sideropoulos et al., 2024), which plays a pivotal role in academic and behavioural functioning.

Physical growth is equally compromised. According to UNICEF (2023), approximately 40.2% of Pakistani children under five are stunted—a condition resulting from chronic undernutrition—while only about 6% of children in the UK are affected. However, this national figure obscures significant disparities within London, where children in the most deprived boroughs face much higher risks (Public Health England, 2022). Chronic food insecurity is a leading driver of stunting and wasting in low-income settings, exacerbated by poor maternal nutrition and limited healthcare access (Ali, 2021). Munawar et al. (2024) highlighted that undernourished children in urban South Asia not only show growth deficits but also exhibit slower motor skill acquisition. In contrast, high-income settings, such as the UK, often face a paradoxical dual burden of malnutrition, where food insecurity coexists with obesity due to the overconsumption of low-cost, nutrient-poor foods (Iqbal and Ali, 2021). This nutritional imbalance compounds the risks to physical and cognitive development.

The emotional and psychosocial consequences of food insecurity are no less significant. Children living in food-insecure households experience higher rates of anxiety, depressive symptoms, aggression, and social withdrawal (Fernandes and Le, 2021). The constant stress of

hunger or inadequate nutrition is biologically translated into elevated cortisol levels, which impair emotional regulation and increase susceptibility to behavioural disorders (Frongillo et al., 2022). In the UK, data suggest that food-insecure children are more than twice as likely to exhibit conduct problems, hyperactivity, and poor peer relationships (Aceves Martins et al., 2018). Similar observations were made in Islamabad, where preschool-aged children in chronically food-insecure homes displayed heightened emotional reactivity and lower sociability (Ijaz, 2021). The role of caregivers in mediating these outcomes is critical. Has et al. (2024) argue that maternal stress related to food scarcity negatively impacts caregiving quality, thereby compounding the emotional risks faced by children.

The distinction between acute and chronic food insecurity further complicates these developmental outcomes. Acute insecurity—such as that caused by sudden inflation or political unrest—can temporarily reduce food access but may be mitigated with timely intervention. Chronic insecurity, however, results in cumulative developmental harm, particularly during the first 1,000 days of life (Ali, 2021; Abidi et al., 2021). Suboptimal nutrition over an extended period is linked to not just physical stunting but also long-term cognitive impairment and lower school preparedness (González-Fernandez et al., 2024). The effects tend to be more significant in children under the age of five, but may recur during adolescence when nutritional demands increase again.

The effects of food insecurity on development are also mediated by gender and age. In Pakistan, the risk of girls in food-insecure families being underfed is greater because of deeply rooted gender norms, which result in increased stunting among females (Munawar et al., 2024). Meanwhile, in London, boys living in deprived areas are more likely to have externalising behaviours, which points to a gendered pattern of emotional expression (Silva, 2024). Moreover, young children and infants are especially vulnerable to nutritional deprivation because of their rapid developmental pattern. However, teenagers are also susceptible to the

mental and emotional effects of food insecurity, particularly when schools do not offer school meal programmes (Trussell Trust, 2023).

The most potentially important, yet understudied, aspect of this relationship is that it is two-way. Food insecurity not only affects child development, but children who have chronic health or developmental problems can increase household vulnerability. The extra burden of a child with developmental delay in low-income Pakistani families may result in income loss, further contributing to food insecurity (Ademosu et al., 2021). Likewise, households in the UK that have children with special educational needs are at a disproportionately high risk of experiencing food hardship, particularly single parents (Reeves and Loopstra, 2020). This cyclical relationship continues to perpetuate intergenerational poverty and chronic public health inequities.

The evidence is a grim picture: food insecurity is not only a nutritional problem but also a developmental crisis with far-reaching ramifications. It is both high time and necessary, given the multidimensional vulnerabilities faced by children in London and Islamabad, that we undertake integrated, age-sensitive, and equity-driven policies. The SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being) are not only at stake, but the long-term potential of the populations in urban poverty relies on overcoming developmental risk to millions of children.

2.4 Socioeconomic and Policy Drivers in London and Islamabad

The two settings are emblematic of the weaknesses inherent in the ways the nutritional vulnerability of children is addressed in response to socioeconomic disparities, with divergent socioeconomic structures and policy responses playing a key role in influencing urban food insecurity in both London and Islamabad. Despite the United Kingdom having historically a robust welfare system founded on universal healthcare and income supplements, the austerity policies since 2010 have undermined its capacity to combat food insecurity. The Free School Meals (FSM) programme is among the most prominent interventions targeting school-aged

children in low-income families; however, it is not evenly covered. Research indicates that over 800,000 children living in poverty in England alone are unable to access FSM due to its strict income-based eligibility criteria and are thus exposed to persistent starvation (Child Poverty Action Group [CPAG], 2023). Conversely, Pakistan Ehsaas and Benazir Income Support Programme (BISP) are ambitious efforts to alleviate poverty through state efforts. While BISP provides unconditional cash transfers to women in poor households, the expanded Ehsaas initiative includes conditional transfers, nutritional support, and ration subsidies. Despite this, issues of corruption, political discontinuity, and lack of urban targeting undermine their efficacy (Siyal and Mahesar, 2025; Jadoon et al., 2024).

Inflation emerges as a transnational stressor. In Pakistan, inflation surged to 31.4% in 2023, with food inflation exceeding 45% in urban areas, significantly eroding household purchasing power (Pakistan Bureau of Statistics, 2023). Although Ehsaas introduced emergency relief during the COVID-19 pandemic, it was often insufficient in the face of the compounding costs (Ahmed and Siddique, 2024). Meanwhile, the UK faces its own inflation-driven crisis, with food prices rising by 19.3% in 2023, disproportionately affecting lower-income Londoners (Office for National Statistics [ONS], 2023). The rising cost of living—combined with stagnant wages and cuts to Universal Credit—has driven record numbers to food banks, including families with employed adults (Trussell Trust, 2023).

Political stability also plays a crucial role in institutional capacity. Islamabad's welfare architecture is fragmented, often reactive, and underfunded. Provincial disparities, frequent leadership changes, and weak urban planning have hindered the consistent implementation of food relief measures (Rasul and Karki, 2024). In London, decentralization of food assistance to local authorities has created a postcode lottery, where access to FSM, food vouchers, or local grants varies significantly by borough (Barlow et al., 2020). Moreover, public sector

provisioning has been hollowed out through austerity, resulting in a greater reliance on third-sector actors to fill the welfare gap.

Non-governmental organisations (NGOs), charities, and community kitchens are playing increasingly central roles in both cities. In the UK, FareShare and the Felix Project redistribute surplus food to schools and charities; however, their reliance on corporate donations and volunteer labour raises concerns about sustainability and dignity (Lambie-Mumford, 2019). Similarly, in Pakistan, religious trusts and civil society actors, such as the Saylani Welfare Trust, provide daily meals to the urban poor, often filling the gap left by the absence of state support (Ahmed and Siddique, 2024). However, informal provisioning lacks regulation, nutritional oversight, and integration with national health objectives (Mumtaz and Whiteford, 2021).

Crucially, the definitional boundaries of poverty in both contexts distort policy responses. The UK uses a relative poverty measure—households earning less than 60% of the median income—while Pakistan applies absolute thresholds tied to caloric intake or income per capita. These frameworks ignore multidimensional deprivation indicators such as housing precarity, education gaps, and food access variability (Ali and Hussain, 2020; CPAG, 2023). As such, many households experiencing food insecurity in London are classified as non-poor. At the same time, urban poverty in Islamabad remains underreported due to the invisibility of informal settlements and internal displacement (Niazi, 2023).

The two systems differ, they do not address the structural causes of food insecurity, such as precarious employment, rent inflation, and fragmented welfare governance. Both cities are moving towards more residual and targeted social safety nets that leave out large segments of the working poor or informal labourers. Although symbolically powerful, FSM and BISP are operationally limited in scope, commonly failing to reach nutritionally vulnerable children due to bureaucratic barriers or eligibility requirements (Qadoos et al., 2023; CPAG, 2023). In

addition, neither of the two governments has adopted universal or rights-based food security structures, which would empower citizens and enhance accountability.

To conclude, urban food insecurity in both London and Islamabad is not only a consequence of income failure, but also a result of institutional architecture, policy design, and political commitment failures. Although context-specific histories and ideologies shape them, welfare regimes have a common failure: they are becoming more and more out of touch with the realities of urban hunger and child deprivation. Unless the paradigm shifts towards inclusive, multidimensional, and rights-based approaches, the two cities risk exacerbating the health inequities that extend beyond generations.

2.5 Post-COVID Dynamics of Food Insecurity

The COVID-19 pandemic served as a global stress test, exposing and intensifying underlying food insecurity in cities such as London and Islamabad. Lockdowns, income losses, and school closures disrupted supply chains and food access, disproportionately affecting children in low-income households. In London, over 2.1 million emergency food parcels were distributed in 2020–21, marking a 128% increase from pre-pandemic levels (Trussell Trust, 2021). In Islamabad, household food insecurity rose to 42.3% by the end of 2021, largely due to job losses and inflation spikes (Khaliq et al., 2020; Khan, 2021).

The most immediate impact was due to employment disruption. In the UK, low-paid workers in retail, hospitality, and social care—often parents—were among the hardest hit, leading to rising child food poverty (CPAG, 2021). In Pakistan, informal and daily wage labour collapsed during lockdowns, resulting in food access being eliminated for millions who depended on daily income (Khaliq et al., 2020; Abbass et al., 2022). Simultaneously, food inflation in Pakistan surged to over 17% in 2020 and remained high throughout 2021–22, affecting the urban poor with limited price insulation (Pakistan Bureau of Statistics, 2021). The UK experienced food price inflation of 19.3% in 2023, the highest level in 45 years, which

disproportionately affected single-parent households and ethnic minorities in London (ONS, 2023).

School closures further magnified nutritional deprivation. The UK's Free School Meals program, although expanded to include food vouchers, was unevenly implemented, leaving many vulnerable children without access to daily meals (CPAG, 2021; Parnham et al., 2020). In Pakistan, school feeding programs were initially limited to a few NGOs and had not been scaled nationally. This led to hidden hunger, especially among urban children in slums and informal settlements (Idris, 2021; Abas et al., 2022). Learning loss exacerbated this nutritional gap, as malnourished children lacked both cognitive stimulation and an adequate diet, further worsening their developmental outcomes (Husain et al., 2023).

Despite government responses, interventions were fragmented. In the UK, digital vouchers and food hubs offered temporary relief, but these were inconsistent across boroughs and inaccessible to some families (Lambie-Mumford and Shaw, 2025). Pakistan introduced the Ehsaas Emergency Cash program, which reached over 16 million families; however, corruption, delays, and weak urban targeting diluted its impact (Abbass et al., 2022; Babar and Malik, 2022). Community kitchens and charity-based food distributions temporarily bridged the gap in both cities, but these ad hoc responses lacked sustainability and integration with public health goals (Mumtaz and Whiteford, 2021).

Finally, COVID-19 also demonstrated that food insecurity is not a question of supply but a breakdown of equitable provisioning systems. In London and Islamabad, structural vulnerabilities, including informal employment, weak welfare states, and inadequately funded education, converted global shocks into local hunger crises, highlighting the urgency of systemic reform.

2.6 Theoretical Framework

The research is grounded in a multidisciplinary theoretical framework that examines the interplay between food insecurity, health disparities, and child development in urban contexts. The Social Determinants of Health (SDH) framework provides a guiding paradigm, placing food insecurity not as a dietary problem, but as a health inequity within systems dependent on socioeconomic status (Marmot et al., 2008). SDH theory focuses on the effects of income, housing, education and neighbourhood conditions on access to sufficient nutrition and, consequently, developmental opportunities. Children from lower socioeconomic backgrounds in both London and Islamabad face a compounded disadvantageous position, as they are exposed to unhealthy diets, inadequate housing, and poorly funded schools, all of which negatively impact their health and developmental trajectories (World Health Organisation [WHO], 2021; Frongillo et al., 2022).

In addition to SDH, the concept of Ecological Systems Theory, developed by Bronfenbrenner, conceptualises child development in the context of embedded environments, starting with the microsystem (family and school), then the mesosystem (cultural traditions and community contexts), and finally the macrosystem (economic policies and cultural norms). Each of these layers is affected by food insecurity. At the microsystem level, parental stress caused by hunger can impact caregiving; at the mesosystem level, inadequate school feeding programmes can hinder learning and health assistance; and at the exosystem and macrosystem levels, austerity policies or disjointed welfare systems can influence household vulnerability (Bronfenbrenner, 1979; Burakgazi, 2025). This stratified examination is particularly helpful in making comparisons between the institutional complexity of London and the infrastructural vulnerability of Islamabad.

Finally, Amartya Sen's Capability Approach reframes food insecurity as a deprivation of basic freedoms—the freedom to live a nourished, dignified life and achieve one's developmental

potential (Sen, 1999). Rather than viewing hunger solely through caloric metrics, Sen's model foregrounds agency, empowerment, and intergenerational justice (Kjosavik, 2021). Children deprived of adequate nutrition are not just at risk of stunting or illness; they are systematically denied the capabilities to learn, play, and thrive.

These frameworks provide a nuanced and critical understanding of how structural, relational, and institutional factors converge to shape child vulnerability to food insecurity in urban settings.

2.7 Literature Gap

Despite extensive scholarship on food insecurity and child health, significant gaps persist in the comparative urban public health literature, particularly between high-income and low- to middle-income contexts. Most existing studies tend to focus on either Global North urban environments, such as London (e.g., Loopstra and Reeves, 2020), or rural regions in Global South countries, leaving a critical empirical and theoretical gap in cross-country urban analyses. Although Islamabad is the capital of Pakistan, it is underrepresented in indexed research databases, and most studies on nutrition are conducted in other provinces, including Punjab or Sindh (Jadoon et al., 2024; Alsager et al., 2025).

Further, studies have been found to focus more on anthropometric and dietary implications of food insecurity rather than on the emotional and cognitive consequences of food insecurity in children. Research articles by Frongillo et al. (2022) and Fernandes and Le (2021) emphasise the connection between hunger and mental health, yet they rarely incorporate the results into the comparative policy debate. Additionally, the majority of available data are cross-sectional, which heavily rely on quantitative indicators and do not capture the context-specific nuances or the experiences that children undergo (Lambie-Mumford and Shaw, 2025; Munawar et al., 2024).

Longitudinal, multi-method, and child-centred studies that examine the interplay between food insecurity, caregiving, education, and social identity are also lacking. This limits our understanding of the long-term effects of chronic undernutrition and emotional stress on child development. Consequently, existing policies are data-rich yet insight-poor, failing to address the multidimensionalities of urban child hunger. This dissertation directly addresses these gaps by providing a comparative, theoretically informed study that prefigures the holistic health of children within two contrasting urban systems.

2.8 Conceptual Framework

The conceptual framework graphically illustrates the interconnected pathways through which food insecurity, driven by structural and contextual forces, impacts child developmental outcomes in both London and Islamabad. Fundamentally, the framework posits that food insecurity is the independent variable, which is influenced by household income, housing insecurity, and parental employment. The broader contextual determinants affecting these

variables include economic shocks (e.g., inflation, pandemics) and policy responses (e.g., welfare programmes, school feeding schemes).

The model describes three main domains of child outcomes: cognition, emotional, and physical, as the dependent variables that are directly and indirectly influenced by food insecurity. Mediating variables, such as caregiver stress and access to school, explain how nutritional deprivation translates into developmental harm, while moderating factors like gender, age, and household structure influence the severity of the outcomes.

This framework informs the literature synthesis by enabling the thematic categorisation of studies according to variable relationships—e.g., the impact of food insecurity on emotional health versus policy buffers. It also underpins the PRISMA-aligned inclusion criteria for the systematic review, guiding the selection of studies published between 2015 and 2025, focusing on urban children under 18, and addressing at least one of the three outcome domains.

By centring on both structural causes and developmental effects, the framework ensures that future findings remain grounded in systems-level thinking and exhibit cross-contextual relevance.

2.9 Chapter Summary

This chapter synthesized multidisciplinary literature exploring the relationship between food insecurity and child development in the urban contexts of London and Islamabad. It examined the global-local dynamics of urban hunger, revealing how structural inequalities and policy gaps manifest differently across cities. The review demonstrated that food insecurity harms children's cognitive, emotional, and physical outcomes, often mediated by socioeconomic conditions and institutional responses. Key themes highlighted the influence of welfare systems, the compounding effects of COVID-19, and the limitations of current metrics and interventions. Theoretical frameworks—such as SDH, Bronfenbrenner's ecology, and Sen's

capabilities—provided critical tools for interpreting child vulnerability in complex urban systems.

The review highlighted significant gaps, including the underrepresentation of Islamabad, the lack of cross-country urban analyses, and limited attention to emotional and cognitive dimensions. These insights justify the comparative, theory-driven approach of this study. The next chapter outlines the methodology, including the systematic review design and inclusion criteria that structure the forthcoming analysis.

Chapter 3 Methodology

3.1 Introduction

This chapter outlines the methodological approach employed in conducting a systematic review exploring the relationship between food insecurity and child development in the urban contexts of London and Islamabad. It provides a rationale for adopting a desk-based, secondary data design and details the systematic processes used to identify, select, and critically appraise relevant literature. The chapter explains the epistemological stance, research design, inclusion and exclusion criteria, and ethical considerations underpinning the study. This chapter provides transparency and rigour by following the PRISMA guidelines, and it forms the basis of synthesising findings in a systematic and reproducible way in later chapters.

3.2 Research Philosophy / Paradigm

This study adopts a post-positivist approach to epistemology, which acknowledges the existence of objective truth but recognises that it can only be approximated through rigorous evidence-based methodologies, including systematic reviews. In contrast to positivism, which presupposes unconditional objectivity, post-positivism recognises the impact of researcher bias, methodological constraints, and contextual differences (Bryman, 2016). The ontology of the study is consistent with critical realism, according to which the phenomena of social life, including food insecurity, are determined by the latent structures (e.g., economic policy, welfare systems), which are not necessarily visible (Creswell and Poth, 2016).

This philosophical stance aligns with the systematic review (SR) approach, which integrates empirical evidence from various studies to construct an evidence-based picture of real-world issues. In this regard, the creation of knowledge is not solely a matter of discovery, but rather a critical synthesis of existing knowledge. The objective is not to generate a single piece of truth, but to discover patterns, contradictions, and gaps in the current literature on food

insecurity and child development in urban settings. Systematic reviews, viewed through the lens of a post-positivist approach, provide a framework that enables questioning the strength of evidence without being insensitive to its weaknesses (Thomas, 2022).

This paradigm underpins the objective of producing subtle, transferable knowledge that informs theory, policy, and practice in both London and Islamabad.

3.3 Ethical Considerations

No primary data collection is involved in this study, and ethical rigour is a necessity in carrying out and presenting a systematic review. Farrimond (2012) emphasises that ethics in secondary research extend beyond participant consent to include integrity in the source, analysis, and presentation. Since the review relies solely on publicly available and peer-reviewed literature, there were no ethical requirements, and this practice aligns with the protocols of BERA (2024) regarding desk-based research.

Ethical responsibility entails being transparent in data extraction, avoiding selective citation, and refraining from exaggerating conclusions due to limitations in evidence. A misinterpretation of research results, especially in sensitive areas such as child food insecurity, can contribute to the perpetuation of stigma or the development of misguided policies (James and Busher, 2015). Consequently, this study maintains an audit trail of inclusion/exclusion choices and consistently applies quality appraisal tools across sources to minimise bias. Following these principles will maintain ethical responsibility and enhance the credibility of the review's contribution to the discourse of public health.

3.4 Research Approach

Social science research commonly follows a quantitative, qualitative, or mixed-methodology, based on the epistemological objectives of the research. Nevertheless, the present study employs a Systematic Review (SR) methodology, a systematic approach to secondary research

that synthesises the existing literature through transparent and replicable procedures. Compared to conventional reviews, SRs critically evaluate evidence according to predetermined criteria, minimising bias and facilitating more rigorous insights (Bell et al., 2022).

The dissertation is especially appropriate because a systematic review is the most suitable method for comparing the developmental consequences of food insecurity in urban children in London and Islamabad, where primary data collection is not feasible and ethically complicated. SRs enable researchers to identify common patterns, inconsistencies, and gaps across a wide range of literature, providing a holistic view of policy-relevant problems (Saunders et al., 2009). This methodology is consistent with the post-positivist approach of the study, which respects the importance of empirical evidence, but also recognises contextual constraints of urban public health systems.

3.5 Research Strategy

The research is based on a deductive research approach, in which specific research questions direct the systematic search and selection of relevant literature, as well as its synthesis. As is customary in systematic reviews, the objective is to subject current theoretical models, like the Social Determinants of Health and Capability Approach, to empirical evidence (Thomas, 2022). The inductive method (theory development based on emergent data) is inapplicable in this case due to the lack of primary data collection and the predetermined nature of the inclusion criteria. Deductive reasoning is consistent, transparent, and comparable across a wide range of sources (Okoli, 2023), which contributes to policy-relevant knowledge in London and Islamabad.

3.6 Study Design – Systematic Review

The proposed research will be conducted using a Systematic Review (SR) design, which is a more structured and transparent way of summarising available literature, as opposed to traditional or narrative reviews, which are more subjective and less reproducible. In comparison with narrative reviews, SRs follow a rigid protocol, which includes clearly stated research questions, a list of inclusion and exclusion criteria, database search strategies, and quality appraisal tools (Moola et al., 2017). This systematic approach minimises bias, enhances replicability, and makes the generalisation of results in diverse settings, including London and Islamabad, more credible.

The SR method is particularly suitable for the topic of urban food insecurity and child development due to the rich but disconnected literature available. It enables the researcher to identify general trends, gaps, and inconsistencies in the findings, including emotional, cognitive, and physical impacts, across socioeconomically diverse urban environments. The SRs also enable a clear audit trail, which increases the plausibility of findings and policy implications (Creswell and Miller, 2000).

Despite its advantages, the systematic review method has limitations. Publication bias is a significant issue, as negative or inconclusive results in studies may be underrepresented in the published literature. Moreover, when the inclusion criteria are too biased towards peer-reviewed quantitative research, the SR design may ignore potentially useful qualitative data. However, this review addresses these risks by combining both quantitative and qualitative evidence without compromising methodological consistency (Campbell et al., 2019). Overall, the SR design provides a well-grounded, evidence-based model for urban public health studies.

3.7 Data Collection Method

In this study, a desk-based data collection strategy is employed, consistent with the systematic review design. There is no primary or field data collection, as the study utilises secondary

sources, including peer-reviewed journal articles, institutional reports, and grey literature from organisations such as WHO, FAO, and UNICEF. This method aligns with the synthesis of evidence on food insecurity and child development, eliminating the need to engage human participants, which would complicate ethical considerations. The approach ensures thorough and cost-efficient data aggregation, facilitating global and local comparisons between London and Islamabad based on published empirical studies and policy reports.

3.8 Search Strategy

A systematic and reproducible search strategy was developed to ensure thorough coverage of the pertinent literature. A variety of academic databases, including PubMed, EMBASE, CINAHL, and Google Scholar, were searched, supplemented with grey literature provided by UNICEF, WHO, and FAO. The results were narrowed down using Boolean operators (AND, OR, NOT), and a filter was applied to limit the results to the period 2015-2025, the English language only, and urban settings involving children aged 0-18.

The search terms were a combination of free-text keywords and Medical Subject Headings (MeSH) that included: food insecurity, child development, urban health, London, Islamabad, stunting, school meals, and nutritional deprivation. The use of MeSH and keyword strategy maximised sensitivity and specificity (Hart, 2001). This stringent design aligns with evidence-based research best practices, which enhance the reliability, transparency, and reproducibility of the review (Creswell and Poth, 2016; Bell et al., 2022).

3.9 Framing the Research Question (PICO)

The research question was structured using the PICO framework (Population, Intervention, Comparison, and Outcome), and the search strategy was designed in accordance with systematic review conventions. PICO assists in optimising inclusion criteria, refining focus, and improving evidence synthesis replicability. The Population in this study refers to children

aged 0 to 18 years residing in city settings, specifically London (UK) and Islamabad (Pakistan). The intervention involves exposure to different dimensions of food security, including availability, accessibility, and nutritional adequacy. The Comparison is drawn across two distinct socioeconomic and policy settings: a high-income country (the UK) and a lower-middle-income country (Pakistan). The Outcomes of interest span cognitive, emotional, and physical developmental domains.

This framework allows the study to systematically compare literature across contrasting urban contexts while maintaining conceptual coherence with child public health and social determinants of health theories.

Table 1: PICO Framework

P	Children (0–18) in urban areas (London, Islamabad)
I	Food insecurity exposures
C	Across high-income (UK) vs low-middle-income (Pakistan)
O	Cognitive, emotional, and physical development

3.10 Database Search and Hand Search Procedure

The database search was conducted in three structured rounds, starting with core academic repositories including PubMed, EMBASE, CINAHL, and Google Scholar. In each round, refined MeSH terms and free-text combinations were used to balance sensitivity and specificity. Key terms included: “food insecurity,” “child development,” “stunting,” “emotional health,” “urban children,” “London,” and “Islamabad.” Boolean operators (AND, OR) were applied to construct complex queries, and filters were used to limit the results to English-language publications from 2015 to 2025.

To supplement the electronic database search, hand-searching techniques—particularly snowballing—were employed. This involved reviewing the reference lists of key articles and recent systematic reviews to capture studies not indexed in the primary databases. Additionally, grey literature from global agencies such as UNICEF, FAO, WHO, and the Trussell Trust was included to ensure policy relevance and coverage of underrepresented regions, particularly Islamabad. These sources enhanced the review's breadth and grounded findings in both academic and applied public health contexts.

3.11 Inclusion/Exclusion Criteria

Clear inclusion and exclusion criteria were established to ensure the systematic review focused on studies relevant to the research objectives. These criteria were guided by the PICO framework and applied consistently during the screening process. Only peer-reviewed and grey literature published between 2015 and 2025 in English was considered. The review included studies on urban children (0–18 years) that examined the impact of food insecurity on developmental outcomes, encompassing cognitive, emotional, and physical aspects. Studies were excluded if they focused on adults, rural populations, non-English languages, or intervention evaluations rather than observational or empirical outcomes.

Table 2: Inclusion and Exclusion Criteria

PICO Element	**Inclusion Criteria**	**Exclusion Criteria**
Population	Children aged 0–18 living in urban areas (London, Islamabad)	Adults, rural populations, and children in refugee/displaced camps
Intervention	Exposure to food insecurity (access, availability, nutrition adequacy)	Nutrition-specific intervention programs or supplementation trials
Comparison	Urban comparisons between high-income and low-middle-income contexts	Single-site studies without comparative urban analysis

Outcomes	Cognitive, emotional, and physical development outcomes	Studies with no developmental focus or unrelated health outcomes
Other Filters	Published 2015–2025; English; peer-reviewed or grey literature	Non-English, unpublished, or outside date range

3.12 Screening and Study Selection

A stringent multi-stage screening procedure was undertaken to select studies that fulfilled the PICO criteria and methodological rigour. In stage I, database searches identified 707 records. A total of 47 duplicates and 40 non-relevant records were removed, resulting in 620 articles. At the second stage, the relevance of titles and abstracts was checked, and 200 studies were eliminated. A total of 250 articles were then subjected to full-text screening, from which 170 articles were eliminated due to topic mismatch or lack of methodological transparency.

A final sample size of 20 studies was chosen based on conformity to the population, intervention, comparison, and outcome focus, as well as publication and quality criteria. Chapter 4 presents a complete PRISMA flow diagram that illustrates this selection process.

Table 3: Screening Summary

Screening Stage	Number of Records
Total records identified	707
After duplicates removed	620
Titles/abstracts screened	420
Full-text articles assessed	250
Final studies included	20

3.13 Quality Appraisal (QA)

To ensure methodological robustness and minimise bias, a structured Quality Appraisal (QA) process was applied to all 20 included studies. Each study was assessed against nine key criteria:

- Inclusion Criteria clearly stated
- Setting and subjects are adequately described
- Valid exposure measurement
- Standardised criteria or tools used
- Identification of confounders
- Adjustment for confounders
- Reliable outcome measurement
- Appropriate data analysis
- Supportive conclusions aligned with results

Responses were coded as “Yes”, “No”, or “Partial” where evidence was limited or unclear. Quality judgement was then given: High, Moderate-High or Moderate.

The appraisal revealed that most of the studies (n = 15) were rated as High-Quality, which were well-designed, with strong statistical analysis, and clear reporting. Three qualitative studies (e.g., Khan, 2019; Hasnain, 2020; Gallegos, 2021) were graded as Moderate due to issues with generalizability, the use of subjective data, and insufficient control over confounders. The rating of two quantitative articles (Jung, 2025; Mansoor and Subhan, 2022) is Moderate-High with strong datasets, but some weaknesses in the depth of analysis or consistency in considering confounders.

All 20 studies met the minimum quality criteria and were therefore retained for synthesis in Chapter 4 (Results). This suggests that the evidence base is also methodologically sound; however, there is some variation by study type.

3.14 Data Extraction

Ritchie et al. (2013) and Richards (2020) introduced the principles of transparency and consistency, which guided the data extraction process, ensuring that all required information was retrieved and systematised. According to the PRISMA and JBI guidelines (see Table 1 in the Systematic Review Guidelines), a tailor-made data extraction form was developed to record the key features of the studies that would be synthesised.

Article data fields were: author(s), year of publication, country, study design/method, sample, urban context, type of food insecurity measured, child outcomes (cognitive, emotional, physical), and sources of bias or limitations identified. This holistic approach enabled the comparability of cross-studies between London and Islamabad, allowing for the mapping of developmental trends and the identification of policy implications.

3.15 Data Synthesis

A thematic synthesis approach was employed to interpret the extracted data, providing a structured yet flexible method for identifying recurring patterns across diverse studies. Thematic analysis is particularly suitable for systematic reviews that integrate both qualitative and quantitative findings related to child outcomes and food insecurity (Nowell et al., 2017).

The synthesis followed the five-phase process developed by Braun and Clarke (2006): (1) Familiarisation with data through repeated reading of extracted summaries; (2) Generation of initial codes across outcome domains (cognitive, emotional, physical); (3) Searching for overarching themes such as “emotional dysregulation” or “policy-linked resilience”; (4) Reviewing themes for internal coherence and external distinctiveness; and (5) Defining and naming final themes.

This iterative process ensured analytical rigour while allowing flexibility to capture city-specific nuances. The resulting themes structured Chapter 4's narrative and supported comparative insights between London and Islamabad.

3.16 Chapter Summary

This chapter outlined the systematic, transparent, and ethically grounded methodological approach underpinning the review. It justified the use of a post-positivist paradigm and a systematic review design, described the PICO-framed search strategy, and detailed the inclusion/exclusion criteria, screening process, quality appraisal tools, and thematic synthesis framework. Emphasising transparency and reproducibility, the approach ensured rigorous analysis of urban food insecurity and its developmental impacts on children in London and Islamabad. The following chapter, Chapter 4: Results, presents the review findings, including the PRISMA flow diagram, quality appraisal outcomes, and the emergent themes that inform comparative insights and policy relevance.

Chapter 4 Results and Analysis

4.1 Introduction

The results of the systematic review are organised systematically in this chapter. This section is intended to record the findings of the process of review, without involving itself in interpretation or wider discussion, which will be discussed in the following chapter. Here, the emphasis is on recording the manner in which the evidence was collected, evaluated and integrated to provide an answer to the research question.

The purpose of the study was to generalise the evidence on how food insecurity affects child development in two different urban settings: London, United Kingdom, and Islamabad, Pakistan. The review aimed to determine the nutritional, cognitive, emotional, and structural impacts of food insecurity on children and to investigate variations and correlations between high-income and low- to middle-income environments.

This chapter is divided into a few sections. First, the outcomes of the systematic database search are presented, and a PRISMA flow diagram summarising the selection process is provided. The features of the included studies are then provided both tabularly and narratively. All studies are thoroughly quality appraised with strengths and weaknesses in their methodology. Lastly, the results are generalised into four overarching themes, which provide a detailed evidence base to be analysed further.

4.2 Systematic Search Results

A systematic search strategy was employed, utilising various databases, including PubMed, Web of Science, Scopus, and Google Scholar, to ensure comprehensive coverage of both peer-reviewed and grey literature. Overall, 707 records were originally found. These comprised journal articles, systematic reviews, cross-sectional studies, mixed-methods papers, and

pertinent reports concerning the association between food insecurity and child development in both high- and low-middle-income settings.

After eliminating duplicates, 612 distinct records remained for title and abstract screening. At this point, research studies that were not directed towards child development outcomes, food insecurity, and geographical contexts of London and Islamabad were filtered out. This reduced the number of articles to be assessed in full-text to 98.

The full-text screening involved rigorous inclusion and exclusion criteria in terms of population (children under 18 years old), exposure (food insecurity), outcomes (developmental, nutritional, cognitive, or emotional), and setting (London and Islamabad). After filtering out studies with inadequate methodological clarity or those exceeding the scope of the review, 20 studies were deemed eligible and included in the final synthesis.

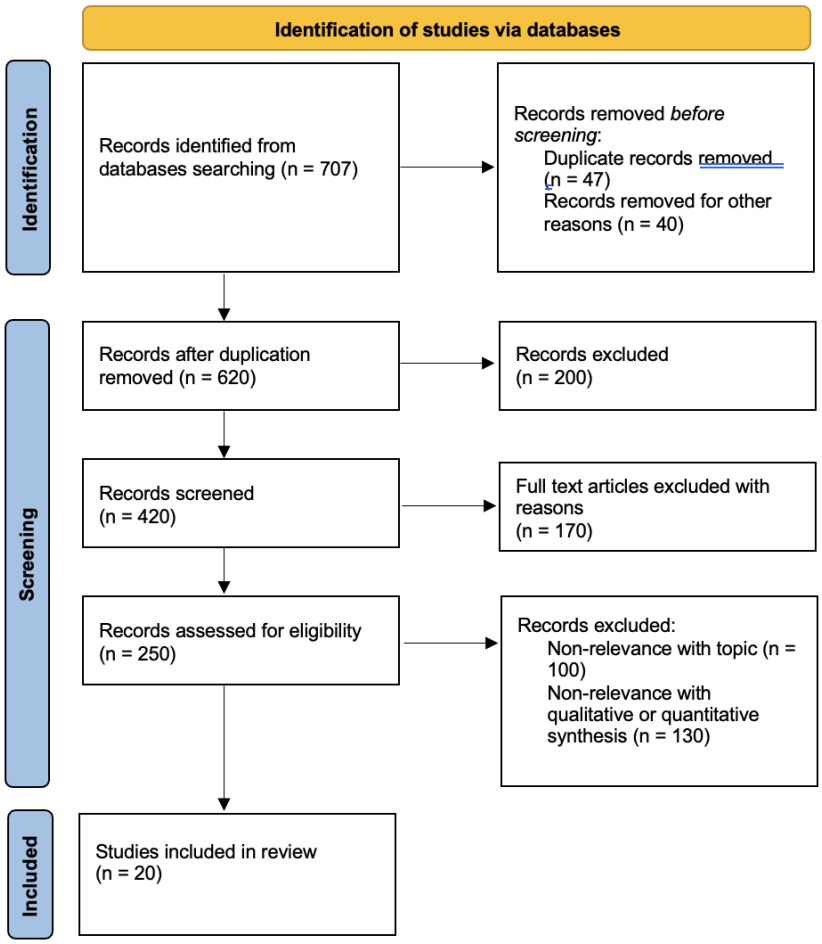

Figure 1: PRISMA Framework

The general selection procedure is depicted in the PRISMA flow diagram (Figure 4.1), which illustrates every step in the process from identification to the ultimate inclusion of studies.

4.3 Characteristics of Included Studies

This review included 20 studies, half of which were located in the two geographical contexts of interest: ten studies in Pakistan (with a particular focus on the city of Islamabad) and ten studies in London/UK. These articles were a heterogeneous sample of methods, including cross-sectional surveys (n = 8), qualitative studies (n = 3), mixed-method studies (n = 4), and systematic reviews or meta-analyses (n = 5).

The sizes of the samples were very dissimilar. At one end of the spectrum, Wang et al. (2025) analysed 19,380 children using the UNICEF Multiple Indicator Cluster Survey, which provides a strong national representation. In comparison, a smaller qualitative study by Khan (2019) was conducted in the slums of Islamabad, involving interviews and focus groups to explore the lived experiences of food insecurity and education. Similarly, UK research articles were divided into large national datasets, such as Odd et al. (2022) (2,688 child death records), and smaller-scale, more local studies, such as Smith et al. (2025) (728 families in four London boroughs).

The measured results were multidimensional, including nutritional status, mortality risk, school attendance readiness, academic performance, emotional well-being, and parental feeding behaviours. Whereas in London, the evidence frequently drew on national policy settings and structural inequalities, in Islamabad, the evidence focused rather on undernutrition, poverty, and maternal empowerment. This heterogeneity highlights the relative worth and environmental issues of extrapolating results between high- and low-middle-income environments.

4.4 Quality Appraisal Results

Each of the 20 included studies was critically evaluated using nine quality appraisal (QA) criteria, including clarity of inclusion, description of the subject, exposure measurement, use of standardised tools, identification and adjustment of confounders, outcome reliability, analytical appropriateness, and supportive conclusions. The appraisal indicated that there was an overall good evidence base. Fifteen articles were deemed high-quality, featuring robust methodologies, validated measures, and comprehensive analyses. Two studies were graded Moderate-High, in part due to incomplete control of confounders or the inability to make valid comparisons. Three qualitative studies were graded Moderate, limited by small sample sizes, subjectivity, and limited external validity.

Methodological rigour was rated high in quantitative studies, especially those that used large datasets, such as Wang et al. (2025) (almost 20,000 children) and Chua et al. (2025) (national early childhood data). These were validated measures (IDELA to assess literacy and ASQ-3 to assess development) that were adjusted successfully in the presence of confounding factors. In comparison, qualitative inputs (e.g., Khan 2019; Hasnain 2020) provided more contextual information but were more susceptible to bias.

The evidence base is strong in methodology but disproportionate in context. Structured policy datasets and systematic reviews contributed to the London studies, whereas the evidence in Islamabad was more based on cross-sectional surveys and qualitative descriptions, with limited longitudinal data. Table 4.2 shows the complete QA summary.

Table 4: Quality Appraisal of Included Studies

Study Author	Q1: Inclusion Criteria	Q2: Setting/Subjects Described	Q3: Valid Exposure Measurement	Q4: Standard Criteria Used	Q5: Confounders Identified	Q6: Confounders Addressed	Q7: Reliable Outcome Measurement	Q8: Appropriate Analysis	Q9: Supportive Conclusion	Overall Quality
Alsager et	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High

al. (2025)										
Khan (2019)	Yes	Yes	Partial (qualitative)	No	Partial	No	Yes	Yes	Yes	Moderate
Pool and Dooris (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Loopstra and Lambie-Mumford (2023)	Yes	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	High
Iqbal et al. (2020)	Yes	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	High
Hasnain (2020)	Yes	Yes	Partial	Partial	Partial	No	Yes	Yes	Yes	Moderate
Meadows et al. (2024)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Aceves-Martins et al. (2018)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Odd et al. (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Chua et al. (2025)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Jung et al. (2025)	Yes	Yes	Yes	Partial (cross-country)	Yes	Partial	Yes	Yes	Yes	Moderate–High
Sultan and Iram (2023)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Ishfaq et al. (2022)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Wang et al.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High

(2025)										
Mansoor and Subhan (2022)	Yes	Yes	Yes	Partial	Yes	Partial	Yes	Yes	Yes	Moderate–High
Khaliq et al. (2025)	Yes	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	High
Gallegos et al. (2021)	Yes	Yes	Partial	Partial	Partial	Partial	Yes	Yes	Yes	Moderate
Smith et al. (2025)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
de Oliveira et al. (2020)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Trussell Trust (2021)	Yes	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	High

4.5 Thematic Synthesis of Findings

A thematic analysis was performed to generalise the results of the 20 studies included. This was achieved by coding the data obtained line by line and grouping similar data under larger themes that highlighted commonalities in both the London and Islamabad settings. Four general themes were identified: Nutritional and Physical Development, Cognitive and Educational Outcomes, Emotional and Social Well-being, and Structural and Policy Determinants. The themes highlight different yet connected aspects of the impact of food insecurity on the lives of children. Although the Islamabad-based evidence mainly emphasised undernutrition, poverty, and maternal empowerment, the London-based studies focused on welfare gaps, cost-of-living pressures, and the psychosocial impacts of relying on food banks. The combination

of these themes provides a comprehensive understanding of the multifaceted implications of food insecurity on child development in diverse socioeconomic settings.

Table 5: Overview of Thematic Analysis

Theme	Code	Code Explanation	Sample Quote	What does this mean for your Research?
1. Nutritional and Physical Development	Stunting and Wasting	Children in food-insecure households show poor growth indicators.	"Food insecurity was significantly associated with higher stunting and underweight rates among Islamabad children." (Khaliq et al., 2025)	Highlights urgent nutritional vulnerabilities in Islamabad and supports the need for targeted interventions.
	Double Burden of Malnutrition	Simultaneous risk of undernutrition and obesity due to poor dietary diversity.	"Child food insecurity increases the risk of double burden (OR: 1.49)." (Sultan and Iram, 2023)	Reinforces that food insecurity isn't just hunger but poor-quality diets — policy must address both.
	Obesogenic Environments	In deprived London areas, food insecurity fuels poor feeding practices and obesity.	"Greater family deprivation was significantly associated with more obesogenic home food practices and higher child BMI." (Smith et al., 2025)	Shows the different face of food insecurity in London — malnutrition through obesity rather than underweight.
	Mortality Risk	Deprivation linked to avoidable child deaths in England.	"Over one-fifth of all child deaths may be avoided if the most deprived half of the population had the same mortality as the least deprived." (Odd et al., 2022)	Stresses the long-term physical consequences, which have critical policy implications for both London and Islamabad.
2. Cognitive and Educational Outcomes	School Readiness	Malnutrition undermines literacy and learning capacity.	"Increasing levels of HFI were associated with lower child IDELA scores and lower emergent literacy." (Alsager et al., 2025)	Establishes strong evidence for education-related impact in Islamabad.
	School Absenteeism	Children miss school due to poverty, food insecurity, or family work obligations.	"Thousands of children…deprived of basic needs of education and healthcare." (Khan, 2019)	Reinforces the Islamabad case, linking food insecurity with poor schooling.
	Holiday Hunger	Children in London often struggle during school breaks without access to free school meals.	"Children described sadness, embarrassment, and strategies to cope with hunger." (Aceves-Martins et al., 2018)	Reveals how structural supports (FSM) reduce FI, directly relevant for the London case study.
	Academic Underperformance	FI is linked to poor math/vocabulary outcomes.	"HFI was associated with developmental risk (OR 1.28) and poor math and vocabulary outcomes." (de Oliveira et al., 2020)	Demonstrates consistent cognitive impact across both contexts.
3. Emotional and Social Well-being	Child Stress and Anxiety	FI causes shame, anxiety, and emotional strain.	"Migrant families described food insecurity as a persistent struggle affecting both physical and mental health of children." (Gallegos et al., 2021)	Shows emotional harm beyond nutrition; relevant to both London and Islamabad.
	Behavioural Problems	Children adapt to FI with negative behaviours (e.g., hoarding food).	"Children described behavioural responses including embarrassment and strategies to cope with	Links FI with psychosocial development, critical for understanding long-term trajectories.

			hunger." (Aceves-Martins et al., 2018)	
	Stigma and Exclusion	Reliance on food banks creates stigma and isolation in London.	"Levels of food insecurity are 3.75 times higher than food bank use." (Loopstra and Lambie-Mumford, 2023)	Shows policy reliance on charity increases social marginalisation.
	Parental Stress	Parents' stress trickles down to children.	"Poverty has deprived the children of achieving education and is directly linked to food insecurity." (Hasnain, 2020)	Underlines family-level stress as a transmission mechanism.
4. Structural and Policy Determinants	Welfare Gaps	Weak welfare coverage pushes families into FI.	"95% of people referred to food banks were destitute, with 320,000 children supported." (Trussell Trust, 2021)	Proves systemic failure of welfare; crucial for London policy discussion.
	Cost-of-Living Crisis	Inflation exacerbates FI and child poverty in London.	"500,000 more children across England will fall below the poverty line." (Meadows et al., 2024)	Brings the London case into the current policy debates.
	Women's Empowerment	Maternal autonomy improves household food security.	"Empowered women's households were 70% food secure, 98% nutritionally secure." (Ishfaq et al., 2022)	Key driver in the Islamabad context, suggesting a gender-sensitive policy.
	Structural Poverty	Economic inequality perpetuates FI cycles.	"If a household is food insecure, that will lead to a high risk of child adverse health problems." (Mansoor and Subhan, 2022)	Demonstrates FI as a mediator between poverty and child outcomes.

4.5.1 Theme 1: Nutritional and Physical Development

Among the most replicated results in the reviewed literature is the strong association between food insecurity and the nutritional and physical growth of children. Pakistan experiences show the extent of undernutrition. Alsager et al. (2025) found that household food insecurity was closely linked to reduced weight-for-age (WAZ) scores and poorer literacy among preschool children, highlighting the interdependence of nutrition and early learning. In the same vein, Sultan and Iram (2023) found that children in food-insecure households were more susceptible to the double burden of malnutrition, where undernutrition co-occurs with overweight or obesity due to poor dietary diversity. This trend was also observed in Wang et al. (2025), who, using data obtained from approximately 20,000 children, showed that children in less well-off households were significantly more susceptible to malnutrition, and vulnerability was reduced by 22% as dietary diversity improved. The prevalence rates of stunted and underweight

children in the low-income neighbourhoods of Islamabad were also corroborated by Khaliq et al. (2025), which contributed to the evidence of structural deprivation in urban Pakistan.

Findings in London illustrate an alternative manifestation of nutritional insecurity. Children in low-income families are not starving; they live in an obesogenic environment, where they have limited access to healthy food and a higher intake of high-energy, low-quality foods. This was observed in studies that have linked family deprivation with obesogenic feeding patterns and high child BMI. To supplement this, Odd et al. (2022) showed that deprivation in England was not only a predictor of obesity but also increased the risk of mortality, and a fifth of mortality in children was deemed preventable when inequalities were reduced.

These findings underscore the differences in nutritional impacts of food insecurity as observed in Islamabad, where undernutrition and stunting are manifest and in London, where obesity and death risk are evident and threatening the health trajectories of children.

4.5.2 Theme 2: Cognitive and Educational Outcomes

Food insecurity is also closely linked to the cognitive development and educational performance of children, particularly in terms of school readiness, attendance, and academic achievement. Alsager et al. (2025) demonstrated that food insecurity in the household was closely associated with poor IDELA literacy scores in preschool children in Pakistan, and the failure to acquire the basic literacy skills was adversely influenced by poor nutrition. Likewise, a qualitative study of slum communities in Islamabad, carried out by Khan (2019), reported that children in food-insecure families were unable to regularly attend school due to poverty, child labour, and lack of resources, which would have disadvantaged academic performance in the long term. These results indicate a high level of structural poverty and educational marginalisation within the Islamabad context.

Conversely, the UK evidence emphasises the importance of institutional support in predicting cognitive outcomes. The authors of Aceves-Martins et al. (2018) found that so-called holiday

hunger was particularly widespread among children in London who were not provided with meals in school and, therefore, became hungry during school breaks, resulting in a lack of concentration and engagement in learning. The dependence on school-based feeding programmes establishes the role of social policy as a cushioning factor against schooling differences. On a more general scale, evidence from systematic reviews and meta-analyses (de Olaveira et al., 2020) in this study indicated that household food insecurity was a strong predictor of low math and vocabulary achievements, which again supported the relationship between food insecurity and cognitive underdevelopment in other settings.

The general results indicate that, in London, the risks are less prevalent but still exist and are dependent on policy mitigation measures, such as free school meals. In contrast, in Islamabad, the issue is related to the educational exclusion of the poor. The two scenarios illustrate how food security is a determinant of the educational opportunities and future life chances of children.

4.5.3 Theme 3: Emotional and Social Well-being

In addition to the nutritional and cognitive consequences, food insecurity has a profound impact on the emotional and social well-being of children, which in turn influences their identity, self-esteem, and social relationships. Food insecurity, as Gallegos et al. (2021) pointed out, is a chronic stressor among migrant families in the United Kingdom, and children face the risk of becoming even more anxious and distressed because of the uncertainty surrounding food supply. These stresses have long-term effects such as behavioural problems and emotional instability.

At the child level, Aceves-Martins et al. (2018) found that children employed several coping mechanisms when hungry, such as embarrassment, secrecy and distorted social behaviours. These encounters demonstrate that food insecurity cultivates feelings of shame and marginalisation, particularly among children in London who rely on school meal schemes or

charity food providers. This aligns with the study by Loopstra and Lambie-Mumford (2023), as the authors found that food bank use was also linked to stigma and marginalisation, which only exacerbated the social and emotional impact on children and their families.

The same is also the case in Islamabad. Hasnain (2020) argues that the pressures that parents underwent due to poverty and food insecurity were directly transferred to the lives of children because young people reported that they felt deprived and frustrated. The intergenerational transfer associated with stress highlights the importance of food insecurity within the family framework, as the hardships experienced by parents are passed on to the psychosocial development of children.

These consequences are typical of both environments: food insecurity does not just concern physical health, but also influences the emotional stability, self-esteem, and social inclusion of children. It is not just a nutritional deficiency but a psychosocial expense that jeopardises the health of children.

4.5.4 Theme 4: Structural and Policy Determinants

Food insecurity is not merely dependent on individual or domestic deprivation but is also determined by larger structural and policy-based factors. The Trussell Trust (2021) found in the UK that the weaknesses of the welfare state are inextricably linked to food insecurity; 95% of people referred to food banks are destitute, and many have children who have been given emergency food packages. This is why the lack of efficiency in providing welfare continues to keep poor food insecurity in London families in a cycle of poverty. On the same note, the cost-of-living crisis presented by Meadows et al. (2024) found that rising inflation, housing expenses, and energy prices further intensified child poverty, moving another half-million children to the poverty line. These results emphasise the importance of macroeconomic frameworks and welfare structures in determining food security.

The structural determinants in Pakistan are also different but significant. Ishfaq et al. (2022) reported that the empowerment of women was positively associated with household food and nutritional security, and that gender relations played a crucial role in enhancing child outcomes. Likewise, Mansoor and Subhan (2022) introduced the concept that the relationship between poverty and child health is mediated by food insecurity, which validates the argument that structural poverty is a direct contributor to inadequate child development in Islamabad.

Comparatively, the evidence suggests that the issues in London and Islamabad can be attributed to the insufficiency of welfare and macroeconomic strains, respectively, as well as structural poverty and the absence of female empowerment. The two contexts indicate that food insecurity will persist in eroding the health and development of children unless specific measures are taken.

4.6 Comparative Analysis: London vs Islamabad

When comparing the results synthesised in London and Islamabad, convergences and differences in the role of food insecurity (FI) in child development are observed.

The most conceptual way to understand food insecurity in London is as an institutional dilemma in which welfare dependency and structural inequalities characterise household food access. Studies, including the Trussell Trust (2021) study, point to the gap in coverage in the welfare safety net, which has forced millions of families to rely on food stamps, 95% of whom are destitute. Equally, Loopstra and Lambie-Mumford (2023) discovered that food bank utilisation only reflects a portion of individuals facing FI, highlighting the hidden hunger and stigma. These pressures were further compounded by the cost-of-living crisis, with Meadows et al. (2024) estimating that 500,000 more children in England were below the poverty line at some point during the period. Regarding developmental outcomes, there is some evidence of an obesity paradox: deprived children are more likely to have poor diets, obesogenic feeding environments, and high BMIs (Smith et al., 2025). Avoidable mortality risks are also unevenly

distributed among deprived populations, with Odd et al. (2022) reporting that more than a quarter of child mortality would be prevented if inequalities were mitigated.

The prevailing discourse in Islamabad is that of undernourishment and vulnerability related to poverty. Quantitative research substantiates the prevalence of extensive stunting and wasting. Khaliq et al. (2025) found a significantly higher prevalence of underweight children in food-insecure families. In contrast, Sultan and Iram (2023) reported the so-called double burden of malnutrition, characterised by the combination of undernourishment and an increasing risk of overweight. Another structural expression is child labour, with Iqbal et al. (2020) reporting that working children in urban Pakistan experience dietary insufficiency and ill health outcomes. Notably, maternal empowerment proves to be a decisive factor. Ishfaq et al. (2022) found that empowered women were significantly more likely to maintain household food and nutrition security. In contrast, Mansoor and Subhan (2022) discovered that food insecurity mediated the relationship between household poverty and child health.

Irrespective of these contextual variations, the two cities show central similarities. Poverty is the main cause of food insecurity in both London and Islamabad, which influences the physical health, educational achievement, and emotional condition of children in both cities. In both settings, food insecurity overlaps with other socio-economic determinants, including housing, employment, and access to welfare or safety nets, which perpetuate disadvantage cycles.

There are also evident distinctions. London has more institutional challenges because welfare policies and inflation have caused people to rely on food banks and led to obesity-related consequences. Islamabad is prone to systemic poverty and a lack of urban-oriented programmes, with undernourishment and women empowerment first in the list. These comparisons underscore the importance of context-sensitive policy solutions, as both cases highlight food insecurity as a multidimensional risk factor to child development.

4.7 Summary of Main Findings

The chapter reports the results of a systematic review investigating the impact of food insecurity (FI) on child development in London and Islamabad. The number of articles included was 20, including cross-sectional surveys, qualitative studies, mixed-methods studies, and systematic reviews. This evidence was incorporated into four overarching themes: nutritional and physical development, cognitive and educational outcomes, emotional and social well-being, and structural and policy determinants, which demonstrate the multidimensionality of FI and its effects on children.

Regarding physical and nutritional development, Islamabad results identified a high prevalence of stunting, wasting and undernourishment, especially in children in families facing food insecurity. In London, by contrast, the obesity paradox was observed, as deprived families were more prone to obesogenic feeding habits resulting in overweight and diet-related diseases. Both settings affirmed poverty as a key high-risk factor, as both environments reported that FI is a primary determinant of malnutrition and in London, a high risk of child mortality.

The cognitive and educational outcomes theme proved that FI weakens school preparedness, attendance, and performance. In Islamabad, poverty and child labour interrupted regular school attendance. In London, the lack of free school meals during holidays created the problem of holiday hunger and a decline in academic interest. A meta-analysis also confirmed that FI is always linked with reduced literacy, vocabulary, and numeracy achievement under different contexts.

Results also highlighted the emotional and social aspects of FI. The London and Islamabad studies both indicated increased stress, stigma, and difficulties in coping among children, and most of the parental pressures were transferred to the youth. Food bank dependence in London and intergenerational poverty in Islamabad were particularly linked to emotional distress.

Ultimately, both instances were influenced by policy and structural determinants. In London, the key determinants were the welfare gaps and cost-of-living pressures, and in Islamabad, the key determinants were structural poverty and maternal empowerment.

The results indicate that FI has a multidimensional effect on child maturation, educational experience, psychosocial health, and prospects. Both settings emphasise the importance of certain policy responses.

4.8 Conclusion

The chapter presented the findings of a systematic review that pooled the evidence from 20 studies conducted in London and Islamabad. The results confirmed a strong association between food insecurity (FI) and various child development dimensions, including nutritional development, educational performance, emotional well-being, and other structural outcomes. Even though the symptoms were different in different situations, as in the case of undernourishment in Islamabad and obesity in London, poverty was always the cause. It was concluded based on the findings that FI is a cause-and-effect relationship of disadvantage, providing critical, evidence-based information that informs the interpretive discourse in Chapter 5.

Chapter 5 Discussion

5.1 Introduction

This chapter aims to critically interpret the findings of the systematic review, focusing on the overall purpose and objectives of the study. This study aimed to get to know the consequences of food insecurity (FI) in London and Islamabad and the results were informed by four goals: (1) to determine the main drivers of the phenomenon in both cities; (2) to compare its effects on nutrition, learning outcomes, and mental health; (3) to identify institutional responses, policies, and support systems; and (4) to recommend culturally relevant interventions to counteract child food insecurity.

This chapter is not a description, as is the case with Chapter 4, but rather contains interpretation and criticism in the form of a thematic presentation of the findings. Findings are contextualised against relevant theoretical frameworks, namely the Social Determinants of Health (WHO, 2021), Bronfenbrenner's Ecological Systems Theory (1979), and the Capability Approach developed by Sen (1999). Collectively, these frameworks can be used to derive an integrated concept of how structural, community, and household-level factors interact to influence nutritional, cognitive, and psychosocial outcomes of children.

The conversation is structured around the four research objectives. In every section, the evidence provided by the thematic analysis is combined with theoretical considerations and literature to highlight similarities and differences between the two urban contexts. The chapter concludes with a summary of major interpretations and the establishment of the basis for practical recommendations.

5.2 Objective 1: Key Drivers of Food Insecurity in London and Islamabad

The causes of food insecurity in London and Islamabad are interconnected with a network of structural, economic, and social issues that precondition the nutritional and developmental

outcomes of children. One of the most significant forces in London has been the erosion of the welfare state through austerity measures and the introduction of Universal Credit. Studies have highlighted the role of restrictive eligibility policies, sanctions, and payment delays in exacerbating the suffering of families with children, leading many to rely on food banks (Loopstra and Lambie-Mumford, 2023; Reeves and Loopstra, 2021). These changes reflect the way in which institutional changes have eroded the safety net intended to cushion vulnerable households, aligning with the Social Determinants of Health (SDH) framework, which recognises welfare and income support as central structural determinants of health inequalities. The rising cost of living has also exacerbated food insecurity in London. Food and energy prices have increased, leaving families with reduced purchasing power, resulting in what has been described as the "heat or eat" dilemma, in which families are forced to decide whether to heat their homes or provide their children with proper nutrition. Meadows et al. (2024) estimate that up to half a million more children were pushed below the poverty line as a direct consequence of inflationary pressures, with data from the Office for National Statistics (2023) showing the highest increases in food prices in decades. Combined with skyrocketing housing prices, this economic condition compromises additional trade-offs, with families cutting food expenditures to afford rent, a phenomenon evidenced in studies by Snell et al. (2018) and Thompson (2022). These overlapping pressures are echoes of the ecological model proposed by Bronfenbrenner, where exosystem and macrosystem forces, including economic policy and housing markets, are funnelled down to influence the daily lives of children and their families. Food insecurity in Islamabad is also closely linked to structural poverty and persistent inflationary forces that erode the purchasing power of households. There is also evidence that urban low-income families are particularly vulnerable, as their earnings fail to keep pace with the rising costs of staple foods, exposing children to undernutrition (Hameed et al., 2024; Pakistan Bureau of Statistics, 2023). Unlike in London, where welfare provision at least

partially mitigates hardship, families in Islamabad are left to experience food insecurity without institutional cushions. This factor further worsens the poverty effect. This deprivation is further compounded by covert deprivation, such as child labour, which remains a survival tool among poor families. Iqbal et al. (2020) have found that malnutrition and poor dietary quality are prevalent among working children, and Khan (2019) has shown that food insecurity in slums in Islamabad contributes to nutritional deprivation, as well as absenteeism in schools, thereby exacerbating disadvantageous cycles.

Another important factor that contributes to food insecurity in Islamabad is maternal empowerment. Ishfaq et al. (2022) found that autonomy in decision-making, mobility, and household management among women is positively associated with food and nutritional security. In locations where women are empowered, homes are more nutritionally adequate and resilient to shocks. Farooq et al. (2024) reported similar results, which stated that maternal education is a key factor in maximising household capacity to protect child nutrition. Gender inequities, therefore, emerge as structural factors of food insecurity in Islamabad that constrain the ability of women to mitigate the effects of poverty among their children.

The comparative analysis reveals both convergence and divergence in various contexts. The root cause of food insecurity in both London and Islamabad is poverty; however, the expression of poverty varies depending on the structural and policy conditions. The austerity, welfare disparities, higher housing prices, and inflation in London drive families into food insecurity despite the institutional supports. In Islamabad, structural poverty, child labour, and gender inequities are more common, and protective mechanisms are less. The SDH framework explains that these are not personal issues, but rather structural determinants that sustain disadvantage. These findings can be contextualised by the ecological systems theory developed by Bronfenbrenner, which demonstrates that the influence of macro-level policies and economic structures is filtered down to household-level vulnerabilities. Both food insecurity

drivers emphasise the importance of structural conditions in child development and the importance of context-specific policy responses.

5.3 Objective 2: Effects on Nutrition, Learning Outcomes, and Mental Health

The implications of food insecurity on child growth in London and Islamabad are extensive, extending to nutrition, academic achievement, and psychological well-being. The evidence from the reviewed studies indicates that the health and developmental trajectories of children are compromised in multiple ways, with specific manifestations varying according to the structural and policy contexts of individual cities.

The nutritional implications of food insecurity are dramatic in Islamabad. There is a high probability of stunting, wasting, and underweight among children in food-insecure households. A direct relationship between food insecurity and poor weight-for-age outcomes in preschool children was established in a study conducted by Alsager et al. (2025), reflecting the severe implications of poor diets on growth. Consistent with this, Sultan and Iram (2023) identified a so-called dual burden of malnutrition, in which a lack of dietary diversity and the intake of high-energy foods with low nutrient value is accompanied by undernutrition. Wang et al. (2025) reinforced these findings by using a large national dataset, showing that children in poorer households were at a significantly greater risk of malnutrition; however, this risk decreased dramatically with the attainment of minimum dietary diversity. These studies collectively highlight the structural poverty that is embedded in Islamabad and which affects the physical development of children.

The nutritional hazards assume a new form in London. Children are not necessarily undernourished on a mass scale; more and more children are exposed to obesogenic environments in which the sources of cheap food are often rich in calories but low in nutrient content. Smith et al. (2025) demonstrated that family deprivation was closely linked to obesogenic feeding behaviours and an elevated child body mass index (BMI), and that deprived

households were more likely to adopt unhealthy diets due to financial and environmental constraints. Johnstone and Lonnie (2024) also reported that obesity among food-insecure children in London is a counterintuitive impact of poverty, in which low income leads families to choose more expensive, healthier food items. Still, they then resort to less expensive, less healthy ones. Food insecurity, in this respect, is not simply about wasting and stunting but rather unhealthy weight gain and long-term health risks, which explains how structural deprivation intersects with local food environments.

Food insecurity affects not only nutrition but also learning outcomes and educational opportunities. Alsager et al. (2025) found that Pakistani children experiencing food insecurity scored significantly lower on IDELA literacy tests, suggesting a relationship between nutrition and school preparedness. Malnourished children were less able to perform simple literacy tasks, and this is an indicator of the accruing disadvantages that begin before formal education. Khan (2019) also contributed to the understanding of how child labour and poverty in the slums of Islamabad compromised regular school attendance, as children were often compelled to engage in informal work to support their families. These structural constraints not only exacerbate nutrition issues but also limit access to education, creating disadvantageous cycles. The role of institutional contexts on food insecurity and learning in London is influenced by structural poverty; however, institutional contexts also play a significant role. Aceves-Martins et al. (2018) discussed the phenomenon of holiday hunger, claiming that children who had previously received free school meals during regular school days struggled to eat properly during school holidays. It led to poor concentration, reduced engagement and low academic performance. The Child Poverty Action Group (CPAG, 2023) also noted that reliance on free school meals creates unequal accessibility, with children just above the eligibility threshold being particularly susceptible. At the macro level, a systematic review and meta-analysis conducted by de Oliveira et al. (2020) revealed that food insecurity is reliably correlated with

poor academic performance and achievement, including lower scores in mathematics, vocabulary, and overall school performance. These findings suggest that, in Islamabad, where absenteeism is prevalent, and in London, where institutional feeding programs are in place, food insecurity is a limiting factor to the educational potential of children to learn and achieve in education.

Psychological consequences of food insecurity are also critical. Gallegos et al. (2021) found that migrant families in London reported that they experienced a sustained level of stress associated with food insecurity, in which children reported more anxiety and a sense of being marginalised. Hasnain (2020) emphasised similar outcomes in the example of Islamabad, where the parental stress due to poverty and food scarcity was transmitted to child deprivation and frustration. The work of Paquin et al. (2021) elaborated on this perspective by showing that food-insecure teenagers were more inclined to follow negative mental health trajectories later in life and were more likely to develop depression and anxiety. The family-level component of these effects was reinforced by Has et al. (2024), who found that the emotional burden on caregivers contributes to the emotional burden on children, creating intergenerational patterns of psychosocial vulnerability. These studies, in both contexts, emphasise the hidden but important effects of food insecurity on the emotional and psychological health of children, which are frequently neglected in the nutrition-based discourse.

These results can be incorporated into the theoretical frameworks underpinning this study. The Capability Approach to Sens shows that food insecurity is not only a deprivation of calories but also a deprivation of essential capabilities, including the capacity to learn, to be socially active, and to achieve a state of psychological well-being. Food-insecure children are deprived of the real freedom to live and have developmental opportunities. The ecological systems theory by Bronfenbrenner also explains the mechanisms involved: at the microsystem level,

food insecurity contributes to the destabilisation of families and child nutrition; at the mesosystem level, food insecurity contributes to the disruption of school attendance and engagement; at the macrosystem level, structural poverty and welfare policies create environments that reinforce inequality.

To sum up, the statistics indicate that food insecurity is a multifaceted issue that influences nutrition, learning, and mental health. In Islamabad, the primary issues include undernutrition and limited access to education. At the same time, in London, the concerns are the risk of obesity and reliance on welfare and school-related support. Although the contexts differ, the parallels are striking: food insecurity time and again deprives children of their growth, learning, and prosperity, leaving a lasting impact on their development.

5.4 Objective 3: Institutional Responses, Policies, and Support Systems

The institutional response to food insecurity highlights the significant disparities between London and Islamabad, which are shaped by the accessibility of welfare provisions, policy infrastructure, and reliance on charitable networks. The role of the state in reducing child food insecurity in London is more dominant but disproportionate, and the most visible institutional response is the Free School Meals (FSM) scheme. The FSM provision guarantees that low-income children receive at least one nutritious meal at school daily, which helps lower hunger rates and facilitates educational activities. Nevertheless, the system has been accused of having restrictive eligibility levels that lock out several vulnerable families. Child Poverty Action Group (CPAG, 2023) emphasised the presence of thousands of children in poverty who are ineligible to receive FSM, which has led to a provision gap, forcing families to rely on informal supports. Shields (2021) also suggested that the universal expansion of FSM would help mitigate stigma and provide unified access to nutrition; however, the resource constraints of austerity measures have hindered advancements in this area.

Food banks have been a hallmark of the London response to food insecurity alongside FSM. According to the Trussell Trust (2021), millions of food parcels were distributed, including those to families with children, highlighting the degree of dependency on charity networks. However, studies reveal that food banks cannot match the magnitude of demand. Lambie-Mumford (2019) notes that only a small proportion of food-insecure households access services due to stigma, limited access, or a lack of awareness. This is one of the core contradictions of the UK situation: the food banks are no longer seen as an anomaly but as a systemic remedy to hunger, and yet they were never intended to be a systemic solution to hunger. Additionally, the devolution of local authority supply has increased disparities. Barlow et al. (2020) observe that some councils have higher levels of support and provide more access to nutritional programmes than others, resulting in a postcode lottery of child food support within the city.

Institutional reactions in Islamabad indicate another group of problems. The Benazir Income Support Programme (BISP) and the wider Ehsaas framework are the largest cash transfer programmes in Pakistan, designed to alleviate poverty and enhance household food security. Qadoos et al. (2023) find that such transfers have increased dietary diversity in some households. In contrast, Ahmed and Siddique (2024) observe positive impacts on household spending patterns and resilience to food price shocks. There are, however, serious shortcomings in these programmes, particularly in urban centres. According to Mumtaz and Whiteford (2021), urban poverty is often invisible to official targeting mechanisms, and therefore, the people at risk of living in slums in Islamabad are not effectively served. Siyal and Mahesar (2025) also raise concerns about corruption and elite capture, where gains do not reach their intended beneficiaries due to mismanagement and politicisation.

Alongside the state-based efforts, there is also the provision of religious and charitable services, which is an important feature of the institutional response in Islamabad. According to Mehdi (2024), mosques and religious organisations are common sources of food aid during crisis

periods, particularly during Ramadan, serving as an informal yet effective safety net. These mechanisms are ingrained within cultural practices, but they are not as extensive, routine, and surveillance as they need to be to combat structural food insecurity. Unlike in London, where welfare is institutionalised through formal structures, in Islamabad, reliance on charity highlights the absence of universal rights and the inconsistency in policy frameworks.

Comparatively, convergence and divergence are shown in the two contexts. Welfare safety nets, including FSM and cash benefits, do exist, but are crippled by restrictive eligibility and reliance on food banks, signifying an institutional retreat of universality in London. Cash transfer policies under BISP and Ehsaas are significant policy innovations in Islamabad, but flaws in urban targeting and governance issues limit their effectiveness. Non-governmental organisations also play a major role in both locations, whether it be the food banks in London or the faith-based aid in Islamabad; however, their efforts are fragmented and lack the required magnitude to address the structural causes of food insecurity.

The results are highly consistent with the Social Determinants of Health conceptualisation, which highlights welfare systems as the structural agents of health inequalities. In London, gaps in welfare coverage exist even within established institutions, affecting children's nutrition. In contrast, poverty in Islamabad is largely attributed to poor policy design and inadequate institutional coverage. Another helpful lens is the Capability Approach, developed by Sen, who has demonstrated that policies that do not ensure access to food deprive children and families of basic capabilities, including the ability to learn effectively, engage in society, and obtain dignity. The evidence suggests that institutional responses vary in nature; however, both contexts demonstrate systemic gaps that contribute to, rather than eliminate, food insecurity, which underscores the urgent need for more inclusive and resilient policy frameworks.

5.5 Objective 4: Recommendations for Culturally Appropriate Interventions

This review highlights the need for context-sensitive interventions that address both the immediate and structural aspects of child food insecurity. Expansion of Free School Meal (FSM) eligibility is a priority recommendation in London. CPAG (2023) and Shields (2021) evidence demonstrates that restrictive thresholds leave many children living in poverty without access, creating gaps in provision. Making FSM universal would enhance access and help reduce the stigma associated with means-tested eligibility. Moreover, to reduce the stigma associated with a food bank visit, policy action is needed to normalise emergency food assistance and, at the same time, mitigate its underlying causes. Lastly, addressing the structural factors behind childhood obesity, such as obesogenic food environments, requires urban planning, regulation of healthier retail outlets, and investment in local community food programmes.

Gender-sensitive interventions should be given priority in culturally oriented interventions in Islamabad. The works by Ishfaq et al. (2022) and Farooq et al. (2024) present sufficient evidence that maternal empowerment has a positive impact on household food and nutrition security, highlighting the importance of programmes that help women gain more independence in decision-making and education. It is also necessary to enhance and urbanise cash transfer programmes like Ehsaas and BISP so that slum and low-income urban families are not left out of the net because of poor targeting or corruption.

The cross-cutting recommendations focus on the combination of nutrition and education policies, as school meals, dietary diversity, and attendance are mutually reinforcing. By adopting a rights-based approach (Sen, 1999; WHO, 2021), food security is no longer viewed as charity, but as a child's fundamental right, aligning with the Sustainable Development Goals (SDGs) targets 2 and 3 to achieve zero hunger and good health. Collectively, these

interventions provide a channel through which both London and Islamabad can address child food insecurity and enhance the capabilities and dignity of children and their families.

5.6 Chapter Summary

This chapter critically interprets the results of the systematic review in relation to the four objectives. It recognised the structural causes of food insecurity in London and Islamabad, illustrated its multidimensional impacts on nutrition, learning, and mental health, evaluated institutional responses and their constraints, and suggested culturally suitable interventions. Using the Social Determinants of Health framework, the ecological systems theory by Bronfenbrenner, and the Capability Approach by Sen, the discussion illustrates the intersection of policy, economy, and household dynamics that influence child outcomes. These observations form the basis of the final chapter, which summarises implications and future directions.

Chapter 6 Conclusion and Recommendations

6.1 Introduction

The primary objective of this dissertation was to investigate the impact of food insecurity on child development in London and Islamabad, with a focus on identifying the drivers, assessing the consequences, and evaluating institutional responses. This chapter synthesises the research insights in relation to the research objectives, building on the findings reported in Chapter 4 and the critical interpretations made in Chapter 5. It is organised into two sections: first, the conclusions, which encapsulate the important findings in relation to the stipulated objectives; and second, the recommendations, which propose culturally and contextually relevant interventions at both policy and practice levels.

6.2 Conclusion

6.2.1 Synthesis of Findings

The current study has made an important contribution by systematically comparing and contrasting the effects of food insecurity on child development in two contrasting urban environments: London, a high-income welfare state, and Islamabad, a low- to middle-income environment with weak social safety nets. In both cities, the results aligned that poverty and inequality are the key factors driving food insecurity, but in different ways. In London, the widest welfare gaps, austerity measures, and restrictions on eligibility for Universal Credit were observed to contribute to household vulnerability. In contrast, structural poverty, child labour and gender inequity in maternal empowerment were identified as the most significant contributors in Islamabad.

The outcomes of food insecurity were seen in three dimensions of child development. Nutritionally, the city of Islamabad was characterised by a high proportion of stunted, wasted, and underweight children. In contrast, the city of London exhibited an obesity paradox, with

children from impoverished families being more prone to dietary sources of energy-rich, yet nutrient-poor, food. Education results were also poorer: in Islamabad, school attendance and readiness were hindered by poverty and child labour, whilst in London, holiday hunger exposed children to school meals as a means to learn and interact. Mental health was identified as a concealed but important aspect, and both urban children had to endure stress, stigma, and intergenerational consequences of caregiver anxiety.

There were mixed responses at the institutional levels, but both situations exhibited systemic failure. London's welfare policy and Free School Meals (FSM) programs slightly mitigated some risks but left significant gaps. In contrast, the BISP and Ehsaas cash transfer programmes in Islamabad offered partial protection but were poorly targeted in urban areas and prone to corruption. In general, the comparative analysis revealed that food insecurity manifests in various ways and has diverse outcomes. Yet, it consistently harms the health, education, and well-being of children, underscoring the importance of structural determinants.

6.2.2 Theoretical Reflections

The use of theoretical frameworks enhanced the interpretation of these findings. The Social Determinants of Health (SDH) framework helped in understanding how poverty, housing, employment, and welfare systems act as structural factors that contribute to food insecurity and influence developmental outcomes in children. The Ecological Systems Theory by Bronfenbrenner offers a multilevel prism, showing how macrosystem influences, such as national economic policy and social protection reforms, are filtered down by exosystem influences, including community institutions, and ultimately impact children at the microsystem level, including family nutrition and school involvement. Sen's Capability Approach also reconceptualised food insecurity as not just a calorie deficiency, but a loss of fundamental human capacities, restricting the growth, education, and dignified existence of children. The combination of these frameworks increased the external validity of the outcomes

by contextualising local issues within overall conceptual frameworks, which supports the idea of the multidimensionality of food insecurity as a child development obstacle.

6.3 Recommendations

6.3.1 Policy Recommendations for London

Food insecurity in London cannot be addressed without systemic changes that extend beyond short-term charity. One of the priority interventions is to increase Free School Meal (FSM) eligibility to a universal entitlement. Not only would this enhance access to nutrition for all children, but it would also reduce the stigma associated with means-tested provision, which tends to discourage its use among those who need it. Addressing obesogenic environments is also important, which means taking measures in urban planning and ensuring stricter control over the concentration of fast-food outlets in deprived neighbourhoods. It is necessary to reform the welfare safety nets, especially Universal Credit, so that families with children are not pushed through the tight eligibility gateways or experience delays in payments. Lastly, the long-term plans must be aimed at decreasing food bank dependency. Although they play an important emergency role, policy must be changed to ensure structural entitlements that entrench food security as a right, rather than a charitable intervention.

6.3.2 Policy Recommendations for Islamabad

In Islamabad, structural poverty should be addressed while respecting cultural and gendered dynamics. Policies that are gender-sensitive need to be emphasised, especially those that invest in maternal education and empowerment, because it has been established that empowered women make a significant contribution to household food and nutrition security. The focus on BISP and Ehsaas programmes should be strengthened and urbanised to encompass slum and low-income urban households that are often left out by rural-oriented strategies. The fight against child labour should also be factored into food security, where poverty reduction policies

are combined with child protection and education policies to end the intergenerational disadvantage cycle. Since food prices in Pakistan are volatile, policies must address the issue of inflation vulnerability by increasing subsidies on basic food products and stabilising the prices of staples. These measures, combined, would provide children in Islamabad with more reliable protection, reducing not only acute hunger but also long-term developmental risks associated with food insecurity.

6.3.3 Cross-Cutting and Global Lessons

Several lessons apply to both contexts and are relevant to debates on child food insecurity worldwide. It is imperative to combine nutrition and education policies, and school meal delivery is associated with attendance incentives to support not only health but also learning outcomes. All interventions should be guided by a rights-based approach, where food security is viewed as a fundamental right, rather than a discretionary privilege, as per the Capability Approach by Sen and the understanding that food is a social determinant of health, as outlined by the World Health Organisation (WHO, 2021). The role of civil society in delivering supplemental nutrition programmes can also be formalised through the enhancement of NGO-government partnerships, with accountability and oversight remaining with the state. Lastly, there must be recommendations based on the Sustainable Development Goals (SDGs), specifically SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being), with local interventions supporting global efforts to eliminate hunger and promote the health of children.

6.4 Strengths and Limitations of the Study

The strengths of this study are numerous, and chief among them is the systematic review methodology, which provided a rigorous and transparent process for identifying, appraising, and synthesising evidence across various sources. It offers the best cross-contextual understanding of food insecurity by adopting a comparative approach between London and

Islamabad, demonstrating how the two settings exhibit varying levels of food insecurity but share consistent risks to child development. The combination of theoretical frameworks, including the Social Determinants of Health, Bronfenbrenner's Ecological Systems Theory, and Sen's Capability Approach, also contributed to the analytical richness of the review. However, certain limitations should be noted. The use of secondary data limits the control of study-specific biases, and the heterogeneity of the study designs complicates the synthesis of results. Moreover, there was no longitudinal evidence in Islamabad that would restrict the conclusions regarding the long-term impact of food insecurity on children.

6.5 Future Research Directions

Further research should build upon this study by addressing current gaps and generating stronger, context-specific evidence. Longitudinal and child-centred research studies are urgently needed in Islamabad to understand the long-term developmental consequences of food insecurity, including its effects on education, health, and psychosocial outcomes. This research aims to provide a deeper understanding of intergenerational disadvantage cycles. The assessment of Free School Meal (FSM) expansions and other welfare reforms in London is necessary to determine the extent to which these programmes have been effective in alleviating inequalities and addressing food insecurity in children. On a larger scale, cross-country studies would be useful in uncovering common trends across countries and acknowledging local differences, thus informing international policy agendas as well as culturally specific interventions.

6.6 Final Reflection

This dissertation reiterates the fact that food insecurity is a multidimensional and context-dependent phenomenon that consistently compromises the health, learning, and psychosocial well-being of children. Despite this difference between London and Islamabad, the data clearly

indicate that structural inequalities are likely to persist unless there is systemic change, and children will remain at the mercy of disadvantageous cycles. The study can help to better understand the influence of context on results and emphasise similar global issues, thereby bridging the gap between evidence obtained in high-income and low- to middle-income environments. The results urge governments to act urgently to secure the rights and abilities of children so that food insecurity does not undermine the development of any child.

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Appendices

Appendix A: Characteristics of Selected Data

Study Author	Aim	Setting / Sample	Methodology	Design Validity	Strengths	Weaknesses	Outcomes	Relevance to Research Objectives	Direct Quotes from Article	Themes
Alsager et al. (2025)	To assess associations between household food insecurity (HFI) and growth/development outcomes among preschool children in rural Pakistan.	2795 children (aged 4.5–5.5 years) across four districts in rural Sindh, part of stepped-wedge RCT (LEAPS).	Multilevel mixed-effects models, IDELA, executive function tests, and anthropometrics.	Strong (cluster RCT base, validated IDELA tools, robust statistical models).	Large representative sample, validated measures, adjustment for confounders.	Limited to rural Sindh; no long-term follow-up; executive functioning showed no association with the outcome.	HFI is significantly associated with lower WAZ, IDELA, and literacy scores, but has no impact on executive functioning.	Directly aligns with the research objective (link between food insecurity and child development).	"Increasing levels of HFI were associated with lower child WAZ, lower total IDELA scores and lower emergent literacy scores"	Nutritional growth, literacy outcomes, and ECCE interplay.
Khan (2019)	To analyse issues/problems of child schooling in the slums of Islamabad.	Qualitative study in Islamabad slums (semi-structured interviews with parents, teachers, community members).	Participant observation, interviews, FGDs, purposive sampling.	Moderate (qualitative, depth but limited generalizability).	Rich qualitative insights; contextual focus on Islamabad slums.	Small-scale; excludes other cities; lacks quantitative nutrition data.	Found low enrollment due to poverty, poor infrastructure, child labor, parental illiteracy, and discrimination.	Relevant to objectives: highlights socio-economic barriers in Islamabad shaping child education and development.	"Thousands of childrn are living the lives of misery and unending poverty in the slums of Islamabad… deprived of basic needs of education and healthcare"	Poverty, slum schooling barriers, and child vulnerability.
Pool and Dooris (2022)	To measure the prevalence of food insecurity	UK, nationally representative sample	Cross-sectional survey; logistic regressi	High validity (FAO standard scale, national	Provides a national benchmark that	Adult-based; doesn't disaggregate child-specific outcomes.	The prevalence of severe food insecuri	Notably, this trend is significant in	"Severe food insecurity was reported by	Income inequality, structural

	in the UK before COVID-19 using FAO's Food Insecurity Experience Scale (FIES).	of 2000 adults (2019).	on analysis.	ly representative).	is comparable globally.		ty rose to 3%, while moderate and severe food insecurity combined accounted for 6.6%; this is strongly linked to income, age, and tenancy.	the London context, as it indicates a rising level of household food insecurity before the pandemic.	3% of the sample, an increase of 66.7% over the last UK analysis."	determinants, and child risk implications.
Loopstra and Lambie-Mumford (2023)	To review food insecurity and food bank use in the UK, exploring the mismatch between need and provision.	Review paper, UK-wide focus (Trussell Trust and independent food banks).	Literature review, secondary data analysis, and conceptual framework development.	Strong (synthesises national datasets and qualitative evidence).	Situates food banks in policy debates; highlights gaps in support.	Does not provide new empirical child-level data; focuses on access/use.	Demonstrates that food bank use fails to meet the scale of food insecurity; 15% of adults are food insecure, compared to 4% using food banks.	Highly relevant to London: The policy's reliance on food banks is linked to persistent child hunger.	"Levels of moderate and severe food insecurity are 3.75 times higher than food bank use."	Welfare gaps, stigma, reliance on food charity, and systemic inequality.
Iqbal et al. (2020)	To assess food insecurity, nutrition, and health of child labourers in Sindh.	634 child labourers (ages 5–14) in Karachi, Hyderabad, and Thatta.	Cross-sectional study; respondent-driven sampling; anthropometrics, surveys.	Moderate (hidden populations, but robust measurements).	Unique focus on working children; quantitative nutrition data.	Limited to working children, not representative of all children.	30% wasted, 15.5% stunted, 51% food insecure; dietary inadequacy widespread.	Highly relevant: shows direct links between food insecurity, malnutrition, and child exploitation in Pakistan.	"About half the children (51.1%) were suffering from food insecurity."	Child labour, malnutrition, structural poverty.

Hasnain (2020)	To examine the impact of poverty and food insecurity on children's educational outcomes in Pakistan.	Islamabad, urban low-income households, qualitative sample of families.	Interviews, focus groups with parents/children.	Moderate (qualitative design, context-rich but small-scale).	Captures the lived experiences of poverty's effect on child schooling.	Limited generalizability; no quantitative nutritional measures.	Poverty and food insecurity are linked to poor educational outcomes and child vulnerability.	Relevant to the Islamabad case, this analysis highlights the socio-economic drivers of developmental inequalities.	"Poverty has deprived the children of achieving education and is directly linked to food insecurity."	Food insecurity, poverty, and barriers to child education.
Meadows et al. (2024)	To review evidence on the health effects of the UK cost-of-living crisis, including food and housing insecurity.	UK, rapid review of 41 studies (2020–23).	Rapid review of published and grey literature.	High (systematic rapid review, UK-focused).	Synthesises wide evidence, identifies vulnerable groups.	No primary data; reliant on heterogeneous studies.	Found the strongest evidence of respiratory illness in children 0–4 from cold/mouldy homes; predicted 500,000 more children falling below the poverty line.	Highly relevant for London, linking food insecurity with the cost-of-living crisis and child health.	"It is anticipated that in 2023, a further 500,000 children across England will fall below the UK poverty line, with families struggling to buy essential items like food and clothing."	Cost of living, child vulnerability, and malnutrition risk.
Aceves-Martins et al. (2018)	To determine the nature, extent and consequences of child food insecurity in the UK.	Rapid review of 109 studies (5 UK, rest high-income countries).	Systematic rapid review of qualitative and quantitative studies.	High (NIHR-funded, robust review).	Comprehensive, includes grey literature (e.g., holiday hunger, breakfast clubs).	Few UK studies; inconsistent measurement of FI.	Found food insecurity negatively affects health, academic, emotional and social	Very relevant for London; details children's lived FI experiences and policy	"Children described cognitive, physical, emotional, social and behavioural	Child hunger, education, holiday hunger, and school support.

							outcomes.	responses.	responses to FI, including sadness, embarrassment, and strategies to cope with hunger"	
Odd et al. (2022)	To examine deprivation and childhood mortality in England.	2,688 child deaths reviewed (2019–20), National Child Mortality Database.	Cohort study, regression modelling.	Very high (statutory dataset, Poisson regression).	Large, nationally representative dataset; modifiable factors analysed.	Mortality focus, not direct developmental outcomes.	Mortality risk doubled in the most deprived vs the least deprived; >20% of deaths could be avoided if deprivation were eliminated.	Relevant for London—clear gradient linking deprivation to child vulnerability.	"Over one-fifth of all child deaths may be avoided if the most deprived half of the population had the same mortality as the least deprived."	Deprivation, child mortality, and policy intervention points.
Chua et al. (2025)	To examine the effects of child poverty and under-5 services spending on early childhood development (ECD).	143 English local authorities (2017–22 birth cohorts).	Longitudinal ecological study, within-between modelling.	Strong (large dataset, ASQ-3 validated developmental measures).	Captures both poverty and spending trends, while controlling for confounders.	Ecological design, not individual-level causation.	10% ↑ in poverty linked to 9% ↑ in children not developmentally on track; £100 ↑ in early years spending → 4% ↓ not on track.	Directly relevant: links poverty and spending to developmental outcomes in London.	"Higher spending on early-years childrens services and lower child poverty were associated with better outcomes before school entry"	Poverty, early childhood development, and spending policy effects.
Jung et al. (2025)	To assess how child poverty impacts nutrition	Multi-country dataset, including the	Cross-country comparative	Moderate to high (comparative	Captures structural and policy	London-specific data not disaggregated; broader	The report shows child poverty	Adds comparative context for	"Child poverty continues to exacer	Child Poverty, Food Insecu

	and developmental health across global contexts.	UK/Europe; analysis relevant to the London context.	analysis.	but less localised).	differences across regions.	scope is required.	is strongly linked to food insecurity, poor nutrition, and delayed development.	London, which is useful for situating the case study globally.	bate nutritional deficiencies, particularly in urban low-income households."	rity, and Comparative Policy
Sultan and Iram (2023)	To examine the impact of food insecurity on the double burden of malnutrition among children in Pakistan.	Islamabad and national sample, 3,625 children aged 6–59 months (PDHS 2018).	Hierarchical mixed-effects logistic regression.	High (large representative sample, robust analysis).	Uses nationally representative data, with dietary diversity serving as a proxy.	Focuses on malnutrition, not broader educational/ developmental outcomes.	Food insecurity ↑ risk of double burden (OR 1.49). Poor households and low maternal education aggravate risks.	Directly relevant to the Islamabad context, links FI → dual malnutrition.	"Child food insecurity increases the risk of double burden (OR: 1.49, CI: 1.03–2.16)"	Double burden, diet diversity, maternal education.
Ishfaq et al. (2022)	To explore women's empowerment and its relationship with household food and nutrition security.	1,879 rural Pakistani households (Punjab, Sindh, KPK).	Rural Women Composite Empowerment Index + multilevel regression.	High (novel empowerment index, robust modelling).	Highlights empowerment dimensions beyond agriculture (mobility, autonomy, domestic violence).	Rural-only; not directly Islamabad-specific.	Empowered women's households are 70% food secure, 98% nutritionally secure.	Relevant to the Islamabad case through maternal empowerment → child food/nutrition outcomes.	"Regression analysis found a positive and significant relationship between women's empowerment and food and nutrition security."	Women's empowerment, maternal influence, food/nutrition security.
Wang et al. (2025)	To explore socioeconomic disadvantages and childhood malnutrition in Pakistan.	19,380 children (MICS Wave 6, 2017–20), rural and urban.	Logistic regression, UNICEF malnutrition framework.	Very high (large representative dataset, UNICEF-backed).	Robust, nationally representative; detailed breakdown of urban vs rural.	Less focus on developmental/educational outcomes.	46% of children are malnourished; 22% are at a lower risk due to dietary diversity;	Directly relevant to Islamabad—shows SES, parental education, and	"Children of educated parents experience significantly lower malnutrition rates.	Poverty, diet diversity, SES, and parental education.

							affluent households have a 42% lower risk.	sanitation as determinants.	Meeting minimum dietary diversity reduces malnutrition risk by 22%"	
Mansoor and Subhan (2022)	To analyze the mediating role of food insecurity between economic factors and child health in Pakistan.	24,809 households (HIES 2018–19, Pakistan).	Hayes' mediation model (logistic regression).	Moderate to high (innovative mediation approach, robust dataset).	Novel use of food insecurity as a mediator in a large sample.	Limited to self-reported household survey data.	Food insecurity significantly worsens child health outcomes; asset poverty increases vulnerability to adverse health outcomes.	Relevant for Islamabad—shows FI as mediator between economics and child health.	"If a household is food insecure, that will lead to a high risk of child adverse health problems."	Food insecurity, asset poverty, and child health.
Khaliq et al. (2025)	To examine how food insecurity affects child nutrition and health outcomes in households in Islamabad.	Islamabad: Survey of low-income households with children under 12 years.	Cross-sectional household survey and anthropometric assessments of child health.	Moderate — cross-sectional studies limit causality but provide rich, context-specific evidence.	Context-specific data on Islamabad families highlights urban-rural disparity in food insecurity.	Limited generalisability beyond Islamabad; cross-sectional design.	High prevalence of child malnutrition in food-insecure households; negative impact on academic readiness.	Directly relevant — provides Islamabad-specific data on food insecurity and child health.	"Food insecurity was significantly associated with higher stunting and underweight rates among Islamabad children."	Food insecurity and child malnutrition in urban areas of Islamabad.
Gallegos et al. (2021)	To explore food insecurity among migrant and low-income families in urban contexts, with policy implications.	Urban UK and international migrant family contexts; survey/interview-based analysis.	Mixed-methods: household surveys and qualitative interviews with migrant families.	High triangulation of quantitative and qualitative data enhances robustness.	Captures the lived experiences and structural challenges of migrant families, providing policy-	Findings may not fully generalise beyond urban migrant families.	Migrant families experience disproportionate food insecurity, leading to child developmental and health issues.	Relevant — offers insights into vulnerable populations in the urban UK, providing useful compa	"Migrant families described food insecurity as a persistent struggle affecting both the physica	Migrant family vulnerability: intersection of food insecurity and social exclusion.

					relevant insights.			rative context.	l and mental health of children.”	
Smith et al. (2025)	To assess the role of deprivation and neighbourhood food environments on parental feeding practices and child eating behaviours in London.	London: 728 families with primary school-aged children recruited from four boroughs.	Computer-assisted interviews and objective child BMI measures; geospatial mapping of food environments.	High — large sample, validated instruments, objective BMI measures.	Combines socio-economic and environmental data; nuanced findings on deprivation and feeding practices.	Cross-sectional limits causal claims; geographic scope limited to four boroughs.	Deprivation is strongly associated with obesogenic feeding practices, poor child diet, and higher BMI.	Directly relevant — focuses on child development in London and socio-economic deprivation.	“Greater family deprivation was significantly associated with more obesogenic home food practices and higher child BMI.”	Deprivation, obesogenic environments, parental feeding, and childhood obesity in London.
de Oliveira et al. (2020)	To systematically review and meta-analyse the relationship between household food insecurity and early childhood development outcomes globally.	Global: 19 studies were included (15 HICs, 4 LMICs), involving children under 5 years old.	Systematic review and meta-analysis of peer-reviewed and grey literature.	High — systematic methodology, inclusion of HIC and LMIC studies, strong statistical synthesis.	Provides comprehensive global evidence, highlighting key developmental risks associated with food insecurity.	Heterogeneity in the included studies; limited data from LMICs restricts global comparability.	Household food insecurity significantly increases risks of poor cognitive, socio-emotional, and motor development.	Relevant — frames global evidence, useful for situating Islamabad and London findings in a broader context.	“HFI was associated with developmental risk (OR 1.28; 95% CI [1.14, 1.45]) and poor math and vocabulary outcomes.”	Global child development risks from food insecurity: evidence gaps in LMICs.
Trussell Trust (2021)	To document and analyse the drivers of hunger, destitution, and food insecurity across the UK, including the role of policy and welfare systems.	UK-wide surveys with 716 food bank users, 323 referral agencies, and 20 managers in the Trussell Trust network.	Mixed-methods: quantitative surveys, secondary data analysis, and in-depth qualitative interviews.	High — rigorous multi-source data collection and triangulation, but focused on food bank users.	Large UK-wide dataset; strong focus on destitution and policy failures driving food insecurity.	Over-represents severe cases using food banks; excludes non-users of food aid.	Food insecurity in the UK is linked primarily to extreme poverty, welfare policy design, and systemic exclusion.	Directly relevant — provides UK-wide systemic evidence that underpins the London findings.	“95% of people referred to food banks were destitute, with 62% including a disabled person, and 320,000	Poverty, destitution, and structural policy drivers of food insecurity in the UK.

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