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Study on Developmental Differences of 1-5 Years Old Children Raised in Orphanages, Adoptive Families and Biological Families in Lusaka District, Zambia.

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ABSTRACT

The aim of this study was to investigate the developmental differences that arise from different patterns of child care. Thus, the major objectives of this study were to investigate intellectual development, caregiver-child attachment, and physical growth of 1-5 years old children raised in orphanages as well as investigating whether the development of children in orphanages was delayed relative to that of children raised by their biological parents and adoptive families.

Methodologically, this study used a quasi-experimental design which compared using the sample that consisted of three groups of children from different types of caring environment with 8 children per group: a family comprising the child's biological parents, an adoptive family and an orphanage (24 total). The children were sampled using purposive since particular units were studied, whereas simple random gave each respondent equal opportunity to be picked as a participant. The analysis was done using SPSS for data from standard tests and questionnaires. Themes for descriptive data form.

The results of the study showed that there was an organized distribution of secure and insecure attachment styles in the sample. Only the orphanage group showed disorganized attachment. Home environment scale showed significant differences between the orphanage group and both the family reared groups but no significant differences between the biological and adoptive family reared groups. On the cognitive tests, differences were found between the orphanage and the family reared children. The orphanage children lagged behind the family reared children in both subtests. For physical growth, the orphanage children lagged behind the family reared groups on the body mass index. The analysis found no significant effects of age and gender. Therefore, based on these findings, it is recommended that orphaned children should be raised in a family setup rather than an orphanage: whenever possible such children should be placed with their extended family and placement in an orphanage should indeed be the last option.

Key words: *Orphanage Adoptive Biological Developmental Differences*

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1.0 INTRODUCTION

This study aimed at investigating the developmental differences that may exist from children receiving different patterns of care. The different environmental contexts are: children in orphanages, adoptive and biological families. This chapter contextualizes the problem statement and the background information pertaining 'to the social issues of raising children in orphanages and adoptive families in Zambia and worldwide. The escalating prevalence of orphanages is discussed in terms of response by various stakeholders such as non-governmental organizations. The chapter also presents the aim and objectives of the study. In this paper, the term institutionalization is used to refer to the pattern of care resulting from placement of a child in an orphanage. In different parts of this paper, other terms that have been taken to mean the same are attachment quality, attachment style and attachment status. All these terms refer to attachment classification.

1.1 BACKGROUND

Research on the development of institutionalized infants and toddlers has a long history. For many decades the main concern in the institutions was the survival of the infants as many of them in the foundling homes died before their second birthday (Gunnar et al, 2000). It was observed that with improvements in sanitation and medical care, the rate at which the children died in the institutions declined and therefore concerns shifted to the issue of developmental delays which were attributed to both environmental stimulus and maternal deprivation (Dennis, 1938; Lowry, 1940; Skeels, 1940; Skeels & dye, 1939; Skeels, Updegraff, Wellman & Williams, 1938; Spitz, 1945). Gunnar (2000) recognized levels of hardships that exist in institutions which differ from institution to institution and from country to country. The conditions that the children experience in the institutions are multifaceted, varying and changing over time. These experiences differ across institutions and are almost certainly not the same even within an institution. For instance, some children may receive better care than others do. Most people would attribute the varying experiences in the institutions to lack of maternal figure for the children, but as Rutter (1981) noted, it is inaccurate to construe maternal deprivation as the major cause of all the detrimental effects of early institutionalization. To understand these conditions experienced by children in the institutions, Gunnar et al. (2000) identified three levels that could be helpful in considering the privation encountered at the institutional settings. "At the most basic levels there are needs for adequate nutrition, hygiene and medical care. The extent to which these basic needs are met may vary and fluctuate with political and economic conditions of the country. At the next level, it is important to consider the need for stimulation and opportunity to act upon the environment in ways that support motor, cognitive, language and social emotional development. Therefore, there is the need for stable interpersonal relationships and opportunity to develop an attachment relationship with a consistent caregiver" (Gunnar et al, 2000 p 678).

Precariously, institutional rearing of infants and young children in baby homes or orphanages often fails to support normal behavioral and physical development (Ames, 1990). Studies exploring the developmental effects of institutionalization on young children have indicated numerous delays and disturbances in development. Institutional rearing often, but not always, means high exposure to pathogens, low stimulation, lack of opportunity to form attachments to adults as well as poor nutrition (Johnson, 2000). Studies have shown that children in deprived and unstimulating environments suffer substantial and widespread developmental delays, including physical and motor delay, cognitive impairment and depressed

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language development (Dennis, 1973; Provence & Lipton, 1962). Early attachments have been proved to be important not only as an indicator of the parent-child relationship but also for their significant effects on other aspects of the child's functioning. In their study, Shonkoff and Phillips (2000) noted that when children are placed in orphanages that have adequate physical care with no particular attention to social or cognitive stimulation as well as few opportunities to establish relationship with a consistent caregiver, these children end up showing remarkable delays in motor and cognitive growth during and even beyond the period of institutionalization.

Moreover, the plight of orphans has not only been felt by the government but by non- governmental organizations, community-based organizations and religious institutions. These organizations have tried to supplement and fill the gaps left by the government. Most of these organizations recognize that orphaned and vulnerable children should be cared for by the community rather than institutions, which is a thoughtful approach because research has shown that children who are cared for in orphanages exhibit more psychological problems compared to those exposed to a foster care system (Ahmed et al., 1996; Ahmed et al., 2005). If bringing up children in orphanages still remains or becomes a necessity as it is because alternatives are lacking, the crucial question is, which conditions might relieve or decrease the negative impact of institutional care? Depending on the type of explanation for the developmental delay, one may have different ideas about more or less favorable conditions in the children's homes. The maternal deprivation concept according to Bowlby (1951) refers to a stable and continuous attachment relationship with a sensitive caregiver. The stimulus deprivation theory (Casler, 1961) suggests that the lack of physical and social stimuli of any kind may be the most important cause of intellectual delays and enriching the orphanage environment would result in better intellectual development. Of course, these theories are not incompatible, and they both may point to important components of a more constructive children's home environment.

This study compared three groups of children raised in different settings: orphanage, adopted and parent- raised children. If orphanage- raised children score lower on the various dependent variables to be measured than the parent-raised children, this could be attributed to two broad factors; firstly, loss of normal parental care and secondly abnormal restrictions of experience characterized in the orphanages. Since these issues are both essential to investigate, a third group of adopted children was introduced to participate in the study. If the adopted children resembled the parent-raised group more than the orphanage-raised group, this would be evidence that abnormal environmental factors are more significant than parental loss and that adoption and/or fostering successfully protects children against the negative developmental consequences of parental loss. The groups were compared with respect to their environments, security of attachment, cognitive development and physical development.

1.2 STATEMENT OF THE PROBLEM

The extent of Orphan institutionalization and increase of Orphan in Lusaka since 2004 and before is still very alarmingly massive, yet very little has been reported, (OVC situation analysis, 2004). This massive ignorance about what is really happening to orphans in orphanages is a source of problem because ignorance is no defense and it punctuates high risk of developmental differences in physical, caregiver-child attachment and cognitive or intellectual development especially of 1-5 years old children living in these environments. In fact, the impact of the suffering of the orphan and vulnerable child is contained

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within the confines of the family and the community. Daily, children suffer from malnutrition and childhood illnesses, (Madhavan, 2004). The impact of their suffering is seldom seen outside their immediate surrounding; although people estimate how much these orphans could be suffering but those who live with them in their environment know exactly what they are going through, (OVC situation analysis, (2004). On the contrary, those who are not affected continue without knowledge of the growing crisis and the pending impact the crisis will have on the country as a whole. Thus, the need to undertake the study and provide information from institutions of the country given the responsibility to take care of children in Zambia.

In Africa the number of children's homes is currently increasing because of the many HIV/AIDS orphans who cannot be cared for anymore by members of the extended family (Kodero, 2001; Nyambedha, Windibba & Aaghrd-Hansen, 2003). The orphanhood rate in Zambia also increases daily as a result of the HIV/AIDS pandemic. Estimated number of orphans in Zambia varies from one source to another. One estimate by OVC situation analysis, (2004) is that 1.656 million children, or more than one-third of those under the age of 15, are orphans who have lost one or both parents. Less than one quarter of the orphans have lost their parent or parents to other forms of sickness or accidents, while more than three-quarters are orphans because of AIDS. Instead of getting smaller, or at least not increasing, the problem of orphanhood is increasing rapidly. Between 1996 and 1998, there was a national increase of over fifteen percent in the number of orphans (OVC situation analysis, 2004).

This rapid growth in the number of orphans has led non- governmental organizations, churches and concerned individuals to come up with centers and institutions where these children are cared for and have basic necessities of life like food and shelter among others, (OVC situation analysis, (1999). The major reasons among others to undertake this study was the concern on the number of orphanages in Zambia that has mushroomed thereby becoming a business and source of income for some of the Zambian caregivers. This may compromise both the quality of care the children receive and the emotional involvement of caregivers with the children. Moreover, there are serious social, behavioral, emotional and psychological effects of orphanage life on children. Therefore, there was need to conduct more research in Zambia on developmental trajectories of these children.

1.3 AIM

To investigate the intellectual development, caregiver-child attachment, and physical growth of 1-5 years old children raised in orphanages as well as investigating whether the development of children in orphanages was delayed relative to that of children raised by their biological parents or adoptive families.

1.3.1 OBJECTIVES

i. To investigate the different lifestyles of 1-5 years old children in different environmental settings.
ii. To explore the range of physical, socio-emotional and psychological factors that differs among the three groups of 1-5 years old children.
iii. To find out the effects of orphanage life and /or adoption on cognitive development.

1.3.2 RESEARCH QUESTION

- How do the orphanage and biological families' home environments differ?
- What were the potential differences in cognitive competence across the groups?

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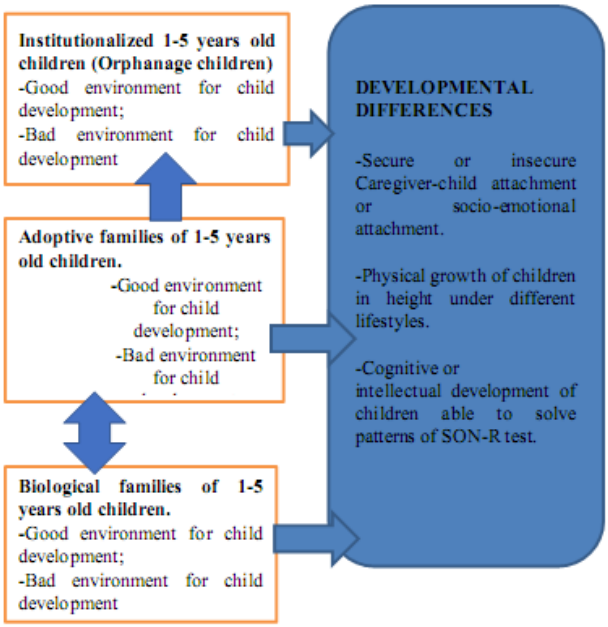
- To what extent did orphanage children exhibit more physical growth delay relative to the family reared groups?

1.4 CONCEPTUAL FRAME-WORK

Attempts to investigate the adverse effect of institutionalization on the development of children has been described in a number of studies beginning from the 1940s (Bowlby, 1951; Dennis, 1973; Freud & Burlingham, 1973; Goldfarb, 1944; Goldfarb, 1945; Provence & Lipton, 1962; Spitz, 1945). This is reinforced by the notion that '… little can be done in these institutions if nothing is done in the home and in the world…' (De Mello, 1997:153). There is an implication that parents and the home environment have a central role to play if they are considered to have a significant stake in physical, socio emotional (attachment), intellectual development or cognitive development of children, (Denessen 2007). It is from this background that the conceptual framework was developed from as shown below.



Source: Research thesis Author, 2019

Figure 1.0 Showing the main characteristics of the conceptual framework for the study.

The framework above is based on an assessment of the situation of orphans in orphanages and adopted children as experimental groups and children from biological families as the control group. The assessment considers the environment to being good or bad depending on the development differences on caregiver child attachment, cognitive or intellectual development and physical growth. The independent variable being developmental differences with dependable variables in the names of environment settings (orphanage, home with parents and adoptive parents), physical, intellectual and socio-emotional, (Ames, 1990).

1.5 THEORETICAL FRAME-WORK

This study identified Vygotsky's (1962, 1978) sociocultural-historical theory to provide the framework for the inquiry. The concepts of the zone of proximal development (ZDP), mediation and intergenerational transmission of educational success underpin the conceptual model. Parental influence based on their education and literacy skill levels are treated as variables for assisting children's learning through meditational interaction in both formal and informal communication (Rogoff, 2003) to illustrate the praxis of the social-cultural theory in both direct and indirect ways. By virtue of this theory, there is implicit suggestion that the adult must be more knowledgeable than the learner. Bourdieu's (1966) cultural capital helps to illustrate such intergenerational transmission of culture as well as educational opportunities from parent to child that may occasion the success or failure of the primary school going child in the study (Feinstein et al., 2008). Bourdieu's (1966) notion of cultural capital posits that one's home background can exert influence on pupils' failure or success in school. This discourse is relevant because it highlights what an individual child derives from her home and what parents in particular households, class or

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culture are able to transmit to their children to determine their educational outcomes.

1.6 RATIONALE AND RELEVANCE

The study outcomes will add to the knowledge pool in the area of Development Studies as well as a solution to academic studies as well as the institutions under study. Academicians could use the findings in improving administration and encouraging local community-based organizations to take up their role in the promotion of social accountability as they take care of Orphanages or simply children. Thus, this study is very important because findings may be used by the Community to improve operations. In addition, the Ministry of Community Development and Social Services may use the findings to improve the operations of Children Based Organizations in the country.

CHAPTER TWO: LITERATURE REVIEW

This chapter reviews relevant literature on the effect of institutionalization. The review starts with what is known about early institutionalization and child development, followed by attachment theory and institutionalization as well as sensitivity. Thereafter, the review considers research evidence pertaining to; Risk and protective factors in institutional upbringing, and quality of caregiving as an intervention target.

2.1. Developmental consequences of early institutionalization globally.

Globally, the adverse effect of institutionalization on the development of children has been described in a number of studies beginning from the 1940s (Bowlby, 1951; Dennis, 1973; Freud & Burlingham, 1973; Goldfarb, 1944; Goldfarb, 1945; Provence & Lipton, 1962; Spitz, 1945). The results of this and subsequent research were rather consistent in reaching the same general conclusion: deprivation in early life tends to be associated with major impairments in various areas of development. These impairments include a range of physical abnormalities, such as brain growth deficiencies, sensory integration difficulties, stereotypes, speech and language delays (e.g., Cermak & Daunhauer, 1997; Judge, 2003; Mason & Narad, 2005; Miller, Kiernan, Mathers & Klein-Gitelman, 1995). and psychological and behavioral problems, such as inattention/hyperactivity (Kreppner, O'Connor, Rutter, Beckett, Castle, & Croft, 2001; O'Connor et.al., 1999; Roy, Rutter & Pickels, 2004).

Furthermore, Children in orphanages are at risk with regard to intellectual development and this has been attributed to among other factors care in large groups and poor environments. Due to such factors, brain development may become delayed during the formative period after birth (Chungani et al., 2001) and the lack of challenging stimuli and stable attachments may impair development of institutionalized children (Gunnar, Bruce & Grotevant, 2000; Johnson, 2000; miller, 2005; Van IJzendoorn & Juffer, 2006). Orphanage life according to research is said to present difficulties in relations with peers (Hodges & Tizard, 1989a, 1989b; Roy et al., 2004), conduct problems (Groza, Ryan, Cash, 2003; Fisher, Ames, Chisholm, & Savoie, 1997) and physical growth delay.

In their report of a longitudinal study of physical growth and health of post institutionalized Romanian adoptees, Mare & Audet (2006, p.4) noted that, "one of the most immediately apparent deficits of institutionalized children is their profound growth delay. Previous research on post institutionalized children has consistently indicated that at the time of adoption, they are very small for their age, often below the fifth percentile 1 d and 9th percentiles". In this report, it was also noted for height and weight between 3 that orphanage children experience growth deficiency not only due to malnutrition but also because of "poor quality of interaction and stimulation offered by the low caretaker to-child ratio in these institutions" (Mare

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& Audet, 2006, p, 5). This type of growth deficiency has been referred to as psychosocial dwarfism. Although children were found with this growth deficiency, it has been observed that upon removal from stressful or neglectful conditions, children suffering from this growth deficiency make remarkable improvement in both height and weight. For example, Rutter et al (1998) reported that although at the time of adoption 51% and 34% of his sample of Romanian adoptees fell below the third percentile for weight and height, respectively, approximately two years later only 2 0 0 and 1% of the sample remained that low in weight and height, respectively. Similarly, Johnson and Dole (2000) reported that the majority of 252 children adopted from Eastern European institutions showed rapid growth catch-up once they were adopted. Nevertheless, at three years post adoption, length of institutionalization was correlated with physical size, and of those children who had spent eight months or more in an orphanage, 31% remained below the 10th percentile in height.

Although researchers have not recognized a single pattern that may characterize children with early institutional experience, Rutter, Kreppner, O'Connor, and ERA study team (2001) made an attempt to delineate the features that are specifically associated with institutional deprivation. Analysis of the various features of the functioning of children with early institutional experience, such as attachment problems, inattention/over activity, emotional difficulties, autistic features, cognitive impairment, peer difficulties and conduct problems reported to be associated with institutional rearing by previous studies, revealed that four features were much more common in the Romanian sample (n = 165), and all four of them were significantly associated with the age at entry into adoption; these are: (l) attachment disturbances with disinhibited behaviors; (2) inattention/over activity; (3) quasi-autistic features; (4) cognitive impairment. Rutter and colleagues (2001) suggested that as these features frequently co-occurred and were related to the early deprivation, presumably, a common etiological factor, they may constitute an institutional deprivation pattern. This finding requires further validation. The present study examined whether the institutional deprivation pattern that compromises attachment relations, cognitive development and physical growth found in Romanian adoptees would also be found in orphanage children reared in Zambia.

2.2 Attachment and Institutionalization using Regional examples

In recent years, there has been much discussion concerning a sensitive period for the development of attachment (Shonkoff & Phillips, 2000; Thompson, 2001). Much of this inquiry has been guided by the formulations of attachment theory, which describes how infants develop their attachments to caregivers (Ainsworth, 1973; Ainsworth, Blehar, Waters & wall, 1978; Bowlby, 1969/1982, 1973; Thompson, 1998). Attachment theory postulates that during the first years of life the child develops attachment relationships with specific individuals, such as parents or caregivers, who interact with the child on a regular basis (Bowlby, 1982). This interaction, according to Bowlby (1998), when nurturing, predictable, and attuned to the infant's or child's attachment needs, facilitates healthy development of the child within the "environment of evolutionary adaptiveness' ,or related developmental niches. This means that in infancy, formation of secure relationships is a major developmental milestone. And the frightening nature of insensitivity and enduring unresponsiveness in orphanages may trigger children's attachment disorganization (Lyons-Ruth & Jacobvitz, 1999; Solomon & George, 1999).

The best example regionally is that of Vorria et al. (2003) who found that 66% of institutionalized Greek infants at the age of 13 months had a breakdown in their attachment strategy; they

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experienced an extreme overrepresentation compared with the 15 0 0 disorganized attachment found in normative groups (Van IJzendoorn et al., 1999). These findings were replicated in a study by Zeanah, Smyke, Koga, Carlson, and the Bucharest group (2005), examining institutionalized Romanian children's attachment at the age of 24 months, reported a remarkably similar rate of disorganized attachment at 65%.

Hence, attachment organization in children exposed to early institutional care may manifest itself in a different way (e.g., in atypical or disorganized attachment) than the attachment organization of normally developing children with a history of differential, specific and continuous attachments.

Therefore, in the present study, the focus was on the attachment organization of the three groups of children and the study examined whether and how the attachment organization differed from the attachment organization of orphaned children reared in regular but adoptive families and children living with birth parents. The gaps in literature is mainly on the comparison basis, instead of two categories adoptive and orphanage children, there was need to compare with biological families also. This is because children can be adopted by non-biological relatives and relatives from the extended family. Thus, the inclusion of children from biological families.

2.3.1 Risk and protective factors in Local institutional upbringing.

Although institutional deprivation has significant impact on the development of the child, empirical studies demonstrate that it is not deterministic. For instance, in a study of child parent attachment following early institutional deprivation, O'Connor et al. (2003) found that, despite even prolonged exposure to very extreme and global social deprivation at local level of the examined children in early life, attachment relationship within the normal range was observed in almost 50% of the children. Similarly, Vorria et al. (2003) found in their study on attachments of infants in the Metera orphanage that about 30% of the children had developed organized patterns of attachments, some of them even secure attachments. Further evidence from intervention studies conducted in institutions and orphanages suggests that even modest improvement of concrete, specific aspects of caregiving may lead to better physical, mental and socio-emotional outcomes in the children. Extra interaction between an experimenter and a child in 5 minutes daily sessions in an Iranian orphanage produced improvement in mental and psychomotor development of children (Hakimi Manesh, Mojdehi, & Tashakkori, 1984). A 15 minutes auditory, tactile and visual stimulation program twice a day, 5 days a week during a month, led to significant gains in height, weight and head circumference in the experimental group of newborn children reared in a Korean orphanage (Kim, Shin, & White-Traut, 2003). Short daily play sessions in an Indian orphanage also led to significant improvement of children's development (Tneja, Sriram, Beri, Aggrawal, Kaur, & Puliel, 2001).

Precariously, Ames (1997) found that on each of the measures she administered, there was substantial within-group variation. She then concluded that not all of the orphanage children were experiencing all of the identified problems. This raises a risk and resiliency question. Why do some children recover from such extreme deprivation seemingly unscathed, whereas other children carry scars into their futures?

These findings suggest the presence of certain protective and/or risk factors which may buffer or exacerbate the influence of institutional care on children's development. However, the role of these factors remains understudied. They may be related to the way and extent in which institutional environment responds to the children's physical, cognitive and emotional needs, that may vary from

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global neglect of physical, nutritional, stimulation and relational needs to specific deprivation of emotional or cognitive needs (Gunnar, 2001; Gunnar, Bruce, & Grotevant, 2000; Johnson, 2000; Miller, 2005).

In addition, individual characteristics and circumstances of the child may play an important role in the differential susceptibility to the institutional deprivation. Indeed, some studies point out that gender may play a role, with girls demonstrating more resilience and positive outcomes than boys (e.g., Roy et al., 2004; Vorria et al., 1998).

Being a favorite of the caregivers in an orphanage was also found to have a positive influence on the child's development (Morison, Ames, & Chisholm, 1995). Furthermore, presence of siblings seems to have a mitigating effect on the developmental risks of orphanage children (Roy et al., 2004). Studies with non-institutionalized children point out that along with genetic background and temperament, prenatal history, e.g., substance exposure (see Zhang et al., 2005 for a review) may influence the course of the child's development (Rutter, 2006).

Another important factor is the child's health condition. During the last decade, the number of children abandoned because of their HIV status has been constantly growing. This health condition emerges as a potent risk factor due to the high level of stigma and discrimination among caregivers towards HIV positive children (Tarasova, 2006). Due to this problem the quality of care these children receive in orphanages may decrease and their developmental needs may be compromised even further. Also, naturally, children with HIV status are the least preferred candidates for potential adoptive parents. The HIV/AIDS pandemic has caused a breakdown in the usual family and neighborhood networks that in the past provided much of the alternative care for children who lost their parents. This not only leads to a growing number of street children but also to a rapid extension of residential care settings in various African countries (e.g., SOS villages). In sum, it is still not clear how different aspects of the orphanage environment interplay with different individual characteristics of the child, and which environmental or individual factors may act as risk or protective factors in the course of the orphanage child's development.

In the present study the focus was on individual characteristics of orphanage children and direct observations of different features of the orphanage environment in order to explore how they interplay with each other and to what extent they lead to developmental outcomes in the domains of physical growth, attachment and cognition. Understanding the interplay of possible risk and protective factors in the development of children subjected to orphanage care is of critical importance for the identification of the targets for intervention programs directed at the child care in orphanages.

2.3.2 Quality of Caregiving as an Intervention Target

One common feature of the intervention studies is the focus on the improvement of the quality of the child caregiver-relationships, which triggers improvement in different domains of the child's development. This is in line with findings in attachment intervention studies which pointed out that sensitive caregiving in early childhood is causally related to the security of attachment mediating children's development in different domains. Intervention studies with family reared children suggest that a key determinant in the prevention of insecure infant attachment is sensitivity of the caregiver (e.g., Van IJzendoorn, Juffer, & Duyvesteyn, 1995). In a study on adopted children, an intervention aimed at promoting adoptive parents' sensitivity was successful and resulted in an increased number of secure infant-parent attachment relationships (Juffer, Hoksbergen, Riksen- Walraven, & Kohnstamm,

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1997), and a lowered number of insecure, disorganized attachments (Juffer, Bakermans-Kranenburg, & Van IJzendoorn, 2005). Moreover, preventive interventions that aimed at promoting parental sensitivity were also successful in lowering disorganized attachment in children (Bakermans-Kranenburg, Van IJzendoorn, & Juffer, 2005).

A number of intervention studies have found that improvement of the quality of caregiving through the enhancement of the caregiver's sensitivity may improve the quality of attachment organization in children and produce better outcomes in other developmental domains in orphanage reared children. The present study examined the emotional availability of the caregiver through parental dimensions such as sensitivity, structuring, non-intrusiveness and hostility while assessments are also made of the child's response to caregiver and involvement with the caregiver.

2.4 Institutionalization in Zambia.

According to the 2007 Zambian survey on demographic healthy, 13% of all the Children living in households are vulnerable while 14.9% are orphans (GRZ, 2007:301). This shows that the rate of institutionalization and vulnerability of Children is high in Zambia. Moreover, by 2009, Bolston University and University of Zambia (2009) found that, they were about 1, 603, 928 OVCs in Zambia, a figure still likely to be underestimated of the actual situation.

The major reasons for this include; High poverty levels and the number of children abandoned because of their HIV status or death of the caregivers has been constantly growing, (National HIV and AIDs Policy, 2005). Moreover, the financial, physical and psychological toll is as heavy on the caregivers as the children (GRZ and UNDP, 2011). This high disease burden and other social-economic challenges have forced or put some children in alternative care. However, getting data on the current or accurate (2012 or 2013) figures of children that are in formal care settings including trends over the years is difficult. Moreover, a review of literature indicated that there are about 4,500 children living in residential care in Zambia (Dunn & Williams, February, 2008:11). These children live in the estimated 101 registered children's homes in Zambia (Dunn and Williams, 2008:11). Discussions with staff from the Ministry of Community Development, Mother and Child Health revealed that there is no detailed and updated data on residential care in Zambia. This was partly attributed to limited staff to regularly visit the institutions and collect such data. It was for these reasons among others that the need to undertake this study was necessary. Moreover, less is known on the challenges faced apart from the major challenges that were revealed through key informant interviews which affect the operations of institutions, and not the children's developmental challenges in institutions or organisations.

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3.0 METHODOLOGY

3.1 RESEARCH PARADIGM

This research is centered on both positivist and post-positivist approaches. It is based on mixed methodology. The diagram below shows the methodological paradigm which will be used for this study survey.

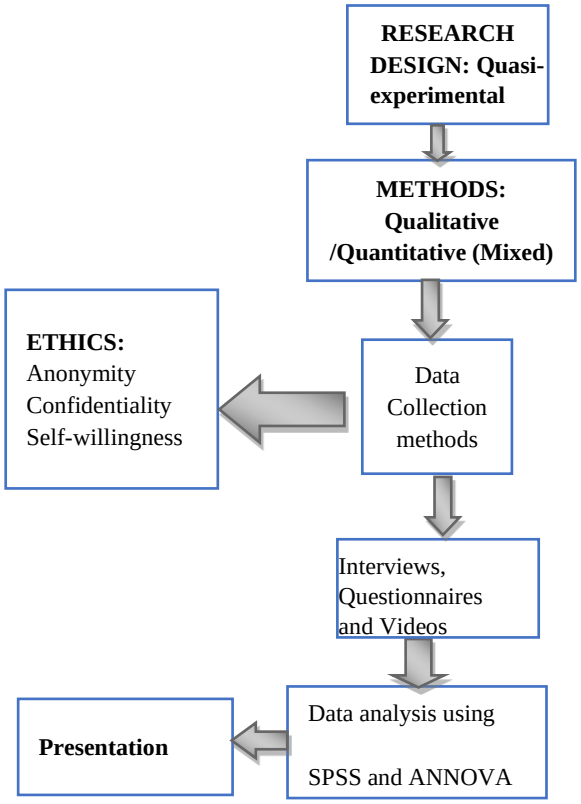

Figure2: Survey Methodological paradigm
Source: Research Thesis Author, 2019

3.2 RESEARCH DESIGN

The researcher for this study utilized a quasi-experimental method to be specific nod-equivalent control groups. The experiment involved the orphaned and adopted children to be the experimental group with the control group in the name of children from biological families. The study design (quasi-experimental was used because it is suitable to compare effects of three different environmental settings of care on children without the same baseline and these are: orphanage, adopted and birth families. If the expected differences in socio-emotional (i.e., attachment), cognitive and physical development of the orphanage- raised children, children living with adoptive families and parent- raised children are confirmed by the study, it may lead to sounder research and more-convincing causal links between orphanage care and children's developmental delays in various domains. The quasi- experimental design was used because the study needed to compare three variables and especially that the variables baselines were different from each other, like it was to compare orphanage children, adopted children and biological children living with their parents, (Ibid, 2012).

3.3 SCOPE OF THE STUDY

This study was carried to include Children and their caregivers who were taken from three different groups of child caring patterns in Lusaka. The experimental group was taken from an orphanage in Lusaka's SOS Childrens Villages area whereas the two control groups were from different parts of Lusaka, namely: Chazanga, Emmasdale, Kabwata, Chelstone and Avondale respectively. The families in the project were all from middle class areas which are medium populated residential areas.; as such they provided valuable information. The major justification of choosing medium residential areas was because the experimental groups where from these areas. Additionally, it would have been wrong to compare low density residential areas and medium or medium and high but picking the same categories gives a fair starting point for comparisons.

3.4 SAMPLING PROCEDURE

All the different institutions under study had a representation in the research through random and non - random types of sampling. The sample size for this study was 24. Since the study compared three groups, each group had 8 participants

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meaning that, orphanage group had 8 participants with 33.3%, children in adoptive homes were 8 with 33.3% and children living with their biological parents were also 8 with 33.3. The total number of participants in the study was 24 giving 100%. This was considered taking into account of resources (time and financial) and manageability. The sample size was chosen to give Triangulation of data in order to ensure that the evidence collected answer the questions using mixed research method, (Kothari, 2004). A random approach was utilised.

3.5 RESEARCH METHODS

The researcher used both qualitative and quantitative research methods for data collection. In order to have full information, the researchers used specific suitable data collection tools such as standardized tests, questionnaires, interviews and video recordings. Standard tests, interviews and video tapes were used to compare the three groups of respondents under study, whereas questionnaires were used to compare care givers Child attachment on home environment potential assessment. This means that quantitative and qualitative research methods were used to collect the data. The use of a mixed method approach was to facilitate complementarity of method's weaknesses. But generally speaking, the design was mainly qualitative because there were no adequate funds and time to acquire appropriate equipment's and to do quantitative experimentations and hypothesis testing.

3.6 DATA ANALYSIS

The quantitative data were analyzed using the SPSS statistical package. Frequencies cross tabulations and percentages were used to describe distributions of single and summated variables. Measures of central tendency were used to analyze the data. ANOVA was used to assess the statistical significance of differences and interactions among variables. It is worth noting that the analysis of the videotapes for attachment classification and emotional availability of the parent- child interactions were rated based on high level of consensus with two other researchers. Therefore, the videotapes were re-coded by an expert coder for standardized ratings. The major reasons of using statistical package for social sciences (SPSS) was to analyse quantitative data for easy interpretations of the results. On the other hand, some data were analysed using descriptive method, by putting it in tables. The reason for the qualitative analysis was that most of the data collected could not be quantified thus, they were qualitative in nature. This made make it easier for categorization of the data to be done and information to be easily understood.

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4.0 PRESENTATION OF FINDINGS

4.1 DESCRIPTION OF SAMPLE

Children were taken from three different groups of child caring patterns in Lusaka. The experimental group was taken from an orphanage in Lusaka's SOS Childrens Villages area whereas the two control groups were from different parts of Lusaka, namely: Chilenge, Emmasdale, Kabwata, Chazanga and Chaisa respectively. The families in the project were all from middle class areas which are medium populated residential areas. The adopted children were taken in by the deceased relatives of the parents. The table la shows the relation and the number of months the children had been living with these adoptive families and the orphanage.

Three groups were utilized in the study. These groups were in similar areas but with different patterns of care for the children. The orphanage group had 8 participants with, children in adoptive homes were 8 with 33.3% and children living with their biological parents were also 8 with 33.3 0 0. The total number of participants in the study was 24 giving 100%.

In table la, the number of months in which the two groups have been staying in the orphanage and adoptive family have been presented.

Table 1. Description of adopted and orphanage children and duration of stay

Child's id	Relationship with caregiver	Duration of stay in months
orphanage		15
orphanage		13
orphanage		14
orphanage		17
orphanage		22
orphanage		12
orphanage		16
orphanage		18
paternal aunt (dad's cousin)		14
maternal grandmother		20
maternal cousin		18
maternal aunt (mom's cousin)		13
maternal aunt (mom's cousin)		10
paternal niece		16
maternal aunt		11
maternal grandmother		10

Source: Field Data, 2019

It should be noted that none of the children were adopted by the direct link to their parents but were related to the distant lineage of the parents. These children did not frequently visit at these adoptive families when the parents were alive but they understood and knew that they were related to these families. Some of these children had older siblings from the same parents while others are dispersed because of economic issues. It was however, the wish of these adoptive parents that these children be raised as one family but the current economic circumstances did not allow for this.

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4.1.1 AGE AND GENDER OF RESPONDENTS

There were a number of male and female respondents that took part in the research as shown in the table below:

Table 1b: AGE b GROUP and SEX Cross tabulation

Sex		Group			Total
		Orphanage	Adopted	Biological	
Male	3.07	1		1	2
	3.08	1			1
	3.09			1	1
	4.00		1		1
	4.02			1	1
	4.04		1		1
	4.08		1	1	2
	4.10	1			1
	5.00	1			1
	5.02		1		1
Total		4	4	4	12
Female	3.07		1		1
	3.10		1		1
	3.11			2	2
	4.00	1			1
	5.00	2			2
	5.01		1		1
	5.02	1		1	2
	5.03			1	1
	5.04		1		1
Total		4	4	4	12

The table above shows the distribution of the children's ages by their gender and group.

The table shows that the entire population consisted of 24 participants of whom 12 were boys and 12 girls. Each group had 8 participants. It can be noted that at least each of the groups included one child of the youngest and the oldest ages

Source: Field Data, 2019

Table 1c: Descriptive: means and standard deviations for age by gender and group. Dependent Variable: Age

Group	Gender		Mean	Std. deviation
Orphanage		4	3.81	.93
Adopted	Boys	4	4.76	.50
Biological	Girls Total	8	4.28	.86
Total	Boys	4	4.29	.49
	Girls	4	4.06	1.12
	Total	8	4.17	.81
	Boys	4	3.57	.56
	Girls	4	4.07	1.11
	Total	8	3.82	.85
	Boys	12	3.89	.70
	Girls	12	4.29	.93
	Total		4.09	.83

Source: Field Data, 2019

When further statistical analysis was performed for particular group means, the following were found: the orphanage group had a total mean age of 4.28, n=8; the children from adoptive homes had a total mean age of 4.17, n= 8 and the biological group, mean age 3.82, n = 8.

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After performing a two- way ANOVA of ages by gender and group, non - significant difference between gender and the children's ages were found, (F (2, 18) = 1.015, p.382). This clearly shows that the gender and age was evenly distributed across the three groups.

4.1.3 DEVELOPMENTAL DIFFERENCES ON CAREGIVER-CHILD ATTACHMENT

Attachment styles were coded for the children in different family settings. Table 2 below shows the descriptive for attachment quality. The infants' patterns of attachment behavior were classified as secure, insecure-avoidant, or insecure-resistant or disorganized.

Table 2: Group by Attachment Cross tabulation

Group	Secure	Attachment Quality Insecure ambivalent	Insecure avoidant	Disorganized	Total
Orphanage	2	0	3	3	8
o o of Total	8.3%	000	12.5%	12.5%	33.3%
Adopted	6	2	0	0	8
00 Of Total		8.300		00	33.3%
Biological	7			0	8
0 0 of Total	29.2%		0	00	33.3%
Total	62.5%	4.200	12.5%		100%

Table 2 presents the number of children in each group with their attachment status.

Source: Field Data, 2019

Percentages for attachment status have been presented in totals. It can be seen from the table that 62.5% of the children were securely attached, 25% insecurely attached and 12.5 % showed a disorganized strategy of attachment. In all, 87.5% of the children in the population N= 24 presented an organized attachment strategy.

The Chi- squared results showed a relationship between the groups and attachment styles, (6, N= 24) 16.800, p 0.004. In the results, the Exact significant test is reported because 9 cells were found to be less than the count of 5. Thus, the type of family setting in which the child belonged to was a factor in yielding significant differences on security of attachment. Since the chi-squared test of group and attachment is significant, further tests were performed to indicate the magnitude of the association. Squaring the Phi value (.837) gives the percentage of how much variation of attachment is accounted for by type of family setting or group. Results showed that 70% of the variation is accounted for by the type of family or group. Thus, the association was of high strength, with p= .01

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4.1.4 DIFFERENT ENVIRONMENTAL LIFE STYLES USING THE CHILD'S HOME ENVIRONMENT.

Pearson correlation for the HEPA and HOME inventory total score.

The HEPA and HOME measures were based on similar subscales. The HEPA included physical support, emotional support, framing, individualizing, training in social responsibility, demonstration and explanation of ideas and intellectual capacitation. The HOME subscales were as follows; learning materials, language stimulation, physical environment, responsivity, academic stimulation, modeling, variety and acceptance. The Pearson correlation coefficient was calculated to determine the proportion of variance in the scores of the two scales that was shared and extent to which the variation in the scales was explained by the scores. There was a significant positive correlation between the HEPA and HOME scores (r =.785, N =24, p < 0.01, 2-tailed). The child's home environment may influence the parent's sensitivity and to find out about this association, correlations were performed for the emotional availability scale and the HEPA and the HOME inventory scales. Results show that there was a strong positive correlation for both the scales (r =.717, N =24, p < 0.01, 2-tailed) and (r =.775, N =24, p < 0.01, 2tailed) respectively.

Table 4: Group by HEPA score Cross tabulation

Group	HEPA Scores															
	36	37	38	43	48	49	55	56	58	59	60	62	63	64	65	
Orphanage	3	2	3	0	0	0	0	0	0	0	0	0	0	0	0	
Adopted	0	0	0	0			0	2	2	1	0	1	1			
Biological	0	0	0	1			1	0		1		0	1			

N for all the groups = 8.

Source: Field Data, 2019

The total HEPA scores for all the subscales are presented in table 4. This clearly shows that the orphanage group got the lowest scores on their totals across all the subscales.

Table 4b: Descriptive: means and standard deviations for HEPA and HOME inventory scores

Group		Mean	Std. deviation	95% Std. error	confidence interval for Mean Lower bound	Upper bound
HEPA						
Orphanage						
Adopted		37.00	.93	.33	36.22	37.77
Biological	8	58.75	3.99	1.41	55.41	62.09
Total	8	55.13	7.57	2.68	48.80	61.45
HOME	8	50.29	10.81	2.21	45.72	54.86
Orphanage	24	30.38	1.30	.46	29.29	31.46
Adopted	8	43.00	3.38	1.20	40.17	45.83
Biological	8	44.25	9.36	3.31	36.42	52.08
Total	24	39.21	8.46	1.73	35.63	42.78

The table above indicates the means and standard deviations for the different groups and their scores on the HEPA and HOME inventory. As illustrated in the table, the orphanage group scored the lowest points on both the scales.

Source: Field Data, 2019

Table 4c: ANOVA statistics for HEPA and HOME inventory by group

	ANOVA			
Hepa	Between Groups	2	44.007	.001
Home	Within Groups	21	14.031	.001
	Total	23		
	Between Groups	2 21		
	Within Groups	23		
	Total			

Source: Field Data, 2019

The main effect of the groups was significant ($F(2, 21) = 44.007$, $p < 0.001$) for the HEPA scores. The HOME scores presented a statistically significant effect ($F(2, 21) = 14.031$, $p < 0.001$). Since the ANOVA does not tell which group performed better than the other, further post hoc tests were performed to determine how the groups differed in the performance on both the HEPA and the HOME, the post hoc results showed that there was a significant difference between the orphanage and the adopted children's scores with 95% confidence interval of -28.2122 to -15.2878 and $p < 0.001$. Similarly, a significant difference was found on the scores orphanage and biological children giving a strong negative to negative 95% confidence interval of -24.5872 to -11.6628, $p < 0.001$. The difference between the adopted and biological children's scores was not statistically significant. The 95% confidence interval of -10.0872 to 2.8372 gives high probability of the difference being zero. This is also echoed by the non - significant value of p 0.478.

For the HOME measures there was a significant difference between the orphanage group and the adopted group with $p < 0.001$ and 95% confidence interval of -20.1632 to -5.0868, similarly a significant difference was found between the orphanage group and the biological group $p < 0.001$. Between the adoptive and biological families, there was no significant difference found $p > 0.05$ at $p = 1.00$ and 95% confidence interval of 8.7882 to 6.2882.

4.5 COGNITIVE DEVELOPMENTAL DIFFERENCES USING THE COGNITIVE DEVELOPMENT TEST.

Categories and Patterns are subtests from the SON-R cognitive development test. Patterns are based on performance while the categories are based on reasoning. After computing the Pearson correlation coefficient, a significant positive correlation was found between the Categories and Patterns scores (r .935, N=24, $p < 0.01$, 2-tailed).

Table 5: Descriptive of son-r performance by gender

						95% confidence interval For mean	
Variable	Gender	N	Mean	Std. deviation	Std. error	Upper bound	Lower bound
Son-r	Male	12	15.75	8.12	2.54	10.15	21.35
	Female	12	16.42	7.76	2.24	1 1.48	21.35
	Total	24	16.08	8.13	1.66	12.65	19.52

Table 5 shows the means and standard deviations for the male and female participants on the son-r test have been presented. When Anova statistic for differences was performed, male and female participants did not present significant differences in

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performance of the son-r test, (F (l, 22) = 0.039, p>.05, p= 0.846).

Source: Field Data, 2019

Table 5a: Correlations of Son-r and Age

Variables	Correlations	Age	Son-r
Age	Pearson Correlation		
Son-r	Sig. (2-tailed)	24 .205	
	Pearson Correlation	.336	1
	Sig. (2-tailed)	24	24

*. Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed)

Source: Field Data, 2019

As illustrated in table 5a above, correlations between central variables of this section have been presented. As can be seen, there was an insignificant correlation between age and performance on the son-r test, r= .21, p < .01

Table 5b: Descriptive of son-r performance by attachment

					95% confidence interval For mean	
Variable Attachment	N	Mean	Std. deviation	Std. error	Upper bound	Lower bound
Son-r						
Secure	15	20.47	4.19	1.08	18.15	22.79
Insecureambivalent	3	17.00	7.94	4.58	-2.72	36.72
Insecureavoidant	3	7.67	1.63	.89	3.87	1 1.46
Disorganized	3	1.67	2.89	1.67	-5.50	8.84
Total	24	16.08	8.13	1.66	12.65	19.52

Table 5b presents the participant's attachment status in relation to their performance on the son-r test. Results indicate that the children who were securely attached to their caregivers scored the highest on the test. The children who had a breakdown in their attachment strategy or those with disorganized attachment scored the lowest.

Results from Anova tests indicated that there was a significant difference on the test on the basis of security of attachment (F (3, 2()) = 19.111, $p>$ 0.001).

Source: Field Data, 2019

Table 5c: Multiple Comparisons for son-r performance by attachment

					95% confidence interval	
Attachment Style	Atachment Style	Mean difference	Std. error		Lower bound	Upper bound
Secure	insecure-	3.67	2.80	1.00	-4.74	11.67
InsecureAmbivalent	ambivalent	12.80	2.80	.001	4.59	21.01
InsecureAvoidant	Insecure-avoidant	18.80	2.80	.ooo	10.59	27.00
	Disorganized	9.33	3.62	.108	-1.26	19.93
	insecure-avoidant	15.33	3.62	.002	4.74	25.93
	Disorganized disorganized	6.00	3.62	.678	-4.60	16.60

The multiple comparisons from table 5c shows that the secure and insecure ambivalent did not differ in the performance of the test, p=1.000 but differences were detected between the secure and insecure avoidant, p= 0.001 and disorganized, p> 0.001 Between insecure ambivalent and insecure avoidant significant differences were found, p= 0.108. Differences are also seen between

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the insecure ambivalent and disorganized, P— 0.002 while insecure avoidant and disorganized did not differ, p= 0.678.

Source: Field Data, 2019.

Table 5d: Descriptive of son-r performance by group

Variable	Group	N	Mean	Std. deviation	Std. error	95% confidence For mean Lower bound	interval Upper bound
Son-r	Orphanage	8	8.38	7.65	2.70	1 1.98	14.77
	Adopted	8	22.75	4.17	1.47	19.27	26.23
	Biological	8	17.13	4.61	1.63	13.27	20.98
	Total	24	16.08	8.13	1.67	12.65	19.52

Source: Field Data, 2019

In the table above, means, standard deviations, minimum and maximum score are presented. These descriptive indicate that only the orphanage group scored from zero and their highest score was lower than that of the family reared groups. The statistical analyses showed that there were significant differences across the groups, (F (2, 21) — 12.959, p < 0.001). However, multiple comparisons were performed to determine the groups that differed significantly.

Table 5e: Multiple Comparisons for son-r across groups

Group	Group	Mean difference	Std. error		95% confidence Lower bound	interval Upper bound
Orphanage	Adopted	14.38	2.85	.001	21.78	6.97
Adopted	Biological	8.75	2.85	.017	16.15	1.35
	Biological	5.63	2.85	. 184	-13.03	1.78

Source: Field Project 2019

The table above shows significant differences between the orphanage and adopted p= .001 orphanage/ biological p = .017. No significant differences were found between the adopted and biological groups. p = .184.

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4.6. LAST OBJECTIVE ON DIFFERENCE OF PHYSICAL GROWTH USING WEIGHT.

Table 6: Body mass index BMI distribution by group

Group	Underweight	Normal range	Overweight/Obese	Total
Orphanage	6	2		8
Adopted		7	1	8
Biological	1	4	3	8
Total	7	13	4	24

Source: Field Data, 2019

In table 6, the number of children in the all the groups and their classification of the Body mass index has been presented. Further, the underweight children were in the 2nd percentile while those of the orphanage group who were in the normal range were 11th and 12th percentile respectively. The adopted group had 17th, 19th, 25th ,28th, 40th,76t 81st, 82nd percentiles. The biological children had the following percentiles: 4th, 6th, 33rd, 64th, 73rd, 77th ,89th and 98th. The BMI calculations are based on the World Health Organization (WHO) norms for children.

Table 6a: Descriptive for BMI, head circumference by gender

95% confidence interval

For mean

Variable	Gender	N	Mean	Std. deviation	Std. error	Lower bound	Upper bound
BMI	male	12	14.80	1.96	.57	13.53	16.05
	Female	12	15.33	2.77	.63	13.95	16.72
	Total	24	15.07	2.04	.42	14.20	15.93
Head circumference	male	12	49.04	2.36	.68	47.54	50.54
	Female	12	48.13	3.96	1.14	45.61	50.64
	Total	24	48.58	3.22	.66	47.22	49.94

Source: Field Data, 2019

The descriptive in table 6a above show the means and standard deviations of the body mass index and head circumference for male and females.

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Table 6b. ANOVA for differences on BMI and head circumference by gender

Variable	ANOVA			
BMI	Between Groups	1	.398	.535
Head circumference	Within Groups	22	.475	.498
	Total	23		
	Between Groups	1		
	Within Groups	22		
	Total	23		

Source: Field Data, 2019

Table 6b is showing that gender of the participant was not a factor for the variables; body mass index, (F (l, 22) — 398, p > 0.05, p = .535) and head circumference, (F (1, 22) =.443, p > 0.05, P = .513).

Table 6c: Correlations between Age, BMI and Head circumference

Variables	Correlations	Age	BMI	Head circumference
Age	Pearson Correlation	1		
BMI	Sig. (2-tailed)	24	-	
Head circumference	Pearson Correlation	.294		
	Sig. (2-tailed)	.164		
	Pearson Correlation	24		
	Sig. (2-tailed)	-.126	1	
		.556	.518	1
		24	.010	24

Source: Field Data 2019

As illustrated in the table above, the correlations show that there were no significant association between the child's age and the body mass index and the head circumference, r= -.29 and r= -.13 respectively. However, there was a significant correlation between the child's body mass index and the head circumference, .52, p=.01.

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Table 6d: Descriptive on BMI by attachment

Variable Attachment	N	Mean	Std. deviation	Std. error	95% confidence interval For mean Lower bound	Upper bound
Son-r						
Secure						
Insecureambivalent	15	15.73	2.00		14.65	16.86
Insecureavoidant	3	15.03	.72	.52	1 3.24	16.83
Disorganized	3	12.73	2.10	1.21	7.51	17.96
Total	3	14.00	1.32	.76	10.71	17.29
	24	15.07	2.04	.42	14.20	15.93

Source: Field Data, 2019.

Table 6d above shows the body mass index for all the children on the basis of the attachment quality. The means and standard deviations have also been presented for each class of the attachment style. After performing an ANOVA test for differences, no significant differences were detected for the children's BMI on their security of attachment, (F (3, 20) = 2.579, p>.05, 0.082).

Table 6e: Descriptive for BMI, head circumference by group

Variable	Group	N	Mean	Std. deviation	Std. error	95% confidence interval For mean Lower bound	Upper bound
BMI							
Orphanage		8	13.21	1.49	.52	11.97	14.45
Adopted		8	15.61	1.23	.43	14.58	16.64
Biological		8	16.38	I .94	.69	14.75	18.00
Total	2	4	15.07	2.04	.14	14.20	15.93
Head circumference							
Orphanage		8	46.75	3.85	1.36	43.54	49.
Adopted		8	48.50	1.77	.63	47.02	49.98
Biological		8	50.50	2.84	1.00	48.12	52.88
Total		24	48.58	3.22	.66	47.22	49.94

Source: Field Data 2019

In table 6e, the means, standard deviations and 95% confidence intervals are presented for the children in each group. The measures in the body mass index from the table indicate that the orphanage had the lowest

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scores for the body mass index. However, for the head circumference, the orphanage group shows that they had the lowest scores at minimum but had the equivalent at maximum with the adopted group.

Table 6f. Anova statistics for BMI and Head circumference by group

Variable	ANOVA			
BMI	Between Groups	2	8.704	.002
Head circumference	Within Groups	21	3.250	.059
	Total	23		
	Between Groups	2		
	Within Groups	21		
	Total	23		

Source: Field research data 2019

As depicted from the table above, only the Body mass index (F (2, 21) = 8.704, p > 0.05, p = .002) had significant differences when the groups mean were compared. The head circumference had a slightly significant difference (F (2, 21) .3.250, p = 0.059). To find out which groups differed, a post hoc test was performed for these variables.

Table 6g: Multiple Comparisons for BMI and head circumference across groups

Variable	Group	Group	Mean difference	Std. error	95% p	confidence interval Lower bound	Upper bound
		Adopted	2.40		.019	4.46	.34
BMI	Orphanage	Biological	3.16	.79	.002	5.22	1.10
Adopted		Biological	.76	.79 .79	1.000	1.30	2.82
Head circumference		Adopted	1.75	1.47	.743	5.58	-2.08
Orphanage		Biological	3.75	1.47	.056	.58	-.08
Adopted		Biological	2.00	1.47	.566	1.83	-5.83

Source: Field research data 2019

The table shows significant differences between the orphanage and adopted for BMI p = .019; orphanage/biological p = .002 for BMI but no significant differences were found between the adopted and biological groups for BMI, p = .566.

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5.0 DISCUSSION OF FINDINGS

5.1 INTRODUCTION

The following are the responses to the four (4) specific objectives:

4.1.1 DEVELOPMENT DIFFERENCES ON CAREGIVER-CHILD ATTACHMENT.

In this data, a relatively high incidence of secure attachment (62.5%) was found for the sample (n— 24). This is almost in line with the normative distribution in the Meta study by Van IJzendoorn and Kroonenberg (1988; n= 1990; 65% secure). In this study, 25% of the children were insecurely attached while 12.5% showed disorganization in the attachment strategy to their caregivers. This percentage was slightly lower than the normative rate (15%) found in a meta-analysis on disorganized attachment (n = 2104; Van IJzendoorn et al., 1999). Although the percentage is lower than the normative rate, it is large for this small sample size, n= 8 for the orphanage group. The results show that there were more children who are insecurely attached to their caregivers in the orphanage at 25% (n— 8) while only 8% was securely attached and another 12.5 0 0 showed a disorganized strategy of attachment. From the results, it is evident that the group in which the child belonged was a factor for yielding significant differences. Compared to the family reared groups, the orphanage group was found to be significantly different on attachment classifications. Chi-squared tests did reveal significant relations between background variable (group) and security of attachment. There was a strong association between the group the child was in and security of attachment. Further chi-squared symmetric measures showed that the magnitude of the explained variance due to the group was 70% which is on high side. The orphanage group was the only group that showed disorganized or breakdown in the attachment strategy probably because the children do not receive similar nurturing conditions that foster security of attachment. The fact that these orphanage children differed significantly from the adopted group shows that it is not only maternal deprivation that influences atypical attachment styles but also the environmental experiences.

The capacity of orphanage children to attach to caregivers has been a key concern and has been widely studied among child welfare experts. Attachment as defined as the enduring emotional bond that exists between a child and a primary caregiver, who could be a biological parent or an unrelated caregiver is of utmost importance in the social emotional development of children. The theoretical background of attachment assumes that most children are securely attached to their caregivers. They look to their caregivers for comfort when distressed and are able to explore their environment because of the security they feel in their relationships. This pattern of findings is evident in the present study, most of the children showed an organized secure attachment strategy and this suffices to say that the children get comfort from their caregivers. On the other hand, due to the uncertainty they feel in their relationships, insecurely attached children may not be adequately consoled by their caregivers or able to explore their environments and this can be supported by the insecurity displayed in this study. Most of the orphanage children were not securely attached probably because the caregivers were found to be inconsistent in their availability to the child, thus the children fail to form lasting and trusting relationships. The caregivers are not readily available to these children partly because of the many tasks and duties they have to take care of. Orphanage children are often exposed to inconsistent and inadequate parenting and, as a result, experience difficulty in forming healthy attachments. Some studies suggest that upwards of three quarters of these children have disordered attachments, but that the proportion may diminish

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with age (Harden & Kolinsky, 1999). The empirical work on attachment in orphanage children suggests that they are more likely than family reared children to have insecure and disorganized attachments due to inconsistent caregiving. The inconsistency in care seen in this study is similar to that reported by many studies in the literature.

This empirical work shows that orphanage children were more disorganized and insecurely attached. This could be because the children in the orphanage are managed as a group and caregivers rarely have time to interact and play with individual children. Therefore, it was difficult for the children to find comfort and a secure haven in these caregivers because they do not have a relationship that could foster secure attachment. On one hand, children from the family setup were more securely attached to their parents and caregivers perhaps because they see them as their protectors or safe haven as they explore the environment. The children from the family reared group have a stronger and lasting relationship with the parents/caregivers and know for sure that the parents are their safe haven in a strange environment. This could be attributed to the fact that when the family reared children call for help or when they are distressed, they get immediate attention. Caregivers or parents may not fail to be available because they do not have many things to do or many children to attend to compared to the orphanage caregivers. On the other hand, the orphanage children may not consider their caregivers as such possibly because these caregivers are not consistent in the way they care for them. They might even take out their home and family frustration on these children and in turn their formation of strong bonds distorted.

5.1.2 DEVELOPMENTAL DIFFERENCE ON CAREGIVER-CHILD ATTACHMENT USING EMOTIONAL AVAILABILITY AND SENSITIVITY.

The results reveal that there were differences in the overall score on the EAS across the groups. The orphanage caregivers were less sensitive compared to the caregivers and parents from the family reared groups. These two groups of family caregivers did not significantly differ from each other on emotional availability. This goes to show that the caregivers in the orphanage were less sensitive and responsive to the needs of the children. On all the subscales of emotional availability, the orphanage caregivers lagged behind. It may suffice to say that the orphanage caregivers did not display accurate perception of the children's signals which made their appropriate and prompt response to these signals inadequate. The caregivers who were less sensitive could not read the children's cues and were not responsive enough to react sufficiently to the children's cues. Parents who were highly sensitive on the other hand had an accurate perception of their children's likes and dislikes and ways of comforting them. For instance, there were children during the play episodes who told their parents and caregivers that they did not like that kind of games and the parent could let the child choose which game they enjoyed and opted to play. These parents and caregivers high in sensitivity also structured the play with the child in a more sensitive and responsive way. For some children, it was evident that they were playing the games because they were instructed to do so. This was an interesting aspect that was noted with the orphanage group. They do as the caregivers say and they seem obedient to please the caregiver. It could be noted in the way they were reacting, without enthusiasm or interest in what they were doing. During the play episodes the children were given chances to suggest the kind of play or games they wanted but these children could not say anything

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perhaps because they do not get regular opportunities of being given choices on what they want. Another explanation for the low incidence of sensitivity could be that these children are used to being in groups and playing in groups, they are actually used to playing amongst themselves. It might have been difficult for the caregivers to handle each child on their own because they do not have time or do not interact on individual basis at the orphanage. This could have been stressful for both the caregiver and the child. The researcher observed during the home visits and this was also acknowledged by caregivers in response to the HEPA interviews that children explore a number of games which they perform as children themselves with the caregivers only watching from a distance or performing others duties like washing, cleaning or cooking. It was hard for them to engage in an interactive play with the children because this was not a routine. Further, non -verbal cues such as facial expressions, body language, and vocalizations all combine to give information on what it is the children want at the moment. But since the children are cared for in groups, the caregivers do not take the time to note and to respond the child's individual non- verbal cues. Since most of the orphanage children do not open up as confirmed by the caregivers, they ought to find other ways to detect the needs of such children. In the study, it was noted that because of the overwhelming work with the number of children they have to take care of they do not pay attention to the non -verbal signals and this in turn distorts sensitivity and a caregiver's responsiveness to the emotional needs of the children.

It was observed that the two groups of family reared children did not differ significantly from one another on any of the variables in the parent-child interaction. This could be because of the family setting and the children interact with the parents at a personal level. In Africa, and in particular Zambia, parents generally do not play with children when they are at this age because the responsibility shifts to the siblings within the family.

It is important to understand as caregivers that beyond basic physical skills needed to care for children, such as feeding and changing clothes, parents/caregivers need to be emotionally attuned when relating to children. Parents and caregivers with limited resources (like orphanage caregivers) should know that as long as they provide the emotional nourishment that the children need, these children will flourish. The essence of quality caregiving lies in the emotional bond that is forged between parents/caregiver and their child. Parent or caregiver bonding involves their feelings of tenderness towards the children and a deep investment in their well-being. Research has shown that early parent bonding facilitates children's development of secure attachment. Caregivers need several special skills to help children develop and foster a secure attachment relationship. Caregivers should be attentive and tender to these children. In addition, they should try to understand and cope with the children's difficult behavior. Planning children's play not only encourages their language development for example but also knowing for sure that they have someone to protect them in the environment, a parental figure who they can rely on when they are distressed and run to as a safe haven. Caregivers should learn a wide variety of teaching techniques to enhance children's development.

5.1.3 DEVELOPMENT DIFFERENCES BASED ON DIFFERENT ENVIRONMENTAL SETTINGS OF THE CHILD'S HOME ENVIRONMENT

Children in orphanage care face a challenging journey through childhood. In addition to the troubling family circumstances that bring them into orphanage care, they face additional difficulties within the orphanage system that may further compromise their healthy development. This study

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examined the importance of safety and stability of the environment for healthy child development and the risks associated with the orphanage care experience. The results presented in chapter four indicate that in a home, family stability which is viewed as a process of caregiving practices can greatly facilitate healthy child development. Due to the instability of the orphanage environment compared to the family groups' environments, this study revealed that the orphanage children face multiple challenges to their healthy development, such as attachment disorders, compromised cognitive functioning and inadequate social skills. Based on these findings, it suffices to say that if these orphanage children were provided with stable, nurturing and an environment that is stimulating, their resilience to the orphanage care experiences may ameliorate the negative effects on their developmental outcomes. As it has been noted in the study, under such experiences, some of the children exhibited resilience and therefore, it is possible that if these children are nurtured in a way that supports the child's needs as a whole, these children would have better developmental outcomes.

Protecting and nurturing the young is a universal goal across human cultures. An abundance of research from multiple fields confirms the importance of the family unit as the provider of safe, stable, and nurturing environments for children. In their report,

Harden & Koblinsky (1999) noted that children who are reared in safe and stable environments have better short- and long-term adjustment than children who are exposed to harmful experiences. The present study confirms this pattern of findings. The HEPA measure used in this study is an instrument for operationalizing broad theoretical concepts such as safely, stability and nurturance. The orphanage group scored lower on most of the subscales. This goes to show that the orphanage environment was not as safe, stable, nurturing as the family reared groups. Safety, stability and nurturance are important and although it could be acknowledged by most people that every child certainly needs these in their environment, it may not be easy for an orphanage to provide because of the nature of the environment as well as the orphanage's custodial goal. Although the orphanage may want to stretch beyond the goal of the basic custodial needs. While it is realized that the orphanage administrators and caregivers want only the best for the children in their care, they have rarely been offered the opportunity to participate in a comprehensive training program that would not only enhance their knowledge and skills for giving children an all-encompassing foundation but also learn how they can re-structure the orphanage environments and re-organize their time to provide for the emotional and developmental needs of abandoned and orphaned children. The data collected qualitatively from caregivers show a concern that they do not go through comprehensive training programs. Instead, there are workshops that would take a day or two or sometimes a week. Although these workshops were mentioned, it is rare that the caregivers are sent to attend. It is the administrators who attend and may not disseminate the information down to the intended personnel in an intended manner. Aside from this, the other major hindrance for providing such nurturing environment is the limited funding that the orphanage receives. Most of the orphanages only have enough funds to meet the basic needs of food and nutrition and these children are rarely taken out of the orphanage to experience life outside this box. This way, it may not be easy for these caregivers and administrators to provide a safe, stable and nurturing environment for these children.

To answer the research question on the significance differences, there were no significant differences between the adopted and biological children. This means that the family reared children have a less risky home environment compared to the

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orphanage group. From the findings, it was noted that for the orphanage group any strengths for which they received credit were offset by risks for which they received negative scores. Further, these results indicate that the orphanage group experience more privation especially in physical support, emotional support, individualizing and intellectual capacitation. This could probably be because of the large groups in which children grow up. These children rarely have individual attention and the materials for intellectual motivation for these children are not there. This shows that in a child's environment family safety, stability and nurturance is crucial in the development of children. This means that adopted child's environment is as good as a child with biological parents. These results could have been influenced by the fact that these children were in their extended families' home environments and hence were treated by the caregivers like their own children. From these findings, we may conclude that children should be placed in extended families rather than in orphanages for better developmental outcomes.

Subscales that showed statistical differences in the HEPA were emotional support, framing, individualizing and intellectual capacitation. For all these subscales, the orphanage group was statistically different from both the family reared children while non-significant differences were found between the two-family reared groups of children. The reason why the two-family reared groups performed better could be that the caregivers are not overwhelmed with a lot of work as is the case in the orphanage. Also, decisions are made at a family level: this would benefit the children because each child is given individual attention. In the orphanage, the administrative officers who do not get more involved with the children at personal level would be the ones to make decisions for the children. These decisions might not focus on the individual children but on the group and this may sometimes be done without consultation with the caregivers who might have the best know-how about the needs of the children. Taking care of a lot of children in the same age group may be tedious to the caregiver: hence each child does not get the deserved amount of time to be with the caregiver.

Certain subscales on HEPA measure did not yield statistical differences across the groups and these are training in social responsibility and demonstration and explanation of ideas. This was perhaps because of the norms of the people. Generally, children do not show indiscipline for example, in front of visitors because this is the way they are taught and are brought up. For example, the children might not even express that they are not pleased with something until the visitors are gone. Also, spanking a child is not viewed as something that is unacceptable but it is seen as discipline to most parents and is culturally accepted. On the demonstration and explanation of ideas, the group of caregivers included in the study had similar qualifications although the orphanage caregivers were low on qualifications; they normally demonstrate and explain ideas in similar ways. Another explanation would be that the questions on the subscale could be answered using common sense and for social desirability. For example, any person caring for a child, whether they have relations or not would want to bring up that child in the most acceptable way. Lastly, the subscale may not have differed across the groups perhaps because this particular measure was not effectively informative to grasp the intent of what was supposed to be measured because the questions that were asked were the behaviours that are expected in this society. Because these are socially acceptable behaviours, it is rare that one can answer or report to the contrary. For instance, on the subscale of training in social responsibility, most children are taught not to be undisciplined, antisocial or aggressive if visitors come in the

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home. They are told to be polite to any kind of visitor whether a relative or just someone in the neighbor-hood. Moreover, any visitors that come in a home are introduced as "Aunt or uncle". This is done to facilitate the desirable behavior that is expected of the child in front of the visitor. On the other hand, this could be because of the closeness the people in this society feel with one another.

Another question asked in the scale was whether parents are overprotective. It was difficult to tell because there is usually more than one child in the families and overprotecting just one child was not grasped by the measure. Also, it may be difficult for a parent to overprotect because children mostly like playing and would rather be in the company of their siblings than the mother. There are cases that are exceptional though. When a has child special needs such as disability or sickness, the parent would protect this child from being hurt; this is not to be considered as overprotecting but rather giving special attention to children with special needs. Similarly, children are given time to play with their peers, if limited time is given for play, it may be seen as punishment for doing something unacceptable. For example, a parent would say, "you are staying in the house without going anywhere this morning." Further, it may suffice to say that the way the questions were asked and the observations to look out for depict the typical way of life of the people in this society.

Similarly, most of the HOME inventory subscales presented a statistically significant effect across the groups. It was found that the orphanage group had less stimulation on the learning materials, language, responsibility, academic stimulation and variety. A desirable quality and quantity of support in the orphanage is not achieved. These children are only given the basic care needed for survival. The other ingredients to better development are not achieved possibly because of the number of children per caregiver or the unavailability of resources for further stimulation on for instance learning materials. Materials are also difficult to share since the children are many and none of them has personal belongings apart from clothes. For the same reasons as above, the HOME inventory subscales on learning materials, language stimulation, responsivity, academic and variety showed significant differences only between the orphanage and the other two groups, while no significant differences were found between the two groups of family reared children.

In the study, it was surprising to find that the child's physical support of the HEPA measure showed significant differences across the groups while the physical environment of the HOME inventory measure showed no significant differences. The explanation for this difference would be that; the items on the HEPA subscale were detailed in finding out the kind of environment the child was living in. For instance, the HEPA subscale did not only look at the general physical surrounding of the child which was the focus for the HOME inventory subscale, but the HEPA also focused child's physical wellbeing. An example on this subscale was finding out whether the child was clean at time of visit; child's clothes were clean, torn or tattered at the time of visit. In sum, the HEPA's physical support items included the way the child's physical wellbeing was at the time of visit and subsequently. This showed how, on a general note, children are kept at these settings. It was found that the orphanage children's state of physical support was not at par with their counterparts. They scored low on the physical support measure, this would be because the children in the orphanage are many compared to the family setting where at times you expect siblings in the family to take care of the younger one's cleanliness, washing clothes and bathing them. Parents would only come in to help in case the older siblings are committed elsewhere. Another reason would be that most of these family settings have extra human resources such as aunties, cousins who help in taking care of the

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washing of clothes and general cleanliness of the child's physical environment.

Another reason why the physical environment subscale on the HOME inventory measure produced no significant difference would be because the items on this subscale did not express in-depth details on the child's physical environment. For instance, on the HOME's physical environment subscale, the concentration was more on the general physical surrounding such as the child's space, the infrastructure, the interior of the buildings. What was observed about this was that the family reared children's homes were not much different from that of the orphanage children especially with regards to the physical state of the buildings since they were all from medium density areas with almost the same infrastructure and buildings. For instance, for the statement where the observer noted the caregiving home to have 100 square feet space, most of the observations were that the caregiving home did not have such space. Modelling and Acceptance did not show significant differences. Perhaps this was because of the Zambian culture and norms where most parents would spoil their children in getting what they want. For acceptance, most parents and caregivers have the passion for the children and that could be a possible reason for not getting significant statistical differences on the subscales. Just like the training in social responsibility of the HEPA, modelling and acceptance subscales were not informative to effectively measure modelling and acceptance. This is the way of life and parents would want to structure the children's time in a more desirable way. Also, any parent or caregiver with a child would want the whole world to know how they adore the child and would not instill any harm to the child. Thus, all the parents and caregivers reported that they accepted the children. Other studies have demonstrated that children exposed to violent, dangerous, and/or highly unstable environments are more likely to experience developmental difficulties. Children exposed to violence within their homes experience the most deleterious outcomes. For example, children exposed to physical maltreatment often experience impairments in their physical health, cognitive development, academic achievement, interpersonal relationships, and mental health. Erratic, insecure home environments and a lack of continuity and constancy in caregiving are also associated with poor developmental outcomes (Harden, 1998). Children in orphanage care are particularly vulnerable to detrimental outcomes, as they often come into state or organizational care due to their exposure to maltreatment, family instability, parents' death and a number of other risk factors that compromise their healthy development. Foster children may be witnesses to and victims of family violence, or may not have been supervised or provided for in an appropriate manner. They may have been subjected to the inadequate and impaired caregiving that results from a variety of parental difficulties, such as substance abuse, mental illness, and developmental disabilities. In this study, the groups were not compared on parental characteristics because the orphanage authority did not have information about the children's parents since most of them were abandoned. However, it is likely that these children may be predominantly from impoverished backgrounds, a situation that exacerbates the risk factors they experience.

The literature cited above argues compellingly for continuity, constancy, and nurturance in the caregiving environments of children in orphanage care. Children reared in high quality caregiving ecology are set on a positive developmental path that has the potential to produce long-term positive outcomes (Harden, 1998). Already vulnerable from the experiences of maltreatment and other environmental risk factors (for example, poverty and its associated stressors), the development of orphanage children is further compromised if they

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experience more trauma and instability while in care. Thus, substitute families best meet their needs if they are able to nurture and commit to these children over the long term. This is evident in the current study's findings where the adopted children performed at par with the biological children.

This study demonstrates that the orphanage children lagged behind the family reared groups giving recognition that children in orphanage care often have difficulties that could promote the provision of more stimulating home environments. Some studies have examined the quality of the home environments of adoptive families, particularly their provision of stimulation and emotional responsiveness. One study found considerable variability in the quality of the home environments; higher-quality environments were found with families who had increased economic resources. Another study also found variability in the home environments that foster children experience and reported that unrelated foster parents had higher-quality home environments than kinship foster parents (Harden, 1998). In this same vein, foster children need caregivers who can work with child welfare agencies to ensure that children's individual needs are met.

In conclusion, children in orphanage care traverse a challenging journey through childhood, with many obstacles to their optimal development. Many have experienced compromised prenatal environments, maltreatment prior to orphanage care, or multiple moves while in orphanage care. The impact of these experiences on their development can be devastating over the short and long term. However, as with other children at environmental risk, a stable, nurturing family environment can protect orphanage children against the negative effects of these environmental experiences.

5.1.4. DEVELOPMENTAL DIFFERENCES OF GROUPS ON COGNITIVE DEVELOPMENT

The study used two subtests from the SON-R test and these were the Categories and the Patterns. The categories were based on reasoning and required children to categorise the items while the patterns were based on performance and required the children to follow the patterns in the booklet by drawing what was in the booklet. Both subtests presented a series of items arranged in order of increasing difficulty. There was a significant difference among the groups for both the categories and the patterns subtests. These results show that children raised in an orphanage did not perform at the same level as the comparison counterparts. The Bonferroni multiple comparisons showed significant differences between the orphanage and biological children for both subtests. The findings showed no significant differences between the adopted and biological group echoing many studies showing that it is more advantageous for children to be placed in family rearing setting even extended families or kinship if close biological relations are lacking. From the perspective of intellectual development, growing up in a family certainly should be preferred above living in an orphanage, which according to the Convention on the Rights of the Child (CRC 1989) should indeed be the last option for a child in need of care and protection. The orphanage children lagged behind possibly because they do everything in groups and are rarely awarded individual attention.

They do not have individual attention from their caregivers like their counterparts who are in the family settings. In other words, managing children as a group may prove difficult in achieving the child's intellectual needs. Although this may be the case, in a meta-analysis Van IJzendoorn & Juffer (2008) found that the caregiver child ratio ranging from 1:1 to l: 20 did not make the child to have smaller or larger delay. Most people would expect

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that a caregiver with few children to take care of would have children who would perform better than those cared for in a large group. This Meta study revealed that it did not matter whether caregiver had more or less children assigned to her care. It was also noted in the Meta study that children with the most favorable caregiver- child ratio (maximally three children per caregiver) did not significantly lag behind their peers reared in families. This means that in orphanage care children with favorite caregivers may not lag behind substantially with regards to intellectual development.

It should be noted that from both the HEPA and HOME inventory in this study, the orphanage children could have lagged behind possibly because they do not have a supportive system with materials that can enhance intellectual capacitation compared to their counterparts. For instance, they do not have toys and materials that can foster their reasoning and performance. Caregivers do not have the time to try and interact in ways that would support their intellectual development. Their peers from the family reared groups have older siblings who play with them and teach them how to find logic in the play materials. These older siblings also go to school and when they are at home doing their homework, the younger ones would try and imitate the writing. When the researcher tried to find out why some of the children performed well on the pattern test, they reported and attributed this to fact that they have older siblings who go to school and when its study time at home they get their young ones and they are given crayons, pencils and paper to draw whatever they want.

The findings from the current study did not generate any significant differences if the child was male or female for both subtests. Similarly, age was not a factor for the way children performed on the subtests. In a meta- analysis, Van IJzendoorn & Juffer (2008) found that Gender did not appear to be a significant moderator, whether the studies included only males or only females did not yield different effect sizes. However, Vorria et al. (1998) found that girls suffered less intellectual delay from their stay and experiences in the orphanages. In the current study, no significant differences were found for gender.

5.1.5. DEVELOPMENTAL DIFFERENCES OF CHILDREN ON COGNITIVE DEVELOPMENT AND ATTACHMENT

In this study, findings established that security of attachment was related to the performance on the cognitive test. The securely attached children outperformed the insecurely attached children while the children that displayed disorganization in the attachment strategy got the lowest on the tests. Studies have shown that disorganized attachment in early childhood predicts emotional dysregulation; externalizing problems, lower cognitive functioning in middle childhood (Moss, Cyr, & Dubois-Comtois, 2004; Stams et al., 2002; Van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). Although the current study did not consider duration in the orphanage as a predictor outcome for cognitive development, other studies have shown that the duration in the orphanage affects the children's intellectual ability. Duration of institutional deprivation was the strongest predictor for cognitive outcome (Van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). High stress environments may influence brain development and attachment behaviors and may cause persistent cognitive delay (Rutter et al., 2004). Several studies have shown that children in orphanages are at a risk for developmental delays (Lin, Cermak, Coster, & Miller, 2005). These findings suggest that attachment and developmental progress in children are interdependent. In the same vein, a study on non-adopted children (Van Bakel & Riksen-Walraven, 2002) found comparable concurrent relations between attachment security and mental

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development assessed with the Bayley Scales. An important premise that is central to the aspects of individual functioning originates in the organization of early primary relationships (Sroufe et al., 2005). If the organization of early relationships fails or is compromised as is the case in orphanages, children's social and cognitive development may be negatively affected.

Disorganized attachment involves higher risks of behavior and cognitive problems. This study revealed that children who displayed disorganized attachment performed the least in the cognitive development test. The securely attached children significantly differed from the insecurely attached children as well as those who were disorganized. Although these differences were noted, there were children who were in the orphanage and performed better than that those in the family reared group. This finding may be seen as indicative of their resilience. The children who performed better in the orphanage were also securely attached to their caregivers. It may be confirmed that there is an association between security of attachment and cognitive development. Other studies have shown that often children are kept in their cribs for long hours are deprived of intellectual exploration (Van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). In this study, it was noted that children were not kept in their cribs but they are kept within the confines of the house and the play area which is less than a 100 square meters. The house is enclosed with a wall fence and a gate and is always locked. This is done so that the children may be protected from the dangers of the neighborhood and also the fear that the child may run away. Although this is done in the best interest of the child according to the caregivers, the children do not get to interact on their own to explore and exercise their full intellectual potential in the wider environment apart from the enclosed home. Probably, if these children are offered more opportunities for social interaction, play, and practicing a variety of skills could help in recognizing the children's full intellectual growth and potential.

5.1.6 DEVELOPMENTAL DIFFERENCES ON PHYSICAL GROWTH

One of the most immediately and noticeable deficits of institutionalized children is their profound growth delay. Given the challenge of meeting young children's needs on physical growth in even the best institutions, it is not surprising that children reared in institutions show growth declines around the world. Similar declines in growth have been noted for children reared in institutions in Russia, China, and Romania. It has been estimated that young children lose approximately 1 month of growth for every 2-3 months in institutional care (Johnson, unpublished). Furthermore, it is the growth of the long bones such as height that is suppressed while weight remains fairly proportional to the child's height (Johnson, unpublished). Previous research on post institutionalized children has consistently indicated that at the time of adoption, they are very small for their age, often below the fifth percentile for height and weight between the 3rd and 9th percentiles (Rutter et, al 1999).

In the current study, the growth indices considered were measurements taken at assessment time. The children in the orphanage did not have records for these measures at placement or before placement. The Results show that on growth model indices of physical development F values were significant at assessment. However, F values were only significant weight, weight to height ratio (body mass index- BMI). Many studies have reported finding significant differences for height and head circumference, for the current study did not follow this pattern of findings. Even though the children's head circumference was slightly significant but their height measures were not significant. Age and gender were not significant factors that would have

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yielded differences in these physical measures across the groups.

5.1.6.1 DEVELOPMENTAL DIFFERENCES OF CHILDREN ON PHYSICAL GROWTH AND ATTACHMENT

Findings from the present study showed significant differences in the body mass index of the children across the groups. Although a number of studies have shown that security of attachment is related to physical growth, this study did not follow this pattern of findings. The children did not significantly differ in their indices for physical growth on the basis of attachment. The emphasis could be placed on the adversity of the environment and not maternal deprivation because the lack of maternal figure could be buffered by the caregivers. For instance, a study conducted on physical growth in Zambia's Samfya district observed a relation between maternal height and height of the child (Hautvast, et al, 2000). This relation may be a result of genetic and environmental factors. In a previous study in the same district in Zambia findings showed that at 0—3 months of age, 11% of the children were stunted. The retarded linear growth in children in the described age range may be due in part to genetic influences. However, the increase in the prevalence of stunting (from 11% at 0—3 months of age to 55% at 6—12 months) that was observed during the first year of life was certainly the result of adverse environmental conditions. The prevailing view then, during the 1950s and 1960s, was that socioemotional deprivation could indeed be the cause of some cases of abnormally short stature, and that the most likely etiology was 'deprivation' or the lack of mothering in a broader sense (Elmer, 1960; Patton & Gardner, 1962; Coleman & Provence, 1957). This study however found that there was no relation between attachment style and physical growth. In other words, the securely attached children did not significantly differ in the e measures of physical growth across the groups. This finding was however unexpected.

6.0 CONCLUSION & RECOMMENDATIONS

6.1 CONCLUSIONS

Firstly, attachments classifications were successfully determined through the coding of the videotapes of the Ainsworth's strange situation procedure. The current data revealed that the family reared children showed a relatively normal rate of attachment security compared with the orphanage group who had a relatively high percentage of disorganized attachment in the sample. No child in the family reared groups displayed disorganization or breakdown in their attachment strategy.

Secondly, sensitivity was assessed using the Emotional Availability Scale. Results showed that caregivers in the orphanage displayed lower levels of sensitivity compared to the other parents and caregivers. Although the orphanage caregivers scored lowest as a group, on those children who were securely attached to them, they scored high on sensitivity. The study showed that security of attachment and emotional availability of caregivers to children was associated to a substantial degree. Thirdly, different environmental lifestyles using home potential assessment (HEPA) and HOME Inventory. These scales both measured the child's home environment. The orphanage group scored lower than the family reared groups showing that the orphanage is not as stimulating in various aspects of development as the other home environments. Additionally, significant differences on the cognitive test were found only with the orphanage group. There were variations in the performance in the orphanage and some children in the orphanage performed better or at par with their counter parts raising the issue of resilience that some children possess even when they are exposed to risky environments. In the orphanage, it was noted that the children who performed better on the

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cognitive test were also securely attached to their caregivers.

Fourthly, after assessing developmental differences on physical growth, significant differences were detected on the body mass index of the children. They showed marginal significant differences on the head circumference. Although studies show that security of attachment have better outcomes in physical growth, this study's finding that security of attachment was not found to relate to better outcome in physical growth was not expected.

Therefore, the results of the study showed that there was an organized distribution of secure and insecure attachment styles in the sample. Only the orphanage group showed disorganized attachment. Home environment scale showed significant differences between the orphanage group and both the family reared groups but no significant differences between the biological and adoptive family reared groups. On the cognitive tests, differences were found between the orphanage and the family reared children. The orphanage children lagged behind the family reared children in both subtests. For physical growth, the orphanage children lagged behind the family reared groups on the body mass index and head circumference. The analysis found no significant effects of age and gender. Therefore, based on these findings, it is recommended that orphaned children should be raised in a family setup rather than an orphanage: whenever possible such children should be placed with their extended family and placement in an orphanage should indeed be the last option. The standards and condition of orphanages should be improved to foster near normal developmental trajectory for these children.

Although a number of questions were answered in this study, some questions have given rise to new question which are worth noting.

The coders of the videotapes of the Strange Situation Procedure and Emotional Availability Scale did not receive required formal expert training to code the videotapes. For reliability and scientific standards, it is recommended that an expert coder reviews the videotapes and gives ratings based on the standardized coding of the videotapes.

The study did not include socio economic status as a variable of the participants which is a limitation. There's need to study orphanages in different socio-economic status to see whether the same pattern of findings can be obtained.

In the study, only few orphanages were used. It would be more revealing if a number of orphanages were used so that it may be more convincing to generalize the findings in Zambia.

The study also used an adopted group from the extended family; this may shield the findings because these results may not be generalized to those adopted to families without any relations. Follow-up studies should consider adoptive families that do not have any relations with the children.

The sample in the study was small; this study should be replicated in a larger sample. Further, research that compares orphanage and family raised children in a larger sample should be given more attention so that there is wide comparison among the groups of children with different patterns of care and that proper conclusions could be achieved.

A cross-sectional design was used with concurrent assessments of attachment and development. Therefore, definite causal inferences about the influence of attachment on developmental functioning cannot be drawn. In future studies, this relation should be examined in longitudinal studies. For further studies, it may be interesting and informative to also involve the orphanage caregiver's biological children in future studies and find out how they may be rated on the different aspects of development and see whether their

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outcome would be different from the children they care for in these institutions.

6.1 RECOMMENDATIONS

Stakeholders should;

1. Strengthen the efforts in providing positive support to orphanages especially making sure that the environment is stimulating enough to foster development of children.
2. Put in place comprehensive training programs that are ongoing to enhance capacity building for the caregivers. Caregivers need professional training so that in the end children are the ones to benefit from such programs.
3. Ensure that developmentally sensitive child welfare policies and practices are designed through child experts to promote the child's social emotional, physical, cognitive and other relevant developmental trajectories that would realize a healthy childhood for the children.

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