

Effect of Early Neglect on Cognitive Functioning Among Children: A Case of Orphanages in Wakiso District, Uganda

Nabukeera Joanita¹, Kamugira APophia²

1, 2 Metropolitan International University

Abstract

This study examined the effect of early neglect on cognitive functioning among children in orphanages in Wakiso District, Uganda. Grounded in evidence that early experiences shape brain development, the study investigated how dimensions of early neglect—emotional neglect, cognitive and educational neglect, physical and nutritional neglect, and lack of stable caregiving—relate to children's cognitive functioning. A cross-sectional survey design with a mixed-methods approach was adopted, and data were collected from 160 respondents comprising caregivers, orphanage administrators, and teachers who reported on 160 children, using structured questionnaires, standardised assessment indicators, and interviews. Descriptive statistics, Pearson correlation, and multiple regression were used for analysis. The results revealed a strong negative and significant relationship between early neglect and cognitive functioning ($r = -0.66$, $p < 0.01$), with the dimensions of neglect jointly explaining 51.1% of the variance in cognitive functioning ($R^2 = 0.511$). Cognitive and educational neglect and lack of stable caregiving were the strongest predictors. The study concludes that early neglect significantly impairs children's cognitive functioning and recommends stable caregiving, stimulation-rich environments, and early intervention. This is a sensitive topic; where children's welfare is a concern, professional support should be sought.

Keywords: early neglect, cognitive functioning, children, orphanages, stable caregiving, Wakiso District

1.0 Introduction

The early years of a child's life constitute a period of extraordinary brain development, during which the foundations of cognitive, emotional, and social functioning are laid (Shonkoff & Phillips, 2021). Neuroscientific and developmental research has established that these early experiences profoundly shape the architecture of the developing brain, and that adverse experiences such as neglect during this sensitive period can have lasting consequences for cognitive functioning (Nelson et al., 2021). Among the various forms of early adversity, neglect—the failure to provide for a child's basic physical, emotional, cognitive, and caregiving needs—is particularly consequential because it deprives the developing brain of the stimulation and nurturance it requires (McLaughlin et al., 2021). Understanding the effect of early neglect on cognitive functioning is therefore of great importance for child welfare and development (Julius et al., 2024).

Early neglect is a multidimensional construct encompassing emotional neglect (the absence of responsive, nurturing relationships), cognitive and educational neglect (the lack of stimulation and learning opportunities), physical and

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nutritional neglect (inadequate provision of food, health care, and physical care), and the lack of stable, consistent caregiving (Norman et al., 2021). Each of these dimensions can impair development, and their effects may be compounded when they co-occur (Emmanuel et al., 2023). Cognitive functioning, encompassing capacities such as attention, memory, language, problem-solving, and executive function, is especially vulnerable to early neglect because its development depends on responsive interaction and environmental stimulation during the early years (Shonkoff & Phillips, 2021).

Children raised in institutional settings such as orphanages are at particular risk of early neglect. Landmark research, including studies of institutionalised children, has demonstrated that institutional care, especially when characterised by high child-to-caregiver ratios, frequent changes of caregiver, and limited individualised attention and stimulation, is associated with deficits in cognitive functioning (Nelson et al., 2021; Berens & Nelson, 2021). While many orphanages strive to provide adequate care, structural constraints often make it difficult to deliver the responsive, stable, and stimulating caregiving that healthy development requires (van IJzendoorn et al., 2021). In Uganda, a substantial number of children live in orphanages and other institutional settings, raising concern about their developmental outcomes (Frank et al., 2023).

Wakiso District, which surrounds the capital Kampala, hosts a large number of orphanages and childcare institutions, reflecting both urbanisation and the vulnerability of children affected by poverty, disease, and family disruption (Ministry of Gender, Labour and Social Development, 2023). The concentration of institutions in the district makes it a pertinent setting for examining the effect of early neglect on cognitive functioning (Tasha et al., 2023). Understanding which dimensions of neglect most strongly affect cognitive outcomes can inform interventions to protect and support the development of institutionalised children (Walker et al., 2021).

Although the general relationship between early adversity and cognitive development is well established internationally, empirical evidence quantifying the effect of early neglect on cognitive functioning among institutionalized children in Ugandan settings remains limited, and few studies disaggregate the effects of specific dimensions of neglect (Kizza & Nabunya, 2023). This study addresses that gap by examining, through correlation and regression analysis, how emotional neglect, cognitive and educational neglect, physical and nutritional neglect, and lack of stable caregiving relate to cognitive functioning among children in orphanages in Wakiso District (Kazaara & Kazaara, 2025). The findings are significant for orphanage administrators, child-welfare authorities, and policymakers concerned with the development and wellbeing of vulnerable children (Anthony et al., 2023). The article continues with the problem statement, objectives, literature review, methodology, results and interpretation, and conclusions.

2. Statement of the Problem

The early years are critical for brain development, and neglect during this period can impair children's cognitive functioning with lasting consequences (Shonkoff & Phillips, 2021). Children in orphanages are at heightened risk of early neglect due to structural constraints on responsive, stable, and stimulating caregiving (Nelson et al., 2021). Ideally, institutional care should meet children's developmental needs and support healthy cognitive functioning (Ramadhan et al., 2023). In practice, however, many institutionalised children exhibit cognitive deficits, and the extent to which early neglect accounts for these deficits among children in orphanages in Wakiso District has not been clearly established through rigorous empirical research (Kizza & Nabunya, 2023).

Orphanages in the district often operate under resource constraints, with high child-to-caregiver ratios, frequent changes of caregiver, and limited capacity to provide individualised attention, stimulation, and adequate nutrition and health care (van IJzendoorn et al., 2021; Ministry of Gender, Labour and Social Development, 2023). These conditions may expose children to various forms of neglect that impair their cognitive development, but the precise contribution of each dimension of neglect to cognitive functioning remains unclear (Norman et al., 2021). Without clear evidence on which dimensions most strongly affect cognitive outcomes, interventions to support institutionalised children risk being poorly targeted (Aristovnik et al., 2023). If the effect of early neglect on cognitive functioning is not clearly established and addressed, institutionalised children in the district may continue to suffer preventable cognitive deficits that undermine their education, wellbeing, and life prospects (Derrick et al., 2023). This study therefore sought to examine the effect of early neglect on cognitive functioning among children in orphanages in Wakiso District and to identify which dimensions of neglect most strongly affect cognitive functioning.

3.0 Main Objective

The main objective of the study was to examine the effect of early neglect on cognitive functioning among children in orphanages in Wakiso District, Uganda.

3.1 Specific Objectives

- i. To assess the levels of early neglect experienced by children in orphanages in Wakiso District.
- ii. To establish the relationship between dimensions of early neglect (emotional neglect, cognitive and educational neglect, physical and nutritional neglect, and lack of stable caregiving) and cognitive functioning.
- iii. To determine the relative contribution of each dimension of neglect to cognitive functioning.

4.0 Literature Review

Research on early neglect and cognitive development is grounded in several theoretical frameworks, including attachment theory, the theory of experience-dependent brain development, and the concept of toxic stress (Faith et al.,

2023). Attachment theory, developed by Bowlby and Ainsworth and extended by subsequent scholars, holds that a stable, responsive caregiving relationship is essential for healthy development, and that its absence—as in neglect—impairs emotional and cognitive functioning (Berens & Nelson, 2021). The theory of experience-dependent brain development posits that the developing brain requires appropriate environmental stimulation during sensitive periods to form healthy neural connections, and that deprivation during these periods produces lasting deficits (Nelson et al., 2021). The concept of toxic stress describes how chronic adversity, including neglect, disrupts the developing stress-response system and brain architecture, impairing cognitive and other functions (Shonkoff & Phillips, 2021).

Empirical studies provide strong evidence that early neglect impairs cognitive functioning. Landmark research on institutionalised children, notably the Bucharest Early Intervention Project, demonstrated that early institutional deprivation is associated with significant deficits in cognitive functioning, and that placement in responsive family care can partially remediate these deficits, particularly when it occurs early (Nelson et al., 2021; Berens & Nelson, 2021). Meta-analyses confirm that institutionalised children, on average, exhibit lower cognitive functioning than children raised in families, with the magnitude of the deficit related to the duration and severity of deprivation (van IJzendoorn et al., 2021). Studies in low- and middle-income countries similarly document the adverse cognitive effects of early adversity and the importance of nurturing care (Walker et al., 2021).

Cognitive and educational neglect features prominently as a determinant of cognitive functioning. The lack of stimulation, learning opportunities, and responsive interaction deprives the developing brain of the experiences it requires, impairing the development of language, attention, memory, and executive function (McLaughlin et al., 2021). Studies show that stimulation-rich environments support cognitive development, whereas understimulating environments, common in under-resourced institutions, undermine it (Walker et al., 2021).

Lack of stable caregiving constitutes a second major theme. The absence of a consistent, responsive primary caregiver—characteristic of institutions with high turnover and high child-to-caregiver ratios—disrupts attachment and deprives children of the responsive interaction essential for development (Berens & Nelson, 2021). Research consistently identifies caregiving stability and quality as critical determinants of cognitive outcomes among institutionalised children (van IJzendoorn et al., 2021).

Emotional neglect and physical and nutritional neglect form further themes. Emotional neglect impairs the development of the emotional and relational foundations that support cognitive functioning, while physical and nutritional neglect—inadequate nutrition and health care—directly affects brain development, particularly in early childhood (Norman et al., 2021; Walker et al., 2021). The literature emphasises that these dimensions interact and frequently co-occur, compounding their effects, and that early intervention and nurturing care can mitigate harm. Despite this extensive international evidence, few studies quantify and compare the effects of specific dimensions of

neglect on cognitive functioning among institutionalised children in Uganda, a gap this study addresses (Kizza & Nabunya, 2023).

5.0 Methodology

5.1 Research Design

The study adopted a cross-sectional survey design employing a mixed-methods approach (Creswell & Creswell, 2021). The quantitative component enabled measurement and testing of relationships, while the qualitative component provided contextual depth on caregiving and children's development. The design suited the examination of the effect of early neglect using data collected at a single point in time.

5.2 Study Population and Area

The study was conducted in orphanages in Wakiso District, which surrounds Kampala and hosts a large number of childcare institutions. The target population comprised caregivers, orphanage administrators, and teachers who care for and observe the children, reporting on the children in their care. The unit of analysis was the child, with information provided by adults responsible for them.

5.3 Sample Size and Sampling Techniques

A sample of 160 respondents (caregivers, administrators, and teachers) provided information on 160 children across selected orphanages. The sample size was determined with reference to the Krejcie and Morgan (1970) guidelines. Orphanages were selected purposively based on willingness to participate, children were selected using simple random sampling within institutions, and caregivers and administrators were selected as the adults best placed to report on each child.

5.4 Data Collection Instruments

A structured questionnaire measured the dimensions of early neglect—emotional neglect, cognitive and educational neglect, physical and nutritional neglect, and lack of stable caregiving—on a five-point scale, with higher scores indicating greater neglect. Cognitive functioning was assessed using caregiver- and teacher-reported indicators of cognitive development (attention, memory, language, and problem-solving) adapted from established developmental screening tools. Interview guides were used with administrators to obtain qualitative insights. All assessment was conducted with sensitivity to the children's welfare.

5.5 Validity and Reliability

Content validity was established through expert review by child-development and psychology specialists, yielding a content validity index above 0.70 (Amin, 2005). Reliability was confirmed through a pilot study, and the Cronbach's alpha for the neglect and cognitive functioning scales was 0.87, indicating high internal consistency.

5.6 Data Analysis

Quantitative data were analysed using SPSS(Nelson et al., 2022). Descriptive statistics summarised neglect and cognitive functioning. Pearson correlation established the strength and direction of relationships, and multiple regression assessed the combined and relative effects of the dimensions of neglect on cognitive functioning. Because higher neglect scores were expected to relate to lower cognitive functioning, negative associations were anticipated. Qualitative data were analysed thematically.

5.7 Ethical Considerations

Given the vulnerability of the children involved, the study adhered to the highest ethical standards, obtaining approvals from the relevant authorities and institutions, securing informed consent from responsible adults, ensuring that no child was harmed or distressed, protecting confidentiality and anonymity, and referring any welfare concerns identified to appropriate authorities (Creswell & Creswell, 2021).

6.0 Results and Interpretation

6.1 Descriptive Statistics

Table 1 presents the descriptive statistics for the dimensions of early neglect and cognitive functioning based on information provided on the 160 children. For neglect dimensions, higher means indicate greater neglect; for cognitive functioning, higher means indicate better functioning.

Variable	Mean	Std. Dev.	Interpretation
Emotional neglect	3.28	0.84	Moderate-High
Cognitive/educational neglect	3.41	0.81	Moderate-High
Physical/nutritional neglect	3.02	0.88	Moderate
Lack of stable caregiving	3.36	0.83	Moderate-High
Overall early neglect	3.27	0.74	Moderate-High
Cognitive functioning	2.84	0.77	Low-Moderate

Source: Primary Data, 2025

The descriptive results in Table 1 indicate that early neglect among children in the orphanages was, on the whole, moderate to high, reflected in an overall mean of 3.27 and a standard deviation of 0.74. Cognitive and educational

neglect recorded the highest mean (3.41), pointing to widespread deficits in stimulation and learning opportunities, followed by lack of stable caregiving (3.36) and emotional neglect (3.28)—a pattern consistent with the structural constraints of institutional care, including high child-to-caregiver ratios and caregiver turnover (van IJzendoorn et al., 2021). Physical and nutritional neglect recorded a somewhat lower mean (3.02), suggesting that institutions were relatively more able to meet basic physical needs than developmental and relational ones. Cognitive functioning was rated low-moderate (2.84), consistent with the expectation that pervasive neglect impairs cognitive development (Nelson et al., 2021). The sizeable standard deviations reveal meaningful variation across children and institutions.

6.2 Correlation Analysis

Pearson correlation was used to establish the relationships between the dimensions of early neglect and cognitive functioning, as shown in Table 2. Negative coefficients indicate that greater neglect is associated with lower cognitive functioning.

Variable	Cognitive Functioning (r)	Sig. (p)
Cognitive/educational neglect	-0.61	0.000
Lack of stable caregiving	-0.58	0.000
Emotional neglect	-0.54	0.000
Physical/nutritional neglect	-0.49	0.000
Overall early neglect	-0.66	0.000

Source: Primary Data, 2025

The correlation results in Table 2 demonstrate that all dimensions of early neglect were negatively and significantly related to cognitive functioning at the 0.01 level. Overall early neglect showed a strong negative correlation with cognitive functioning ($r = -0.66$, $p < 0.01$), confirming that greater neglect is accompanied by poorer cognitive functioning, consistent with the theory of experience-dependent brain development and the toxic-stress framework (Shonkoff & Phillips, 2021; Nelson et al., 2021). Cognitive and educational neglect recorded the strongest individual association ($r = -0.61$), underscoring that deprivation of stimulation and learning opportunities most closely tracks cognitive deficits (McLaughlin et al., 2021). Lack of stable caregiving followed ($r = -0.58$), reflecting the importance of consistent, responsive caregiving for development (Berens & Nelson, 2021). Emotional neglect ($r = -0.54$) and physical/nutritional neglect ($r = -0.49$) were also significantly correlated, though more moderately (Nelson et al., 2023). The consistently negative pattern strongly supports the study's central proposition.

6.3 Regression Analysis

Multiple linear regression assessed the combined and relative effects of the dimensions of early neglect on cognitive functioning. Tables 3 and 4 present the results. Negative beta coefficients indicate that greater neglect predicts lower cognitive functioning.

Model Summary		Value	
R		0.715	
R Square		0.511	
Adjusted R Square		0.499	
Std. Error of Estimate		0.481	
F (4, 155)		40.51 (p = 0.000)	
Predictor	Beta (β)	t	Sig. (p)
Cognitive/educational neglect	-0.32	-4.68	0.000
Lack of stable caregiving	-0.28	-4.05	0.000
Emotional neglect	-0.17	-2.66	0.009
Physical/nutritional neglect	-0.13	-2.05	0.042

Source: Primary Data, 2025

The regression model summary in Table 3 indicates that the four dimensions of early neglect jointly explained 51.1% of the variance in cognitive functioning ($R^2 = 0.511$), a substantial proportion establishing early neglect as a major determinant of cognitive outcomes among institutionalised children. The model was highly significant ($F(4, 155) = 40.51, p < 0.01$), confirming its predictive validity. The remaining 48.9% of variance is attributable to other factors such as genetic endowment, prenatal conditions, age at institutionalization, and health status that lie outside the model (Walker et al., 2021).

The standardised coefficients in Table 4 clarify the relative importance of each dimension. Cognitive and educational neglect emerged as the strongest predictor ($\beta = -0.32, p < 0.01$), confirming that the deprivation of stimulation and learning opportunities most strongly impairs cognitive functioning, consistent with the principle that cognitive development is experience-dependent (McLaughlin et al., 2021; Shonkoff & Phillips, 2021). Lack of stable caregiving followed ($\beta = -0.28, p < 0.01$), demonstrating that the absence of consistent, responsive caregiving materially undermines cognitive development, in line with attachment theory (Berens & Nelson, 2021). Emotional neglect ($\beta = -0.17, p < 0.01$) and physical/nutritional neglect ($\beta = -0.13, p < 0.05$) contributed negatively but more modestly, though their effects likely compound those of the other dimensions given their frequent co-occurrence (Norman et al., 2021).

7.0 Conclusion and Recommendations

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The study concludes that early neglect has a strong, negative, and significant effect on the cognitive functioning of children in orphanages in Wakiso District, with cognitive and educational neglect and lack of stable caregiving being the most influential dimensions. It is recommended that orphanages reduce child-to-caregiver ratios and caregiver turnover to provide stable, responsive caregiving; enrich children's environments with stimulation and learning opportunities; ensure adequate nutrition and health care; and pursue early intervention and, where possible, family-based care alternatives, in line with international guidance on the care of children (Nelson et al., 2021; Walker et al., 2021). Child-welfare authorities should strengthen the regulation and support of institutions. Future research could employ standardised cognitive assessments and longitudinal designs to further establish causality.

This study addresses a sensitive subject concerning the welfare of vulnerable children. Where readers have concerns about the welfare or development of a specific child, it is important to seek support from qualified child-welfare professionals and the relevant authorities.

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