

**PSYCHOSOCIAL EFFECTS IN CHILDREN LIVING WITH  
HIV POSTIVE PARENTS: FOCUS ON KAMAGAK WEST  
LOCATION, RACHUONYO DISTRICT HOMABAY  
COUNTY.**

BY

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B.A PSYCHOLOGY (COUNSELING)

A DESSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENT FOR THE AWARD OF A MASTERS DEGREE IN PUBLIC  
HEALTH, UNIVERSITY OF NAIROBI.

2014

## STUDENT'S DECLARATION

This research study is my original work and has not been presented to any other examination body. No part of this research should be reproduced without my consent or that of University of Nairobi.

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## **DEDICATION**

I would like dedicate this work to my Son Felipe. Despite being a toddler, gave me the time to work on my dissertation. I would also like to dedicate this study to my parents Mr. and Mrs. Olela, who have supported me in every possible way.

## **ACKNOWLEDGEMENT**

The author wishes to thank Prof. Violet Kimani and Dr. Richard Ayah. For their supervision and guidance throughout my studies. I am indebted to Dr. Ogola, the Medical Superintendents of Rachuonyo District Level 4 Hospital for allowing me to conduct this study within a facility in his jurisdiction. I also owe the greatest vote of thank Community Health Workers of Kamagak location, particularly, Miss. Winnie, Mrs. Odhiambo for their assistance with technical aspects of the study. Last but not least I wish to thank my friends, Cousin Oliver, colleagues in my course and the whole Nairobi University Fraternity.

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## **ABBREVIATION**

<b>AIDS</b>	Acquired immunodeficiency syndrome
<b>ANOVA</b>	Analysis of Variance
<b>CABA</b>	Children affected by Aids
<b>CBOs</b>	Community based organization
<b>CDC</b>	Central Disease Control
<b>CMC</b>	Chronic Medical Conditions
<b>CMV</b>	Cytomegalovirus
<b>CSS</b>	Clinical Significant Symptoms
<b>FBOs</b>	Faith Based Organization
<b>HAART</b>	Highly active anti-retroviral therapy
<b>HIV</b>	Human Immune Deficiency Syndrome
<b>KDHS</b>	Kenya Demographic Health Survey
<b>NASCOP</b>	National Aids Control Council
<b>NGO</b>	Non-Governmental organization
<b>SDQ</b>	Strength and Difficulty questionnaire
<b>PLHA</b>	People Living with HIV/AIDS
<b>UN</b>	United Nations
<b>UNAIDS</b>	United Nations Program on HIV and AIDs
<b>UNICEF</b>	United Nations Children Fund
<b>USAID</b>	United States Agency for International Development
<b>WFP</b>	World Food program

## **DEFINATION OF OPERATIONAL TERMS**

<b>Child</b>	Every human being below the age of 18 years
<b>Effects</b>	Adverse outcomes of situations
<b>Psychosocial</b>	Relating to the mind and ability to associate with others
<b>Seroprevalence</b>	The presence of HIV antibodies in an individual serum of plasma
<b>Orphan hood</b>	Absence of one of two parents/guardian due to death
<b>Prevalence</b>	Number of cases of a disease at a given point in time (sampling date)

## ABSTRACT

The mental health of children living with HIV infected parents has not received much attention in Kenya. An important step in resolving this problem involves the need for accurate assessment of the health needs of a population. As such, studies directed at identifying the psychosocial needs of HIV affected children are clearly warranted. The objective of this study was therefore directed at evaluating the psychosocial effects of parental HIV on children in Kamagak West Location, Homa Bay County. To this end, children living with one or two HIV/AIDS infected parents aged 9-16 years were enrolled in the study. Respondents were identified via purposive sampling. Data on psychosocial effects was gathered using a Strengths and Difficulties Questionnaire (SDQ). Data was analysed using MS Excel. Prevalence's and the mean scores of the various effective factors were calculated and differences within groups analyzed using ANOVA. The strength of association between effective factors was analysed using Spearman rank correlation method and multinomial regression was used to evaluate the strength of associations between the various variables. According to the results obtained, 51% have emotional problems, 37% had conduct problems, 21% hypersensitivity problems and 24% peer problems. Total problem score was placed at 46%. Sex, was a determinant of the problems evaluated in the various subscales – only peer problems was not determined by sex. Other determinants of outcomes included age, parent's employment status and nature of relationship with caregiver. Incidences of emotional problems were higher in children living with a guardian. These findings suggest that psychosocial problems experienced by HIV/AIDS orphans begin well before orphan hood. These points to the fact that mental health needs of children should be addressed even before orphan hood. More importantly, the findings points to the fact that mental health needs of HIV affected children should be a critical component of the overall health care planning in the County.

## CHAPTER 1: INTRODUCTION

### 1.1 Background of the Study

Terminal illness in parents puts children at an increased risk of developing health-related and psychosocial problems (Sieh et al., 2012a). Evidence suggests that these children show internalizing problems (e.g., anxiety and depressed mood) and externalizing problems (e.g., aggressive and rule-breaking behavior) that may have long lasting psychological impacts (Sieh et al., 2012a; Sieh et al., 2012b). While chronic medical conditions (CMC) like cancer specifically in the western world) are known to have these impacts, in Africa, HIV/AIDS presents the biggest challenges in this regard – over 20 million people have HIV/AIDS in Africa. What makes the challenge more daunting is in the way that HIV/AIDS is socially constructed. Recognizing this phenomenon, Huber & Gillaspay (1997) have argued that unlike cancers and other terminal illnesses or CMCs; HIV/AIDS is complicated by a myriad non-biomedical factors including - economic, legal, political, psychological, religious, social, spiritual - that compound disease chronicity. That is, the politics and stigma associated with HIV/AIDS places the illness on a pedestal that is vastly different from that of other terminal illnesses. These non-biomedical complications dramatically impact not only on the patient, but also on those affected by the disease (for instance, children) (Huber & Gillaspay, 1997).

A present, research suggests that children affected by AIDS – children living HIV positive parents; suffer from the same externalizing and internalizing problems associated with CMC in parents (Melvin et al, 2007; Cluver & Gardner, 2005, Sieh et al. 2012b). For instance, several studies on the subject suggest that children living with HIV-infected parents suffer the risk of internalizing problems and maybe predisposed to conditions such as depression, anxiety, fear, anger, loneliness, social withdrawal, and hopelessness (Melvin et al, 2007; Cluver & Gardner, 2005; Cluver et al., 2000; Rotheram-Borus, Zhao, 2006; Yang et al., 2006; West et al., 2006; USAID 2004; Woodring et al., Keitel, 2005). These said psychosocial symptoms vary in type, distribution and, severity, but there is a broad consensus among various researchers that the adverse psychosocial symptoms arise at the onset of parental diagnosis (Cluver & Gardner, 2007).



Mechanism and dynamics of psychosocial pathology in children affected by parental HIV can either be direct or indirect. According to Wekesa (2000), knowledge that a parent is terminally ill may predispose a child to depression. Indeed, several studies have observed a consistent association between parental HIV and depression, emotional trauma, emotional distress (Li et al., 2008; UNAIDS 2007; Bachmann & Booysen, 2006). Given the high rates of malnutrition already prevalent in some part of rural Kenya (USAID 2004), it is obvious that a further decline will impact adversely on the child not only physically but psychosocially. For example, the quality of care provided to children may well fall. They may be given less time, less supervision and, as a result, less protection (Bachmann & Booysen, 2006). And if children are required to take on additional household tasks, they could experience negative impacts on their health and education (Kasirye & Hisali, 2010).

While the negative effects of parental HIV is well appreciated by several researchers, Li et al (2008) have argued that the problem is still under investigated. Adding to this problem is the fact that geographic locations of existing studies are disproportionately concentrated in urban towns in sub - Saharan Africa or in developed countries (Cluver & Gardner, 2007). Moreover, most studies have focused on the impacts associated with parental deaths, physical and social support (Kasirye & Hisali, 2010). In concurrence, Bachmann & Booysen (2006) have argued that the condition of children living with HIV infected parents has received little attention despite the growing number of children living with HIV infected parents and the emerging realization that these children bear resultant psychosocial risks. The need for studies in rural areas is therefore warranted. In this regard, the writer undertook a study on the effect of HIV positive parents on children in a rural setting in Kenya – Kamagak West Location in Rachuonyo County.

## **1.2 Statement of Research problem**

HIV/AIDS has been socially constructed according to moral categories in a way that few other terminal illness have ever been. Yeo (2000) has argued that as sexually transmitted disease, it has been regarded as a sign of immorality and even a punishment for moral transgression. In some communities, especially in Africa, people with HIV/AIDS have been stigmatized, scorned, and shunned as moral lepers (Yeo, 2000). The moralizing directed at the parents may also be directed at the children – guilt by association (Sun et

al., 2008; Rotheram-Borus et al. 2001) - a phenomenon which makes HIV/AIDS infection unique among the CMCs. This uniqueness may in turn magnify the psychosocial impacts associated with CMCs in general. In African Countries like Kenya, HIV/AIDS infection continues to be a medical burden. This is exemplified by the relatively high prevalence (7.4%) of HIV and the relatively high number of HIV orphans, more than 3 million, (NASCOP, 2010). While the Kenya government and a large number of international organizations have deployed a lot of resources to counter the economic impact of HIV in the country, the psychological impact are not well documented (Puffer, 2011). In this respect, a better understanding is needed, specifically of the determinants of the effect of parental HIV on children. Therefore, this study was designed to provide some insights on the said subject. It will contribute to the gap in literature by defining the following as yet under investigated, at least in respect to Kenya, concepts. One is to assess the range of psychosocial effects suffered by children living with HIV infected parents. The other question is whether the level of psychosocial impact on the child, resulting from an adult infection, is related to the age of the child or gender. Defining these parameters is significant in the following respect: It is envisaged that the study will help in understanding the psychosocial effects of parental HIV on children and the magnitude of this problem. This may help in identifying the social and psychological needs of these children.

### **1.3 Justification of the study**

Parental CMC can have tremendous effects on children (See Sieh et al., 2012a; Sieh et al. 2012b; Thastum et al., 2009; Visser et al., 2005; Kennedy et al., 2009). While these conclusions are true for terminal parental illness (e.g. cancers, etc.) in general; this study will focus on parental HIV/AIDS which, unlike other terminal illnesses/CMCs, is responsible for a disproportionate amount of morbidity and mortality in specific areas in Kenya (NASCOP, 2010). More importantly, few studies evaluating the determinants of the impact of parental HIV on children have been conducted in affected countries like Kenya (Rotheram-Borus et al, 2005). Building on this conclusion, several scholars have called for more context specific studies to evaluate the psychosocial impact of parental HIV on children. Therefore, this study will contribute to the theoretical literature by evaluating the

determinants of the psychosocial effects of parental HIV on children in a community with a relatively high prevalence of HIV (24 - 28%).

At the empirical level, the study will collect vital baseline data on the prevalence of specific indicators of psychological disorders in affected children. The information can be used in designing possible intervention measures by non-governmental organizations, faith-based organizations, local governments and national policy makers.

At a personal level, it can be asserted that highlighting the possible psychological impact of HIV/AIDS in children in Kamagak sub-location will also be a contribution to the solution of a problem that is not well recognized by community members or the relevant authorities.

#### **1.4 General Objectives**

To determine the psychosocial effects among children living with HIV positive parents in Kamagak west location, Rachuonyo County, Kenya.

#### **1.5 Specific objectives**

1. To determine the psychosocial effects in gender among children living with HIV positive parent or guardian.
2. To assess the relationship between age and psychosocial problems experienced by the child.
3. Determine other factors affecting psychosocial status of children living with HIV positive parent.

## CHAPTER 2: LITERATURE REVIEW

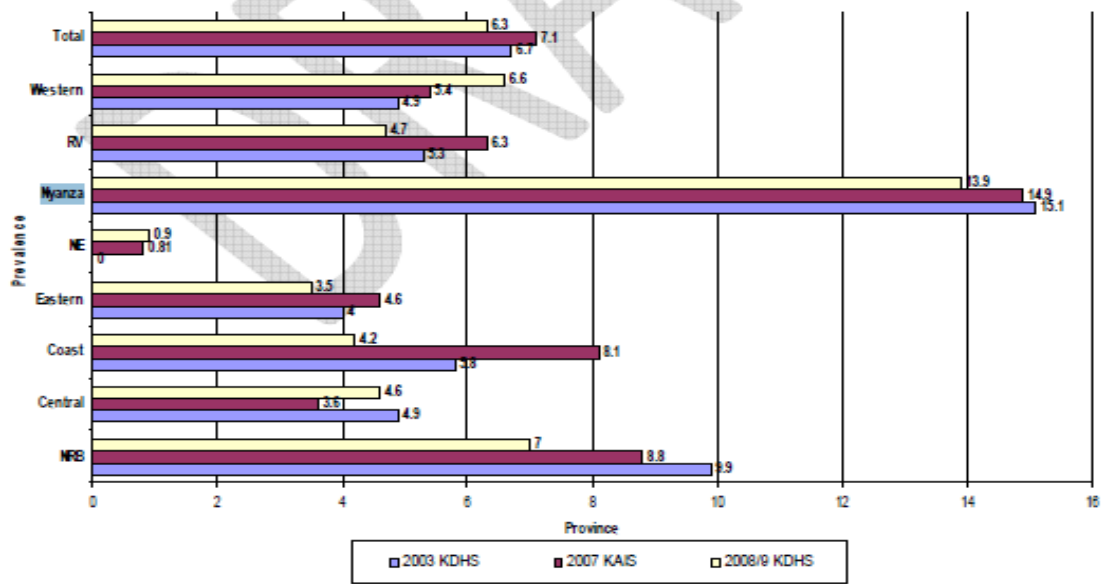
### 2 Introduction

In this section, epidemiology of HIV/AIDS in Kenya is reviewed – focus is on disease distribution at the national and local levels. This is followed by a review of the psychosocial effects of HIV/AIDS. Several impacts including psychosocial impacts, economic impacts are reviewed. In the next section, the argument is made that the impact on large numbers of children of the combined effects of poverty and HIV/AIDS – namely school dropout, child labour abuses and the sexual exploitation and trafficking of children - are likely to cause significant social disruption. Finally, it has to be pointed out that while the author recognizes that parental CMCs can have tremendous impact on children (See Sieh et al., 2012a; Sieh et al. 2012b; Thastum et al., 2009; Visser et al., 2005; Kennedy et al., 2009) and that most of the psychosocial impacts highlighted in this review can apply to the other CMCs, the review will only focus on HIV/AIDS.

#### 2.1 HIV Epidemiology in Kenya

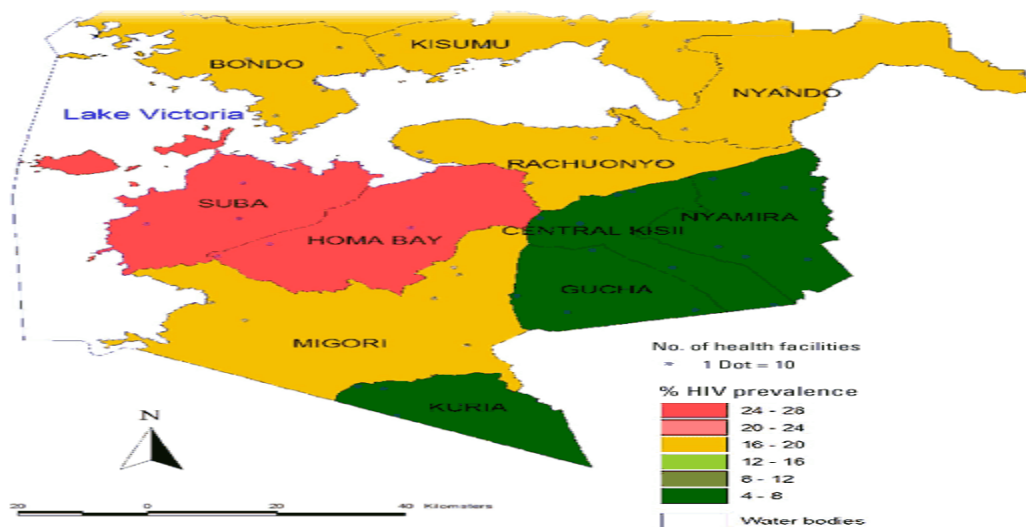
As of 2009, 1.42 million Kenyans were living with HIV/AIDS, translating to HIV prevalence of 7.1% (NASCO, 2010). Overall in Kenya, urban residents have a significantly higher risk of HIV infection (7.2%) than rural residents (6.0%). However, even in urban areas there are huge disparities in HIV prevalence with urban slum settlements having a significantly higher prevalence of HIV than non-slum urban areas. For example, a recent study conducted in two urban slum settlements in Nairobi showed that the overall HIV prevalence in these slum settlements is estimated at 12%, which is much higher than the national average (7.1%) and the overall prevalence in Nairobi (7.0%). At the same time, the regional disparities in prevalence are marked. See fig 1 below. Nyanza has by far the largest prevalence (13.9%) – nearly twice the national average. But even within Nyanza province, there are regional variations.

**Regional HIV Prevalence**



**Figure 2. 1** Kenya regional HIV prevalence Adopted from (NAS COP 2010)

Overall, it can be argued that the burden of HIV/AIDS in the Kenya health sector is considerable (NAS COP, 2010).



**Figure 2. 2:** HIV prevalence in Nyanza province Adopted from (NAS COP 2010)

## **2.2 The potential impact of HIV/AIDS on children**

Prior to 2007, relatively little research on the psychological effects of HIV-related orphanhood in Sub-Saharan Africa had been published. Since that time, a number of studies have reported on the psychosocial impacts to orphans in Ghana (Doku, 2009), Guinea (Delva et al., 2009), Namibia (Ruiz-Casares et al, 2009), Rwanda (Thurman et al, 2006), South Africa, Tanzania, Uganda, and Zimbabwe (Wood et al, 2006). The social, economic and physical impacts of HIV have been reviewed by several investigators (See Cluver & Gardner, 2007; Cluver, Gardner, & Operario, 2007; Rotheram-Borus, Zhao, 2006; Yang et al., 2006; West et al., 2006; USAID 2004; Woodring et al., Keitel, 2005). Studies are generally focused on the following areas:

### **2.1.1 Economic impact**

The links between poverty and health – specifically HIV/AIDS, is well publicized (see, for example, WHO, 2001; Sachs & McArthur, 2005). Immediately apparent is the economic impact associated with illness during illness, as well as after death - e.g. through funeral expenses. For example, Steinberg et al. (2009) in four provinces in South Africa (SA) found that households with an HIV/AIDS-related death in the past year spent an average of one-third of their annual income on funerals. And in several countries, income in orphan households has been found to be 20-30% lower than in non-orphaned households (Cluver, 2006; Foster & Williamson, 2000). A recent study in urban households in Côte d'Ivoire, established that in families where a parent has AIDS, average income can fall by as much as 60%, a lot of money is reallocated for health care expenditures – this leads to depletion of savings and possibly indebtedness (Sachs & McArthur, 2005).

Other studies which have looked at budgeting decisions in such families have established that in these families, the increasing costs of care associated with the disease may be met by reallocating money that would have been spent on other goods (Ritcher et al., 2004). In situations where household expenditure was low before the crisis of illness, the impact may well push consumption of basic items to dangerously low levels that can result in both short and long-term health and education impacts for children (Foster & Williamson, 2000; Richter et al., 2004).

In concurrence, Mutangadura (2000) has argued that a direct impact of tighter budgets may involve reduced consumption. In addition, Bachmann & Booysen (2006) have argued that households with depressed finances may favor allocating what food there is to ill household members. In Ritcher et al., (2004) opinion, parental HIV in poor neighborhoods where malnutrition is rampant only exacerbates the situation. Foster & Williamson (2000) have argued that the impact of HIV/AIDS on children and families is compounded by the fact that many families live in communities which are already disadvantaged by poverty, poor infrastructure and limited access to basic services. The problem is also compounded by the fact that traditional strategies for coping with orphans are overstretched.

### **2.1.2 Psychosocial impacts**

Children are affected by HIV/AIDS when their parents are chronically ill, when their parents suffer stigma or their households are impoverished by HIV/AIDS. Several surveys have established that many children affected by HIV/AIDs are not able to have normal childhood (Rotheram-Borus et al. 2005). Research has established that when a parent is infected, the impact of HIV radiates throughout the family (Bor et al. 1993; Pequegnat et al. 2001; Rotheram-Borus et al.2005; Schuster et al. 2000) and influences the next generation (Rotheram-Borus et al. 2001; Wekesa 2000), especially in a family-oriented society such as Kenya. According to Sun et al (2008), these children often have to deal with psychosocial stress, an ill caregiver, reduced parenting capacity, a shift in family structure, financial deprivation and stigma and discrimination. These challenges can lead to emotional and behaviour changes in the children, such as depression and delinquency.

Previous studies have documented that children from HIV-affected families have a heightened probability of experiencing externalizing and internalizing problems (Forehand et al., 1998), such as social adjustment and attention problems (Bauman et al., 2002) and depression (Forsyth et al., 1996). According to several researchers, distress is one of the commonest problems described by these children. In their surveys, they indicated that children affected by HIV/AIDS are in constant worry about their futures once their parents die and the fear that their parents will die alone while they are in school (Ainsworth & Filmer, 2006). Another problem that has been identified by this studies is parental HIV can interfere with parent-child attachment, which can have potentially long-term psychological

consequences (Nagler et al., 1995). Much of this effect is associated with the caregiver's physical and mental health.

Additional studies have suggested that children living with HIV infected parents are at a higher risk of developing psychological problems (Wild, 2002). Indeed, it has been suggested that the lack of positive emotional care associated with parental HIV is associated with a subsequent lack of empathy towards others and possible antisocial behaviors (Cluver, 2000). However, other researchers have suggested that some children are affected only to some degree. In their opinion, protective factors - in the form of compensating care from other people, including teachers, as well as personality predisposition - may lessen the impact on children of reduced care in the home environment (Bauman et al., 2002).

### **2.1.3 Changes in caregiver and family composition**

A critical determinant of psychological distress for AIDS-orphaned children is the quality of caregiving they receive following parental death (Cluver, 2013). The general psychological literature has shown that children responses to stressful and challenging life conditions can be shaped by the nature of care giving (Rutter, 1979). Wyman et al (1992) have argued that stable and secure parenting can protect children against adversities following exposure to extreme stress such as the death of a loved one. The converse also holds. Indeed, poor family functioning occasioned sickness of a parent in the family is not only stress inducing, it can also exacerbate children's reactions to stress (Pederson & Revenson, 2005).

Caregivers living with HIV must not only cope with their own physical health symptoms, complex medication regimens, stigma and fear of AIDS-related death; but must also care for their family (Rotheram-Borus et al., 1997). Consequently, depression is common among caregivers as they struggle with financial limitations while trying to provide for the family and support their children. Indeed, Lewis & Hammond (1996) have argued that increasing physical and mental changes can compromise parenting capabilities and increased parenting strain can lead in turn to depression (Semple et al., 1997). Together, these associations can cause a spiraling decrease of parenting skills and family relations.



These findings are corroborated by a study by Kotchick et al, 2006. In this study, HIV-infected mothers demonstrate worse relationship quality with their children and will most likely be unconcerned about their children untoward behaviour than non-HIV-infected mothers.

Others have argued that compromised parenting capacity may lead to problems such as lack of parental monitoring - e.g. parents not aware of what their children are doing (Peterson et al, 1994); poor family management - e.g. parents not giving their children any responsibility and parental permissiveness - e.g. not setting rules or expectations related to tobacco, drug or alcohol use (Cohen & Rice, 1997).

Overall, it can be asserted that a large number of studies have established that the compromised parenting abilities of HIV-infected caregivers, puts children from HIV/AIDS-affected families at risk for developmental challenges and emotional, behavioral and physical problems (Bray, 2003; Cluver & Gardner, 2007; Dowdney, 2000).

#### **2.1.4 New responsibilities and work for children**

Several studies have shown that responsibilities and work, both within and outside of the household, increase dramatically when parents or caregivers become ill or die (Dowdney, 2000). Reports of child labour in HIV/AIDS orphans in children as young as five years old has been observed (UNICEF, 2000). Highlighted responsibilities include domestic chores, subsistence agriculture and provision of care giving to very young, old and sick members of the household (Ritcher, 2005). Outside the home, work may involve a variety of formal and informal labour, including farm work and begging for food and supplies in both the community and beyond (Ritcher, 2005).

#### **2.1.5 Impact on Education**

In households affected by HIV/AIDS, the school attendance of children drops off because their labour is required for subsistence activities and, in the face of reduced income and increased expenditure, the money earmarked for school expenses is used for basic necessities, medication and health services. Even where children are not withdrawn from

school, education often begins to compete with the many other duties that affected children have to assume. In addition, stigmatization may prompt affected children to stay away from school, rather than endure exclusion or ridicule by teachers and peers. A study in Zambia, for example, showed that 75% of non-orphaned children in urban areas were enrolled in school compared to 68% of orphaned children (Ritcher, 2005). At a national level, a World Bank study in Tanzania suggested that HIV/AIDS may reduce the number of primary school children by as much as 22% and secondary school children by 14% as a result of increased child mortality, and decreased attendance and dropping out (Cluver, 2013).

#### **2.1.6 Health and nutrition**

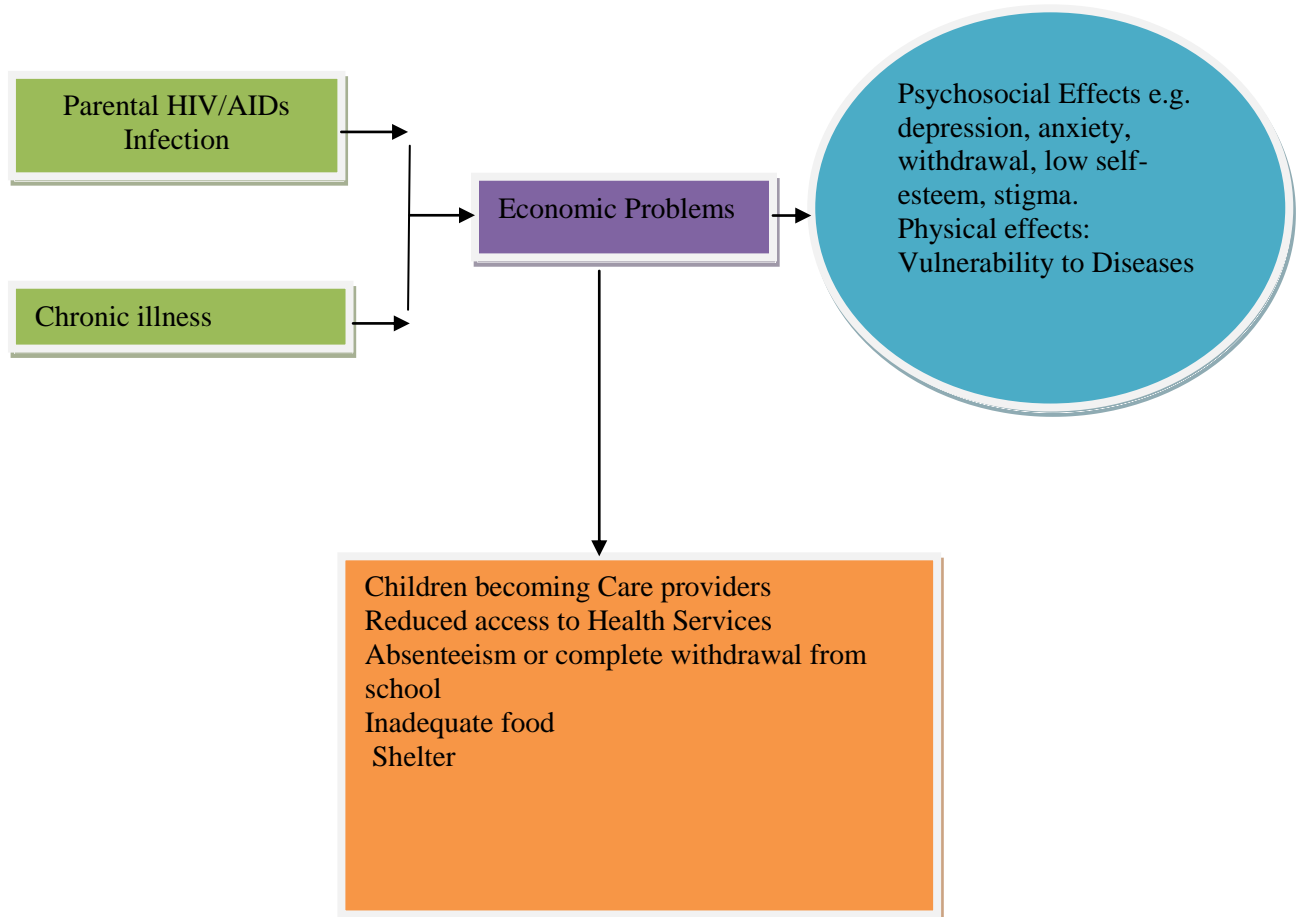
Studies have revealed that a many AIDS orphans are at risk for malnutrition and may not have access to available health services (Bicego et al., 2003; Mangoma et al., 2008). Similarly, a review by Ritcher (2004) reported that parental HIV may have several impacts on the child including health and nutrition, poor education outcome and long-term developmental impact. Other studies have also reported strong correlations between parental HIV and several factors including internalization disorders, post-traumatic stress disorder, nutritional status (DeSilva et al., 2012). Indeed, Mechanic & Hansel (1987) have argued that in such children, health status and food security should be viewed as possible modifier of psychosocial wellbeing due to the nexus between health, nutrition and a child's psychological wellbeing. Another explanation which has been offered on the link between parental HIV and a child's health and nutritional status is the idea that such children may receive poorer care and supervision, a proposition which has been demonstrated in some studies (DeSilva et al., 2012).

#### **2.1.7 Vulnerability to infection**

Some studies have reported that sexually risk behavior in adolescents may have several correlates including HIV-related psychosocial factors e.g. parental HIV, caregiver relationship and social support characteristics, among others (Puffer et al., 2012). It is hypothesized that the risk to infection in HIV/AIDS affected children may be linked to early onset of sexual activity, commercial sex and sexual abuse - all of which may be

precipitated by economic need, peer pressure and lack of supervision (Amonrnkul et al., 2009). Indeed, some studies of street children have demonstrated that economic needs such as finding food far outweigh the future orientation required to avoid infection. These finding has found support in studies focused on dynamics of sexual partnerships which suggest that sex among youth often occurs within transactional and coercive relationships – liaisons which are generally associated with higher risk of HIV transmission (Amonrnkul et al., 2009; Maticka-Tyndale et al., 2005). Additionally, it has been suggested that emotional distress in such children can compromise decision making abilities and decrease self-efficacy and motivation for health seeking behaviour (Puffer et al., 2012). Relying on this argument, these authors have suggested that unaddressed mental health problems associated with factors such as parental HIV may undermine adolescent behavior change interventions.

## 2.2 Conceptual Framework



**Figure 2.3** Conceptual Framework

HIV infection is a viral infection that is ultimately associated with potentially fatal acquired immunodeficiency syndrome. At present HIV accounts for a high percentage of morbidity and mortality Homa-Bay County. Although the clinical effects of the disease are well documented, few studies have documented the psychosocial impacts of parental HIV/AIDS. Existing studies in this area have demonstrated that children living with HIV positive parents suffer real psychosocial effects. Such effects include: depression, anxiety, withdrawal, low self-esteem and stigma. These effects may be aggravated by economic effects whose consequences can be diverse including: reduced access to health care (which may in turn predispose to child to disease vulnerability), withdrawal from school, inadequate nutrition and inadequate shelter.

## **CHAPTER 3: METHODOLOGY**

### **3 Introduction**

This section describes and justifies the methodology used in the study. In this regard, details of the study design, target population, sampling strategy, data collection and analysis and the expected outcomes will be described.

#### **3.1 Study design**

This is a descriptive cross sectional 3 - dimensional study. The rationale for choice is premised on the following considerations, the strategy facilitates the collection of various opinions and attitudes, as well the establishment of cause-and-effect relationships – a process which is key to achieving the objectives of the study which sought to assess the psychosocial effects of parental HIV on children. In this study, children living with one or two HIV/AIDS infected parents aged 9-16 years will be interviewed.

#### **3.2 Variables**

The following variables were evaluated:

##### **3.2.1 Independent Variable**

The independent variables consisted of the following: HIV status of the parents/guardian, the demographic characteristics (child sex, age of the child, employment status of the guardian/parent etc.).

##### **3.2.2 Dependent variables**

Psychosocial effects: emotional disorders, conduct effects, prosocial behaviour and hyperactivity.

### 3.3 Study area

Rachuonyo sub-county is an administrative district in Homa Bay County. It's headquarter is at Kosele. The district has a population of 307,126 (2009 census) and an area of 945 km<sup>2</sup>. Shown below is a table showing the administrative divisions within the district.

**Table 3. 1: Administrative division**

<b>Division</b>	<b>Population</b>	<b>Urban pop.</b>	<b>Headquarters</b>
East Karachuonyo	74,584	381	Kendu Bay
Kabondo	49,934	0	Kabondo
Kasipul	129,854	8,110	Oyugis
Rachuonyo	52,754	0	
<b>Total</b>	<b>307,126</b>	<b>8,491</b>	-

The study area was at Kamagak sub-location in Rachuonyo County. The choice of Kamagak sub-location in Nyanza province was appropriate since the prevalence of HIV/AIDs is high, 13.9% (NASCOP, 2010). The region is mostly dominated by people from the Luo ethnic community. Oyugis Town also falls within the sub-location. It has several hospitals, including a district hospital and several private hospitals and government funded dispensaries. In addition, various NGO's and agencies (USAID, Care international, Plan international, Catholic church among others), are currently engaged in HIV/AIDS advocacy.

### 3.4 Study population

Children between 9-16 years of age living with infected parents.

#### 3.4.1 Inclusion criteria

The following criteria was used to determine eligibility for the study

- Children between 9-16 years,

- Children living either with parents or guardian with confirmed of HIV/AIDs positive status
- Parents or guardians willing to enlist in the study and give consent.
- Children enrolled in a school,

### **3.4.2 Exclusion criteria**

- HIV negative parents
- Children who were unwilling to give consent.

### **3.5 Sampling: Purposive sampling method**

The investigator obtained the names of prospective respondents from local women self-help group, faith based organizations, and from NGOs working in the area. Once the respondents were identified, purposive sampling was then used to identify possible respondents. Purposive sampling was preferred for several reasons: the investigator can use the best available knowledge concerning the subjects to be studied; the investigator can exercise better control of significant variables; considering the sensitivity of the subject, it can be argued that failure rate among respondents identified via random sampling can be high. On the other hand, purposive sampling can rapidly help in the identification of possible respondents.

Once prospective participants were identified, parental consent was sought. To get parental/guardian consent, the researcher introduced the study explicitly stating the purpose, aims and objectives as well as the process of the study. The parents were also informed that their identity, privacy and rights were to be protected. In addition, they were informed of the fact that they were free to terminate the study at any time they deem appropriate should they allow their charges to participate. Other information relating to protection of participants' identity, human rights and privacy as described in chapter 3 were also availed.

The instrument was then introduced to the children. Participants were given the opportunity to ask questions should they wish to do so. Once the questionnaire was filled appropriately, the respondents were thanked and no subsequent contact was made.

### **3.6 Sample size**

The sample size was determined according to Walpole (1986) formula:

$$\begin{aligned}n &= \frac{Z^2 pq}{d^2} \\ &= \frac{(1.96)^2 0.80(1-0.80)}{(0.05)^2} \\ &= 248.\end{aligned}$$

Where: n= the desired sample size

Z= the standard normal deviate at the required confidence level (95% CI)

P= the estimated proportion of an attribute that is present in the population

$$q= 1-p$$

d= the level of statistical significance set.

NB: In this study, P was obtained from a study done in Ghana to find the psychological effects on children with HIV infected parents (Doku 2009).

#### **3.6.1 Recruitment, Training and Pre-testing**

The data was collected by the principal researcher and 2 research assistants. Intensive training was carried out to familiarize the assistants with questionnaires and interview guides. An actual pre-test was carried out at Kamagak Location to create familiarity. The entire process was guided by the investigator.



### **3.6.2 Data Collection Tools and Procedures**

Data was collected using and strength and difficulties questionnaire (See appendix 1). An SDQ is a well validated instrument which can be used to measure the psychosocial well-being of children and adolescents (Doku, 2009). The questionnaire has already been translated into 60 languages (including Kiswahili) and has been used in 40 countries (Palmieri and Smith, 2007). As has been reported elsewhere in this document, SDQ clinical utility and validity has been tested in numerous studies from diverse countries and has been found to correlate substantially with established indices of childhood psychopathology such as the Rutter (1967) and Achenbach (1991) questionnaires (see Goodman, 1999). Utility of the tool in screening psychopathology in community samples and its sensitivity as a clinical outcome measure has been demonstrated (Mathai et al., 2003).

SDQ asks 25 items-rated on a three-point Lickert scale (Not True, Somewhat True, and Certainly True) divided on five subscales: emotional symptoms, conduct problems, hyperactivity, peer relationship problems and prosocial behaviors. Five of the items are worded positively and scored in the opposite direction (2 for "not true" etc.). Ten of the items are worded in a manner reflecting strengths, 14 items reflecting difficulties, while one item may be considered neutral but is scored as a difficulty item on the peer problems subscale. The 25 SDQ items are divided into 5 scales of 5 items: the hyperactivity-inattention scale, the emotional symptoms scale, the conduct problem scale, the peer problem scale and the prosocial behaviour scale. The scores of hyperactivity-inattention, emotional symptoms, conduct problems and peer problems can be summed to generate a total difficulty score ranging from 0 to 40. The prosocial scale gives a score for positive prosocial behaviour (Goodman 1999), and this sum is not included in the total difficulties score. SDQ comes in several versions including a self-completed version (used in this study) and an interviewer administered version. Although literature surveys appear to suggest that SDQ is has not been validated for application in rural settings in Kenya, it was recently used in Kenya (Puffer et al, 2012).

<b>Prosocial scale</b>	<b>Hyperactivity scale</b>
1. I try to be nice to other people. I care about their feelings.	<b>2.</b> I am restless; I cannot stay still for long.
4. I usually share with others (food, games, pens).	<b>10.</b> I am constantly fidgeting or squirming.
9. I am helpful if someone is hurt, upset or feeling ill.	<b>15.</b> I am easily distracted. I find it difficult to concentrate.
17. I am kind to younger children.	<b>21.</b> I think before I do things.*
20. I often volunteer to help others (parents, teachers, and children).	<b>25.</b> I finish the work I'm doing. My attention is good.
<b>Emotional symptoms scale</b>	<b>Peer problem scale</b>
3. I get a lot of headaches, stomach-aches or sickness.	<b>6.</b> I am usually on my own. I generally play alone or keep to myself.
8. I worry a lot.	<b>11.</b> I have one good friend or more.
13. I am often unhappy, down-hearted or tearful.	<b>14.</b> Other people my age generally like me
16. I am nervous in new situations. I easily lose confidence.	<b>19.</b> Other children or young people pick on me or bully me.
24. I have many fears. I am easily scared.	<b>23.</b> I get on better with adults than with people my own age.
<b>Conduct problems scale</b>	
5. I get very angry and often lose my temper	
7. I usually do as I am told.	
12. I fight a lot. I can make other people do what I want.	
18. I am often accused of lying or cheating.	
22. I take things that are not mine from home, school or elsewhere.	

**Figure 3. 1:** SDQ subscales and the distribution of questions in the questionnaire

\* Positively worded problem items are in italics

To collect data, the SDQ questionnaire was administered to the children by trained research assistants. They were also pre-tested two weeks before the actual data collection was undertaken. The pre-testing was done in 19 children selected purposively from Nyatwere Primary School in Kamuma sub-location, Kamagak west. To ensure quality data was generated on the ground, the lead researcher countered checked all completed questionnaires and undertaken random verification of data by re-interviewing respondents to ensure data collected was original. Data entry was undertaken concurrently with data collection so as to allow for quick correction of inconsistent errors or missing responses while research assistants were still on the ground.

### **3.7 Data Reliability and Validity**

Validity indicates whether the items measure what they are designed to measure (Borg and Gall, 1989). Content validity was used to examine whether the instruments answered the research questions. Adjustments and additions to the research instruments and consultations and discussions with the supervisor were undertaken to establish content validity.

Instrument reliability is the dependability, consistency or trustworthiness of a test. Cronbach's Coefficient Alpha approach was used to measure internal consistency of the research instruments. This approach is recommended by Cohen, Manion and Morrison, (2007) for its ability to give average split-half correlation for all possible ways of dividing the test into two parts. Cronbach's Coefficient Alpha is a scale measurement tool appropriate in measuring internal consistency in descriptive researches.

### **3.8 Data Processing and Analysis**

Analysis was conducted using MS Excel 2007. First, the data from the questionnaires were translated using SDQ translation instructions (See Appendix 2). A descriptive analysis of the prevalence of the various affective domains (emotional problems, conduct problems, hyperactivity etc) within the highlighted demographics (e.g. sex, age sets, and parental employment status, among others) was then undertaken. Calculations of the mean scores of each of the four quality of life domains were also conducted and multiple comparisons evaluated by one-way analysis of variance (ANOVA). Further, Pearson correlation coefficients were calculated to investigate relationships between the affective factors. Multinomial logistic regression analysis was also conducted. For the purposes of analysis, the level of significance was set at 95% (CI) confidence interval.

#### **3.8.1 Presentation**

The results obtained are displayed using graphs, tables and pictures where appropriate.

### **3.9 Minimization of Errors and Biases**

All research assistants were trained before the commencement of the study. To minimize errors in data acquisition, nonresponse error and selection bias and others the following was done. Pretesting questionnaires was done to eliminate ambiguity in the main study and also for quality control.

Errors in data acquisition which might arise from recording of incorrect responses; mistakes made during transcription; misinterpretation of questions by respondents and inaccurate responses to questions concerning sensitive issues were minimized by cross checking transcribed data with primary sources, using the investigators administered questionnaire instead of the self-administered questionnaire. Sensitive questions were only asked after gaining the respondent's confidence i.e. by assuring him/her that the information was confidential or that he or she does not have to give a response.

### **3.10 Ethical considerations and protection of human subjects**

Ethical clearance was obtained from the UoN/KNH (ERC) the University of Nairobi. All participating individuals provided informed consent. Informed consent was obtained from parents or caregivers before the study and after the nature and purpose of the study, and data handling principles were thoroughly explained. Permission to do the study was also sought from community leaderships (e.g. Chiefs, headmasters, among others) in school and villages. Additional safeguards for participant's rights included transparency about all aspects of the study. And to protect participant's privacy, each participant was assigned a serial number and the information obtained was appropriately safeguarded.

## CHAPTER 4: RESULTS

### 4 Introduction

In this section, findings of the study are detailed. A summary of the raw data collected from the field will be presented initially. This will be followed by a gendered analysis of the psychological problems associated with HIV/AIDS. Analysis based on age, parents or guardian employment status, nature of the respondent's relationship to the parent will be presented in the subsequent section.

#### 4.1 Results on the test for reliability and reproducibility

Preliminary data was gathered by administering a pilot questionnaire to 18 respondents. The questionnaire was then re-administered to them after 2 weeks to test for reproducibility. Cronbach's alpha was used to test the reliability, the values for the questions ranged from 0.81 to 0.61 with an overall Cronbach's alpha of 0.70 showing good reliability.

#### 4.2 Socio-demographic Characteristic of Participants

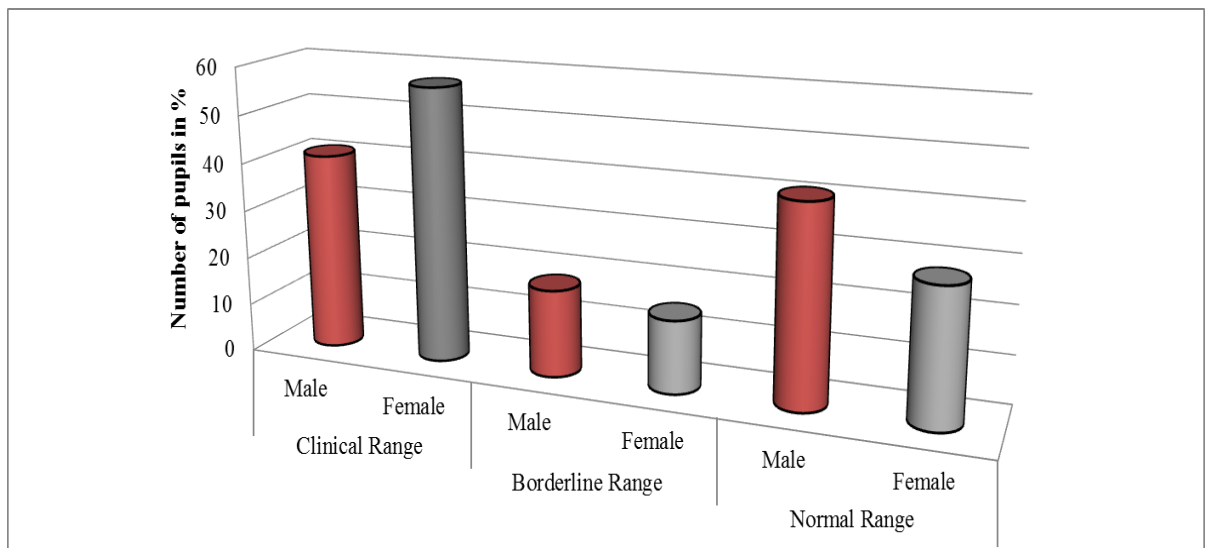
**Table 4. 1:** Baseline characteristics of sample.

<b>Characteristic</b>	<b>N</b>	<b>%</b>
<b>Gender</b>		
Boys	93	38
Girls	154	62
<b>Ages</b>		
6-9	61	25
10-13	118	48
14-17	68	28
<b>Nature of relationship to child</b>		
Guardian	56	23
Mother	118	48
Father	73	30
<b>Employment status of Parent</b>		
Employed	78	32
Unemployed	169	68

The sample population consisted of 94 (38%) boys and 154 (62%) girls. Similarly, 25% of the sampled populations were in the 6-9 year range, 48% were in the 10-13 year range and 28% were in the 14-17 year range. Regarding the nature of the relationship to parent, 23% of the pupils sampled lived with guardians, 48% with their mothers and 30% with their fathers. At the same time, 68% of the parents were reportedly unemployed while 32% were employed. The SDQ questionnaire was distributed to all the students sampled and the response rate was 99-100%.

### 4.3 Psychosocial effects among male and female children living with HIV positive parents

#### 4.3.1 Emotional Disorders (n=246)



**Figure 4. 1:** Emotional Disorders

The percentage of male pupils (n=94) with substantial risk of clinically significant problems was 41%. Eighteen percent of the students sampled were in the borderline range – may reflect clinically significant problems; and 41% were in the normal range – unlikely to have clinically significant problems. In females (n=154), the percentages stood at 57% in the clinical range, 15% in the borderline range and 28% in the normal range. The mean of the SDQ in the emotional disorder score was 6.4 for females and 5.6 for males and a variance of 2.9 and 4.7 respectively (see Table 1 below).

A significant difference was observed between males and females in this subscale ( $p < 0.0023$ ).

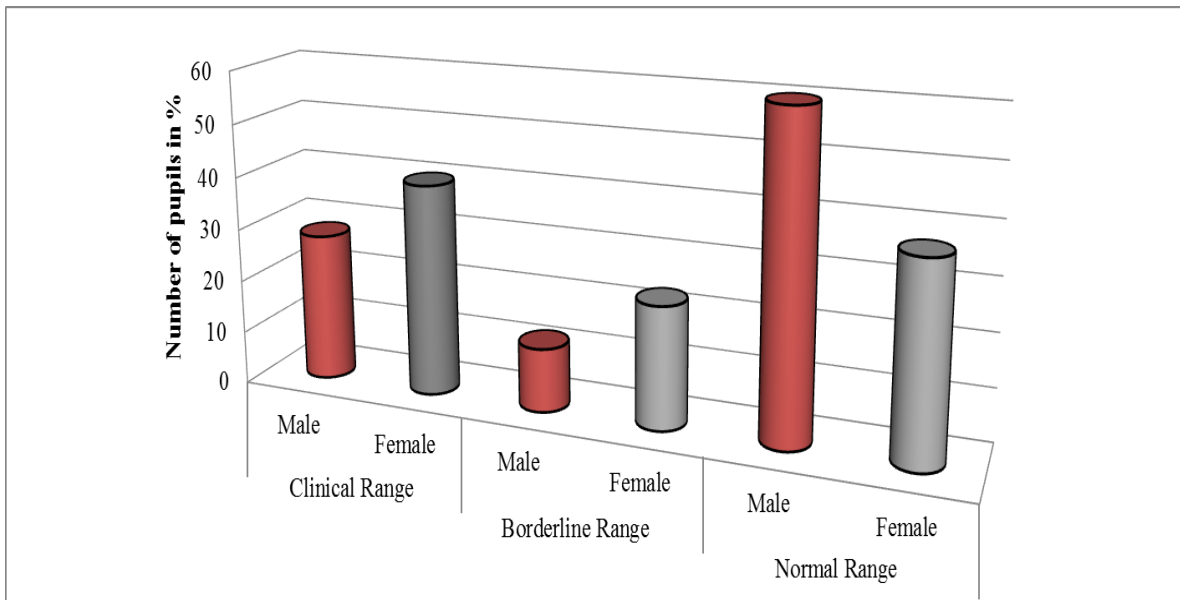
**Table 4. 2:** Single Factor ANOVA for emotional disorders scores

Groups	Count	Sum	Average	Variance
Females	154	989	6.422078	2.938333
Males	93	526	5.655914	4.706405

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	34.03691	1	34.03691	9.448761	0.002352	3.879694
Within Groups	882.5542	245	3.602262			
<b>Total</b>	<b>916.5911</b>	<b>246</b>				

#### 4.3.2 Conduct Effect Scores (n=246)



**Figure 4. 2:** Conduct Effect.

Scores for conduct problems were varied between males and females. The percentage of male pupils (n=94) with scores within the clinical range was 28%. 12% were in the borderline range and 60% were in the normal range. In female respondents (n=154), 40% were in the clinical range, 23% in the borderline range and 37% were in the normal range. In this subscale, the mean value for males was 3.4 and that for females was 4.0. A variance of 2.6 for males and 3.8 for females was observed. Similarly, a significant difference of  $p > 0.02$  was observed between males and females.

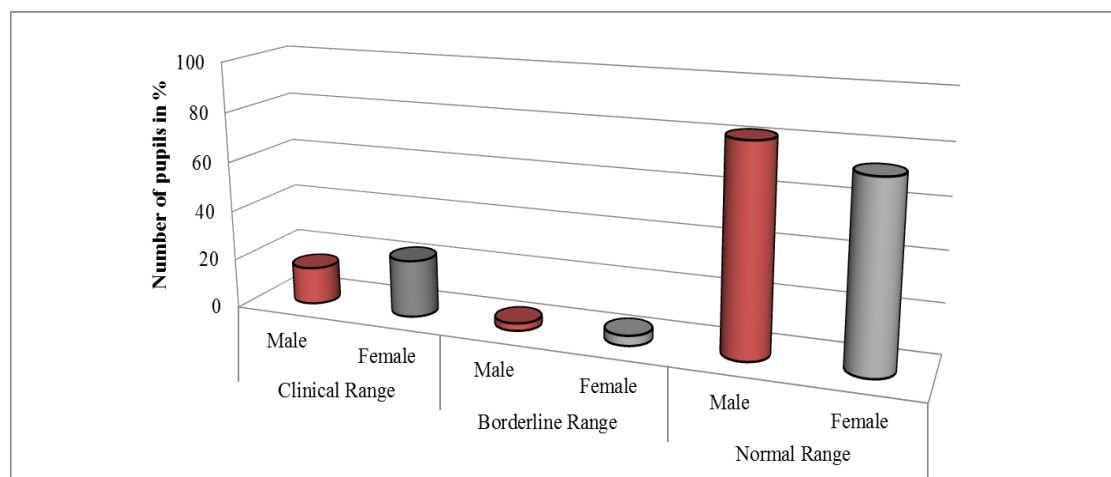
**Table 4. 2:** Single Factor ANOVA for conduct problem score

<b>Groups</b>	<b>Count</b>	<b>Sum</b>	<b>Average</b>	<b>Variance</b>
Males	93	323	3.473118	2.621552
Females	154	621	4.032468	3.757109

<b>ANOVA</b>						
<b>Source of Variation</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>P-value</b>	<b>F crit</b>
Between Groups	18.14149	1	18.14149	5.446755	0.020414	3.879694
Within Groups	816.0205	245	3.330696			
<b>Total</b>	<b>834.1619</b>	<b>246</b>				

### 4.3.3 Hypersensitivity Scores (n=246)



**Figure 4. 3:** Hypersensitivity



A relatively modest number of pupils presented with hypersensitivity ratings beyond the threshold for normality. The percentage of male respondents (n=94) with scores within the clinical range was 15%. 3% of the males were rated as borderline cases and 82% were within the normal range. Similarly, 23% of female's respondents (n=153) were within the clinical range for hypersensitivity. 4% were rated in the borderline range and 73% within the normal range. The mean values stood at 3.9 for females and 3.2 for males. A variance of 6.1 for males and 5.3 for females was also noted. Similarly, a significant difference of  $p>0.04$  was observed between males and females.

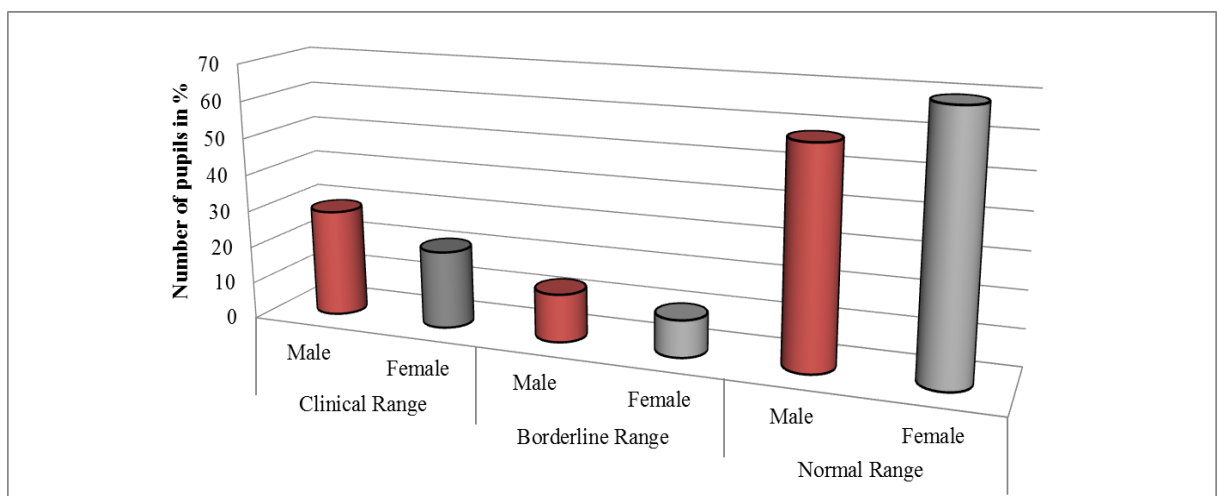
**Table 4. 3:** Single Factor ANOVA for Hypersensitivity scores

Groups	Count	Sum	Average	Variance
Females	154	607	3.941558	6.068458
Males	93	305	3.27957	5.377513

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	25.41018	1	25.41018	4.374276	0.037515	3.879694
Within Groups	1423.205	245	5.809001			
Total	1448.615	246				

#### 4.3.4 Peer Effect Scores (n=246)



**Figure 4. 4:** Peer effect scores

A relatively modest number of pupils had clinically significant peer problem scores. The percentage of male respondents (n=94) with scores within the clinically significant range was 29% and 13% in the borderline range. However, 58% were in the normal range. Correspondingly, 21% of the female respondents (n=154) had clinically significant scores, with a 10% within the borderline range. However, 69% were within the normal range. The mean values stood at 3.9 for females and 3.2 for males. A variance of 6.1 for males and 5.3 for females was also noted. Similarly, a non-significant difference was observed between males and females ( $p>0.32$ ).

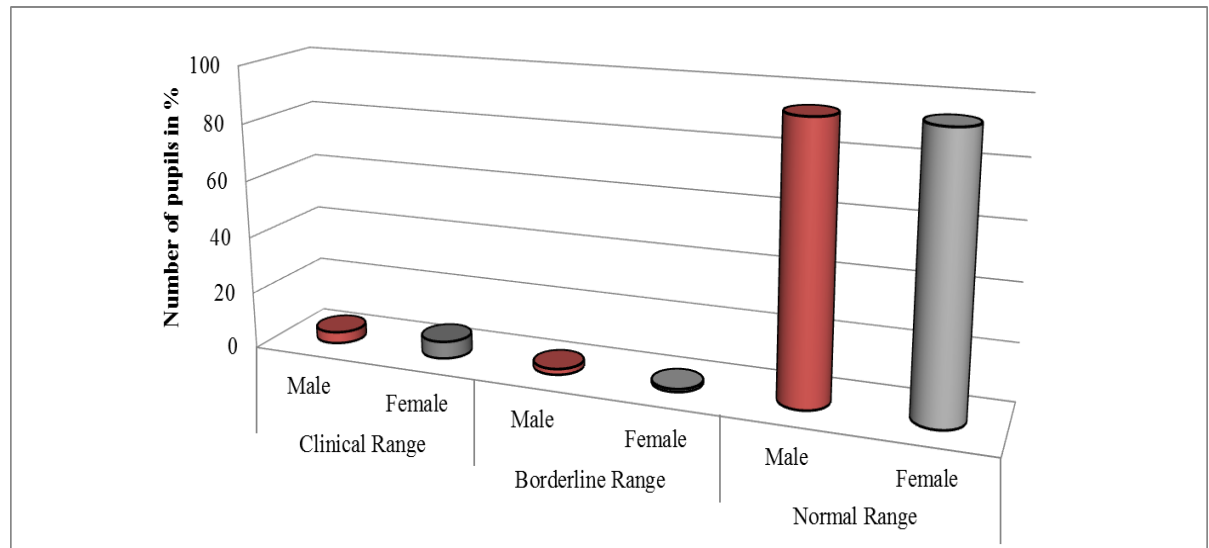
**Table 4. 4:** Single Factor ANOVA for Peer Problems

Groups	Count	Sum	Average	Variance
Males	93	361	3.88172	3.19238
Females	154	565	3.668831	2.40595

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2.627933	1	2.627933	0.972853	0.324943	3.879694
Within Groups	661.8093	245	2.701263			
Total	664.4372	246				

#### 4.3.5 Prosocial Scores (n=246)



**Figure 4. 5:** Prosocial scores

The percentage of male respondents presenting with difficulties in this subscale stood at 4% with 2% of the respondents in the borderline category and 94% within the normal range. In female respondents, 6% of the respondents presented with clinically significant scores in this subscale with 1% and 94% of the respondents in the borderline and normal range respectively. The mean values stood at 8.2 and 8.4 for males and females respectively. The variance for males was 2.4 and that of females was 1.8 respectively. A non-significant difference of  $p>0.18$  was observed between males and females.

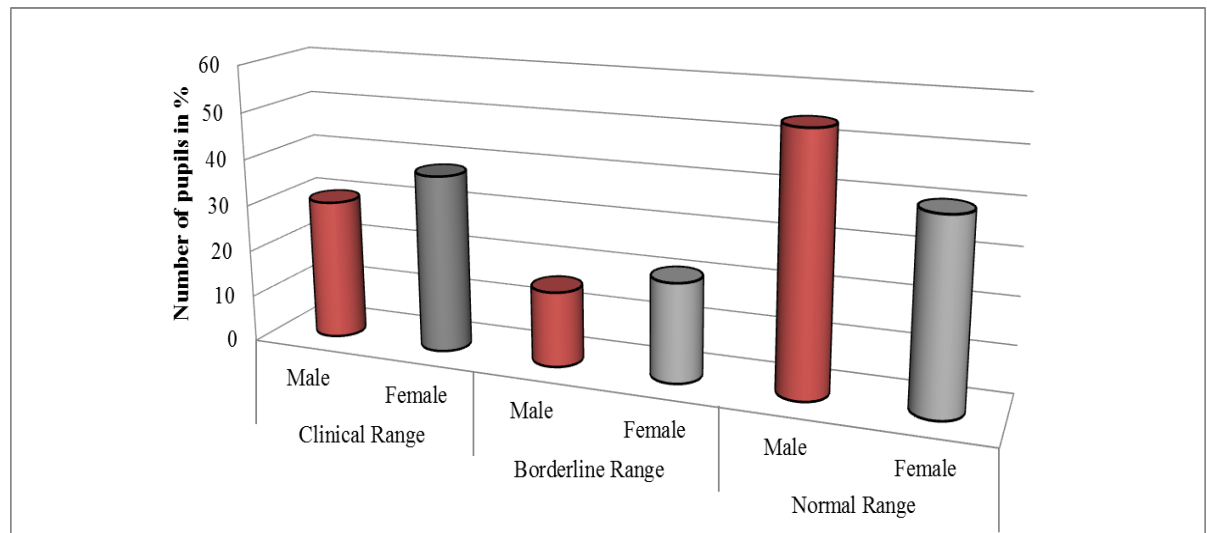
**Table 4. 5:** Single Factor ANOVA for Prosocial scores

Groups	Count	Sum	Average	Variance
Males	93	766	8.236559	2.378214
Females	154	1307	8.487013	1.846235

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	3.637158	1	3.637158	1.777693	0.183671	3.879694
Within Groups	501.2697	245	2.045999			
Total	504.9069	246				

#### 4.3.6 Total Difficulty (n=246)



**Figure 4. 6:** Total Difficulty

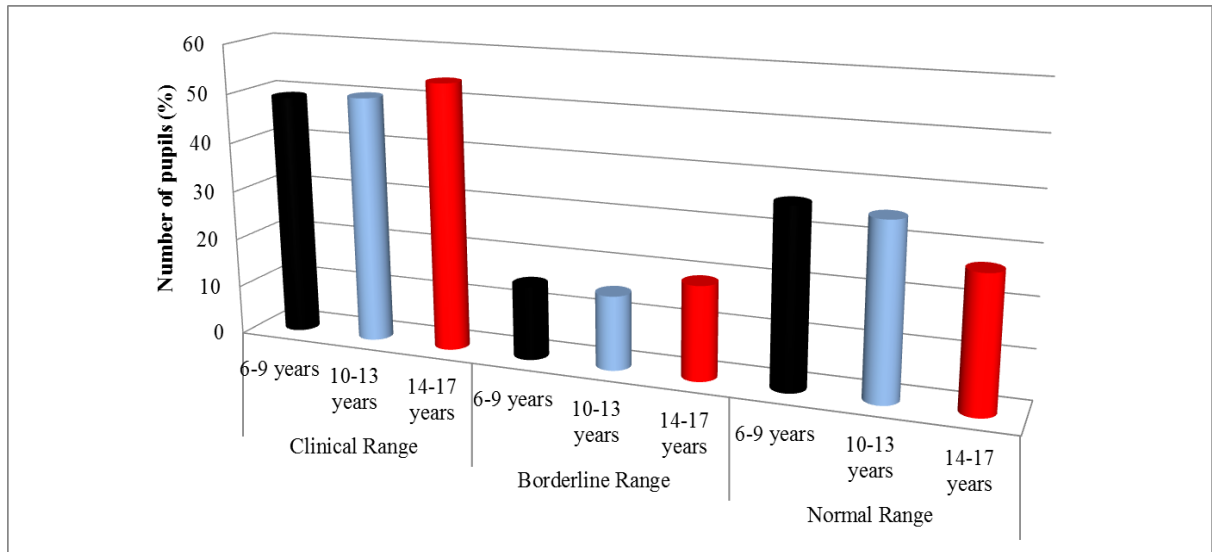
The total difficulty score among male respondents (n=94) stood were as follows: 54% of the respondents fell in the normal range, 16% had a moderately high score and 30% had high clinically significant scores. Similarly, 40% of the female respondents (n=154) sampled had a total difficulty rated as clinically insignificant, 21% of the samples fell within the borderline range and 38% had clinically significant total difficulty scores. The mean of the SDQ self-report total difficulties score in this sample was 16 in males and 18 for females. A variance of 37.6 and 36.7 was observed for males and females respectively (Table 4.6). A significant difference of 0.27 was observed between male and females respondents.

**Table 4. 6:** Single Factor ANOVA for Total Difficulty Scores

<b>Groups</b>	<b>Count</b>	<b>Sum</b>	<b>Average</b>	<b>Variance</b>		
Males	93	1515	16.29032	37.6648		
Females	154	2782	18.06494	36.68857		
<b>ANOVA</b>						
<b>Source of Variation</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>P-value</b>	<b>F crit</b>
Between Groups	182.6055	1	182.6055	4.927938	0.027342	3.879694
Within Groups	9078.512	245	37.05515			
Total	9261.117	246				

#### 4.4 Age and its relationship to the Psychosocial Effects experienced by affected children

##### 4.4.1 Emotional Effcet Scores (n=246)



**Figure 4. 7:** Emotional symptoms score

The emotional symptoms scores of subjectively grouped age sets were as follows: respondents with high risk of psychological effects in the age set between 6 to 9 months (n=61) was 49% with 15% and 36% in the borderline and normal range respectively. Similarly, 50% of the pupils in the age set between 10 – 13 years (n=118) were rated in the clinical range with 15% in the borderline range and 35% within the normal range. In the 14-17 age set (n=68), 54% had above normal emotional symptom score, 19% borderline cases and 27% with limited risk.

The mean of the SDQ self-report emotional difficulty score was 6.2, 6.3 and 5.8 for the 6-9, 10-13 and 14-17 age sets respectively. The variance for these age-sets stood at 1.7, 3.9 and 5.1 (Table 4.7). A significant difference of 0.28 was observed between male and females respondents. Although a substantial number of children presented with difficulties, comparisons did not reveal any significant differences between children in the different age sets ( $p > 0.32$ )

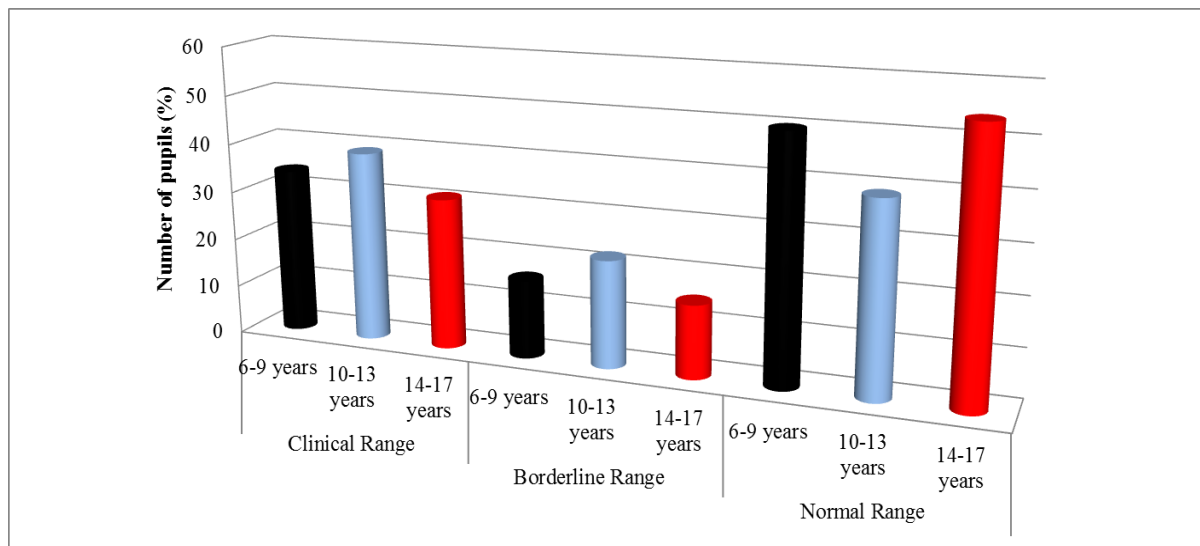
**Table 4. 7:** Single Factor ANOVA for Emotional Symptoms score

Groups	Count	Sum	Mean	Variance
6-9 years	61	378	6.196721	1.727322
10-13 years	118	740	6.271186	3.908735
14-17 years	68	397	5.838235	5.182397

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	8.409127	2	4.204563	1.129634	0.324835	3.032816
Within Groups	908.182	244	3.722057			
Total	916.5911	246				

#### 4.4.2 Conduct Effect Score



**Figure 4. 8:** Conduct effect score

The conduct problem score were as follows: 50% of the respondents between the 6-9 age groups (n=61) 50% were rated within the clinical range and 16% and 34% in the borderline and normal range respectively. In the 10-13 age set, (n=118) 39% were rated in the high risk category, 22% in the borderline range and 39% in the normal range. Similarly, 54% of the respondents in the 14-17 age (n=68) set had a rating above the threshold for normalcy, 15% and 31% in the borderline and normal range respectively. The mean score was 3.8, 4.0 and 3.5 for the 6-9, 10-13 and 14-17 age sets respectively. The variance for these age-

sets stood at 3.9, 4.3 and 1.3 (Table 4.8). Although a substantial number of children presented with difficulties, comparisons did not reveal any significant differences between children in the different age sets ( $p > 0.32$ ).

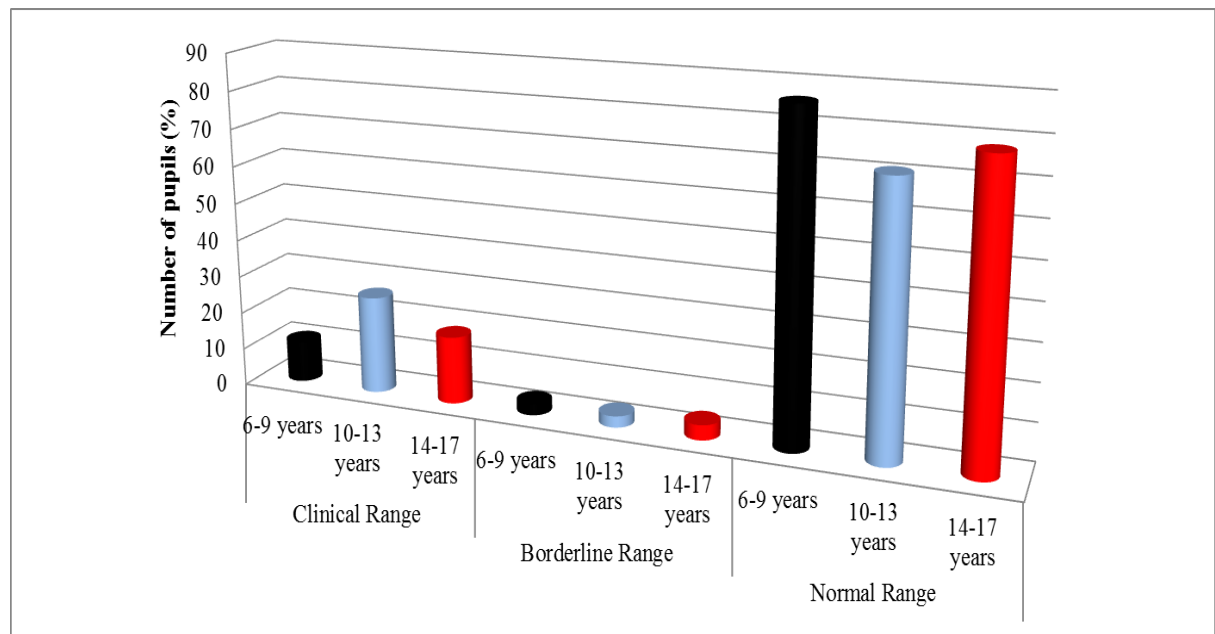
**Table 4. 8:** Single Factor ANOVA for Conduct Problems

Groups	Count	Sum	Average	Variance
10-13 years	118	454	3.847458	3.908156
14-17 years	68	274	4.029412	4.32748
6 - 9 years	61	216	3.540984	1.319126

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	7.818989	2	3.909494	1.154383	0.316967	3.032816
Within Groups	826.343	244	3.386651			
Total	834.1619	246				

#### 4.4.3 Hyperactivity



**Figure 4. 9:** Hyperactivity Scores

The observed hyperactivity scores among the respondents from the different age groups differed significantly. 11% of the respondents in the 6-9 age set had higher than normal hypersensitivity scores, 3% were rated as borderline cases and 86% were in the normal range. Correspondingly, 26% of respondents in the 10-13 age (n=68) set were rated as abnormal with 3% borderline cases and 71% normal cases. In the 14-17 age set (n=118), 18% were rated as abnormal with 4% of the respondents falling in the borderline category and 78% in the normal range. The mean values stood at 3.9, 3.9 and 2.9 for 14-17, 10-13 and 6-9 age sets respectively. The mean values differed significantly across the three groups' ( $p > 0.013$ ).

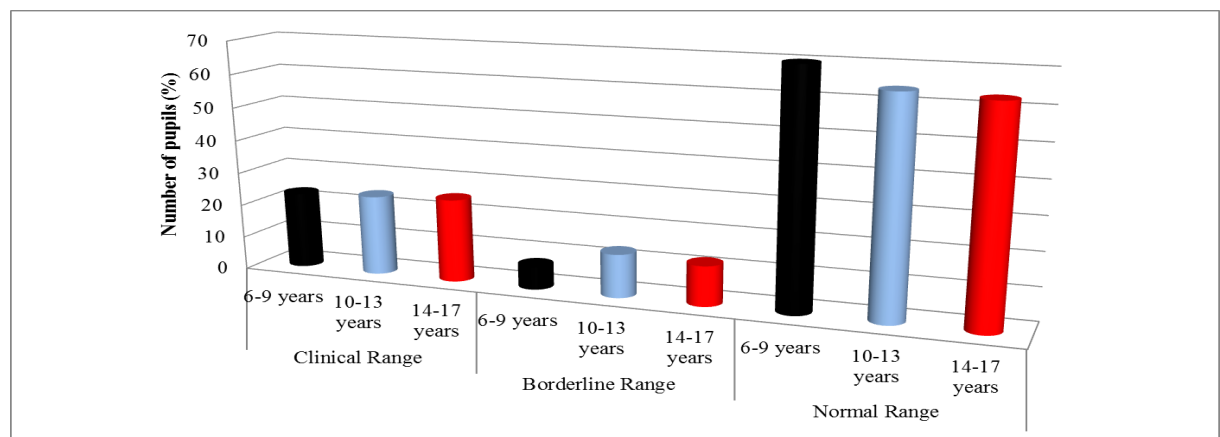
**Table 4. 9:** Single Factor ANOVA for Hyperactivity Scores

Groups	Count	Sum	Average	Variance
10-13 years	118	465	3.940678	6.825511
14-17 years	68	270	3.970588	7.372256
6-9 years	61	177	2.901639	1.756831

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	50.67963	2	25.33981	4.422889	0.012977	3.032816
Within Groups	1397.936	244	5.729245			
<b>Total</b>	<b>1448.615</b>	<b>246</b>				

#### 4.4.4 Peer Effect Score



**Figure 4. 10:** Peer effect scores

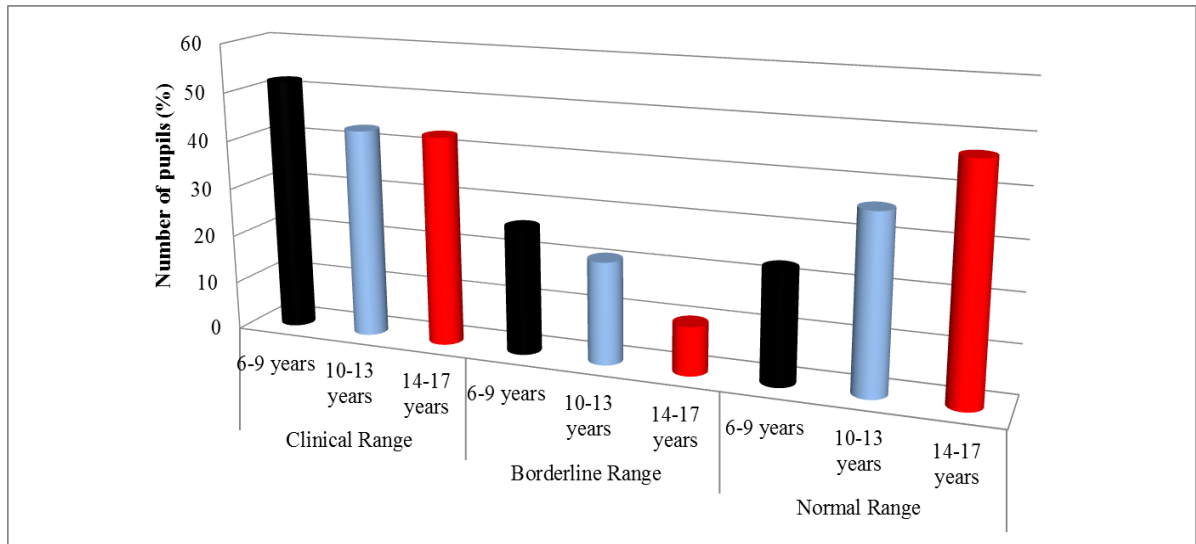


No marked difference on peer problem scores was observed among the respondents from the different age groups. However, a relatively large number of respondents had higher than normal peer problem scores. In the 6-9 age groups (n=61), 23% were rated as abnormal with 7% and 70% in the borderline and normal range respectively. Similarly, 24% of the respondents in the 10-13 age set (n=118) were rated within the clinical range with 13% in the borderline category and 64%. In the 14-17 age (n=68) set, 25% of the respondents were rated as abnormal with 12% and 63% rated within the borderline and normal range respectively. The mean values stood at 3.7, 3.6 and 3.8 for 14-17, 10-13 and 6-9 age sets respectively. The difference between the means was not deemed to be significant ( $p>0.17$ ).

**Table 4. 10:** Single Factor ANOVA for Peer Problem Scores

<b>Groups</b>	<b>Count</b>	<b>Sum</b>	<b>Average</b>	<b>Variance</b>			
14-17 years	118	440	3.728814	2.370274			
10-13 years	68	251	3.691176	3.082309			
9-10 years	61	235	3.852459	2.994536			
ANOVA							
<b>Source of Variation</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>P-value</b>	<b>F crit</b>	
Between Groups	0.928376	2	0.464188	0.170701	0.843174	3.032816	
Within Groups	663.5089	244	2.719299				
Total	664.4372	246					

#### 4.4.5 Total Difficulty



**Figure 4. 11:** Total Difficulty score

The total difficulty score among respondents in the 6-9 age set (n=61) set were as follows: 52% of the respondents were rated within the clinical range with 26% and 23% within the borderline and normal range respectively. Similarly, 43% of the pupils in the 10-13 age (n=118) set were rated within the clinical range with 21% and 36% rated as borderline and normal cases respectively. In the 14-17 age (n=68) set, 36% were in the clinical range with 10% and 47% of the respondents rated as borderline cases and normal cases respectively. The mean in this sample were 11, 11 and 16 for 6-9, 10-13 and 14-17 age groups respectively. Variation between the mean was deemed to be significant ( $p>0.05$ ).

**Table 4. 11:** Single Factor ANOVA for Total Difficulty Scores

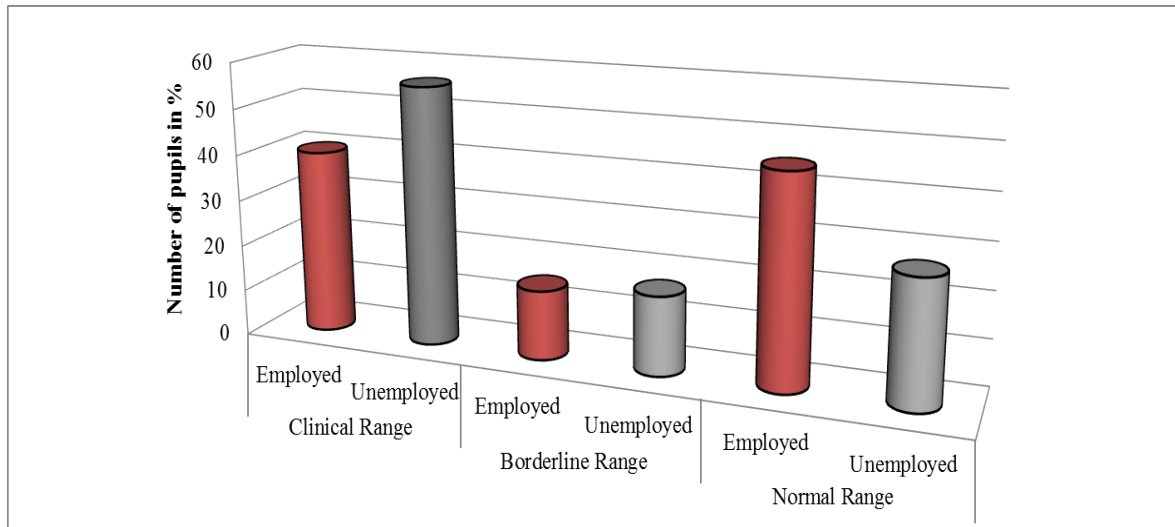
Groups	Count	Sum	Average	Variance
10-13 years	118	1312	11.11864	45.62683
14-17 years	68	767	11.27941	18.71181
6-9 years	61	1017	16.67213	15.29071

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1387.985	2	693.9924	22.5494	1.03E-09	3.032816
Within Groups	7509.473	244	30.77653			
Total	8897.457	246				

## 4.5 Parents employment status and its relationship to the psychosocial impacts experienced by affected children

### 4.5.1 Emotional Effect score (n=247)



**Figure 4. 12:** Emotional effect scores

Analysis conducted with reference to parent's employment status yielded the following results. 40% (n=31) of the respondents with employed parents had ratings considered to be risk free while 15% (n=12) were within the borderline range. However, 45% (n=35) of the respondents had scores within the normal range. Similarly, 56% (n=93) of the respondents with unemployed parents had abnormal ratings, 17% (n=29) were rated as borderline while 27% (n=49) were in the normal range. The mean values were 5.8 and 6.2 for the respondents with employed parents and unemployed parents respectively (Table 4.14). Although a substantial number of children had high emotional problem scores, the difference between the two grouped was not deemed to be significant ( $p > 0.192$ ).

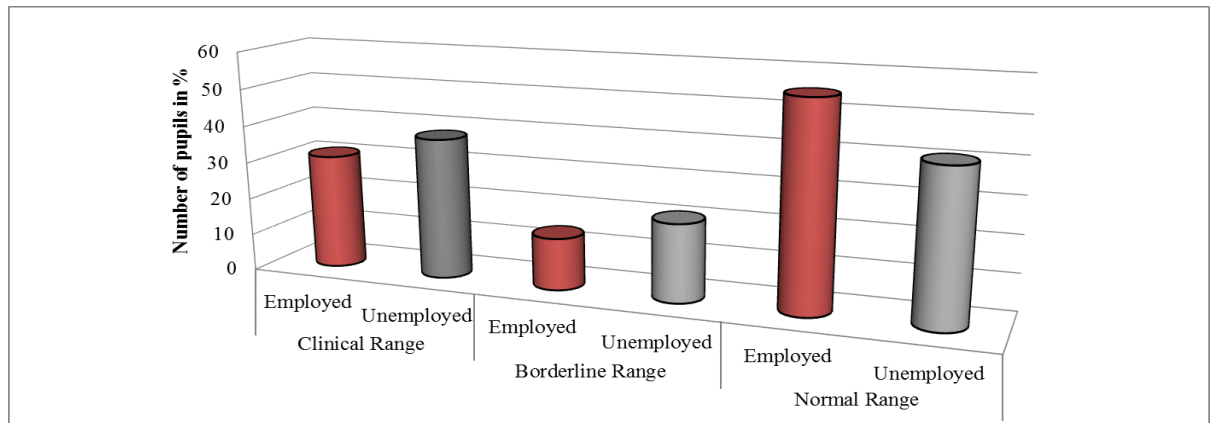
**Table 4. 12:** Single Factor ANOVA for Emotional Problem Scores

Groups	Count	Sum	Average	Variance
Employed	78	460	5.897436	4.508825
Unemployed	169	1055	6.242604	3.351507

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	6.358352	1	6.358352	1.711426	0.192026	3.879694
Within Groups	910.2327	245	3.715236			
Total	916.5911	246				

#### 4.5.2 Conduct effect score



**Figure 4. 13:** Conduct effect scores

A relatively modest number of pupils presented with higher than normal conduct problem scores. 31% (n=24) of respondents with employed parents had abnormal scores, 14% (n=11) had borderline ratings and 55% (n=43) were within the normal range. Similarly, 38% (n=64) of the respondents with unemployed parents had higher than normal conduct problem; 21% (n=36) were within the borderline range and 41% (n=69) had normal ratings. The mean values stood at 3.5 and 4 for respondents with employed parents and unemployed parents respectively. The difference between the two groups was not deemed to be insignificant ( $p>0.1$ ).

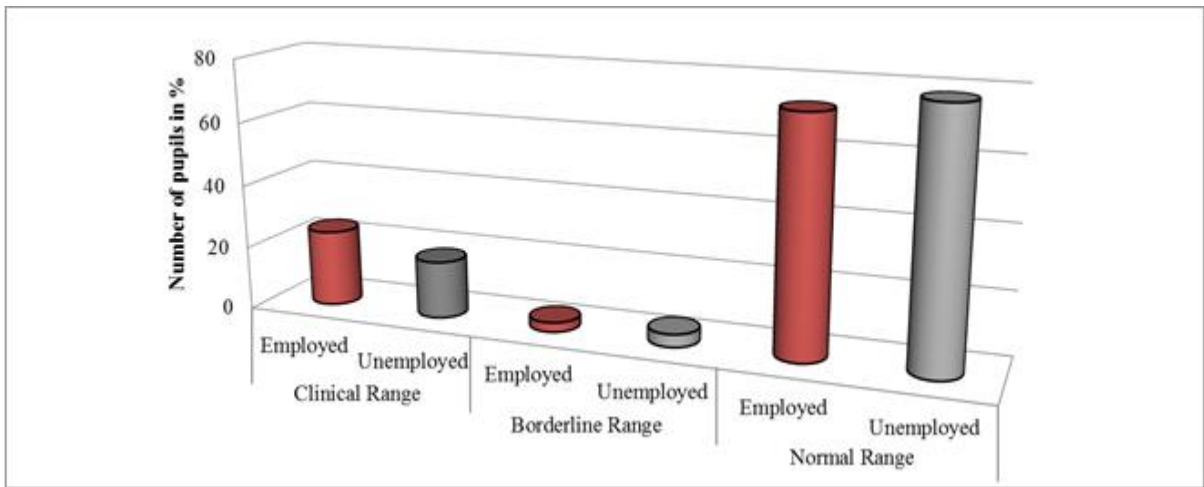
**Table 4. 13:** Single Factor ANOVA for Conduct Problem Scores

Groups	Count	Sum	Average	Variance
Employed	78	276	3.538462	3.784216
Unemployed	169	668	3.952663	3.176317

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	9.156026	1	9.156026	2.719043	0.100439	3.879694
Within Groups	825.0059	245	3.367371			
Total	834.1619	246				

### 4.5.3 Hyperactivity score



**Figure 4. 14:** Hyperactivity score

Hypersensitivity scores between respondents with employed and unemployed parents were as follows: 24% (n=20) of respondents with employed parents had higher than normal hypersensitivity scores, 3% (n=2) of the respondents in this group had borderline ratings and 73% (n=56) were within the normal range. Similarly, 18% (n=30) of the respondents with unemployed parents had higher than normal hypersensitivity scores with 3.6% (n=6) borderline cases and 78% (n=113). The mean values stood at 3.7 and 3.5 for respondents with employed and unemployed parents respectively. The difference between the two groups was not deemed to be insignificant ( $p > 0.1$ ).

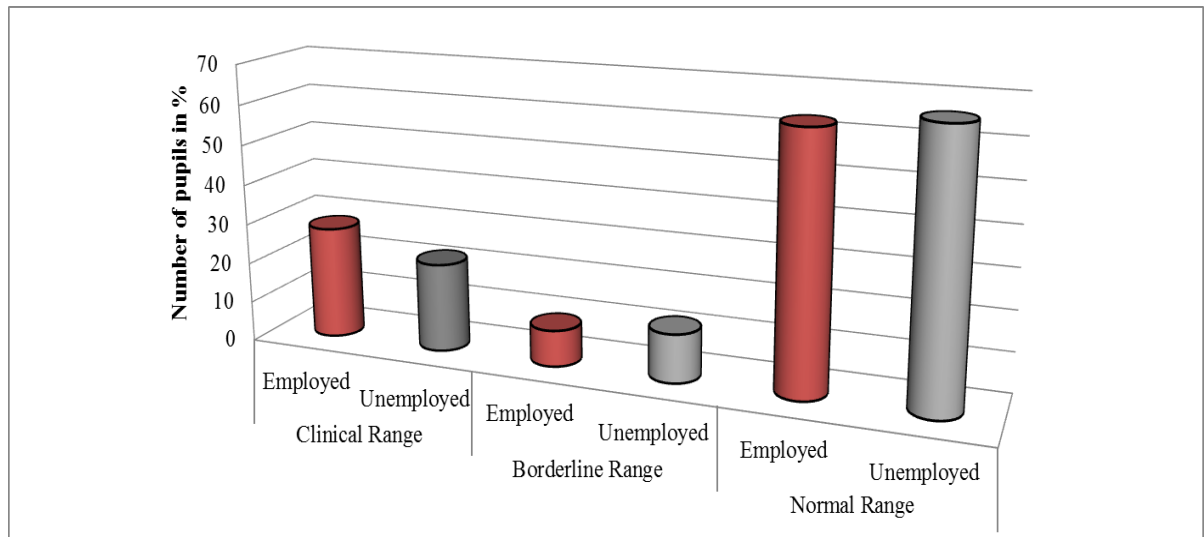
**Table 4. 14:** Single Factor ANOVA for Hyperactivity scores

Groups	Count	Sum	Average	Variance
Unemployed	169	636	3.763314	5.407932
Employed	78	276	3.538462	6.979021

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2.698225	1	2.698225	0.457194	0.499576	3.879694
Within Groups	1445.917	245	5.901703			
Total	1448.615	246				

#### 4.5.4 Peer problem score



**Figure 4. 15:** Peer Effect Scores

A relatively large number of respondents with employed and unemployed parents had higher than normal peer problems scores. 28% (n=21) of respondents with employed parents had higher than normal hypersensitivity scores while 9% (n=7) of the respondents in this group had borderline ratings and 63% (n=49). Among the respondents with unemployed parents, 22% (n=38) had higher than normal peer problem scores while 12% (n=20) were in the borderline range and 66% (n=112). The mean values stood at 3.7 and 3.7 for respondents either group (Table 4.17). The difference between the two groups was not significant ( $p>0.776$ ).

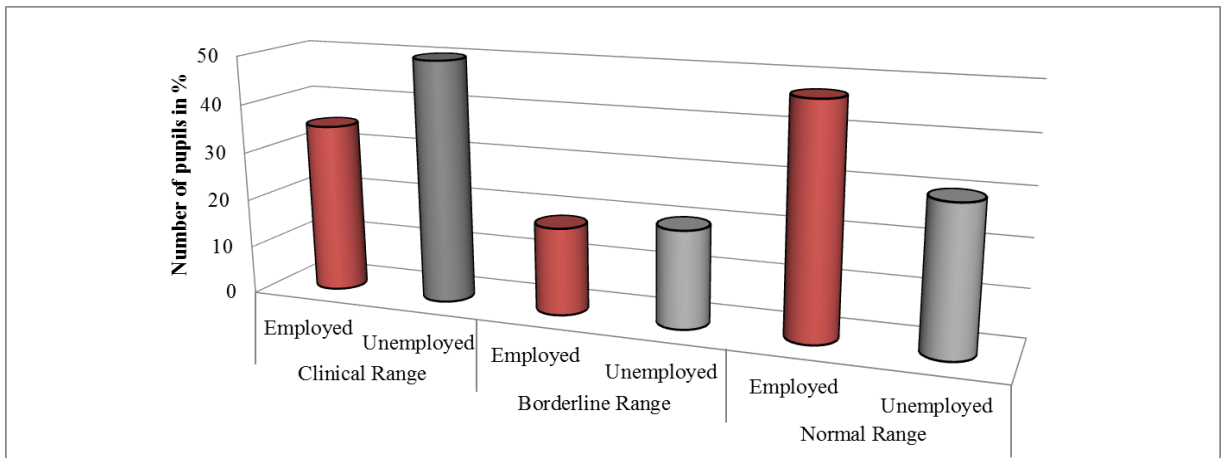
**Table 4. 15:** Single Factor ANOVA for Peer Problem Scores

Groups	Count	Sum	Average	Variance
Employed	169	637	3.769231	2.571429
Unemployed	78	289	3.705128	3.015818

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.219298	1	0.219298	0.080889	0.776336	3.879694
Within Groups	664.2179	245	2.711094			
Total	664.4372	246				

#### 4.5.5 Total difficulty Scores



**Figure 4. 16:** Total difficulty score

A relatively large number of respondents with employed and unemployed parents had relatively high total difficulty scores. 35% (n=19) of the respondents had higher than normal total difficulty scores. 18% (n=14) were in the borderline category and 47% (n=27) within the normal range. Similarly, 50% (n=94) of the respondents with unemployed parents had abnormal scores, 20% (n=33) were in the borderline range and 30% (n=60) were in the normal range. The mean in this sample were 15 and 12 in the unemployed and employed respondents respectively. The difference in the total difficulty scores between the two groups was significant ( $p > 0.00097$ ).

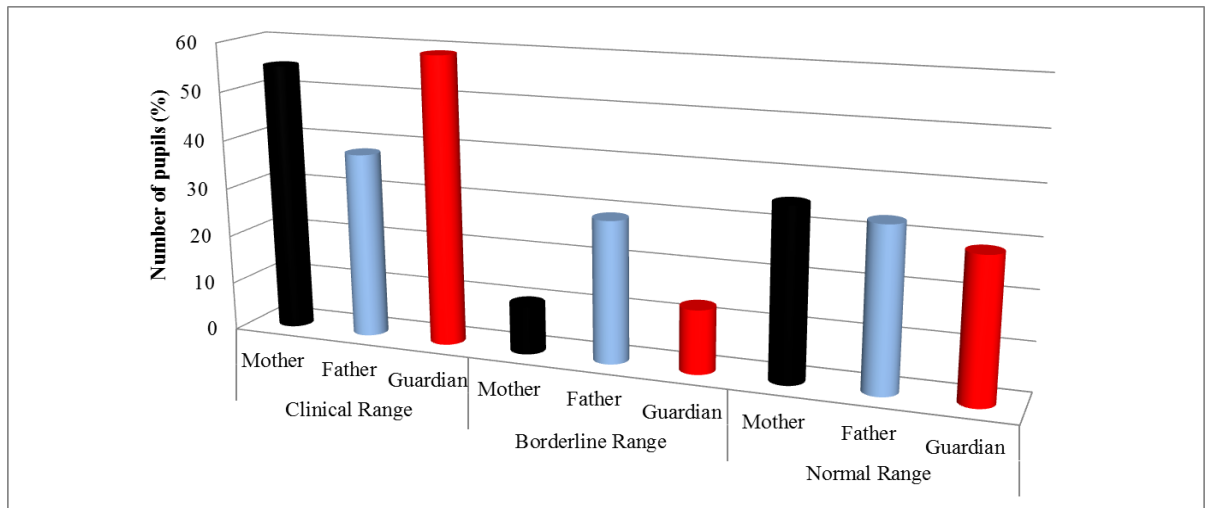
**Table 4. 16:** Single Factor ANOVA for Total Difficulty Score

Groups	Count	Sum	Average	Variance
Unemployed	169	2543	15.04734	29.3787
Employed	78	988	12.66667	22.25108

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F criteria
Between Groups	302.4705	1	302.4705	11.1454	0.000974	3.879694
Within Groups	6648.955	245	27.13859			
Total	6951.425	246				

#### 4.6 Nature of relationship to parent



**Figure 4. 17:** Emotional effect score

Emotional problem scores of respondents parented either by a single mother; father or guardian did not differ much. 55% of the respondents parented by a single mother had higher than normal emotional problem scores, 10% of the respondents in this sub-group were rated in the borderline category and 35% were in the normal range. Similarly, 38% of the respondents parented by a father had abnormal emotional problem scores, 30% of the respondents were borderline cases and 32% in the normal range. Of the respondents parented by guardians, 61% had higher than normal ratings, 11% were in the borderline range and 29% were in the normal range.



The mean values stood at 6.2, 5.8, 6.2 for respondents parented by a mother, father or a guardian (Table 4.19). There was no significant difference between the three groups ( $p>0.29$ ).

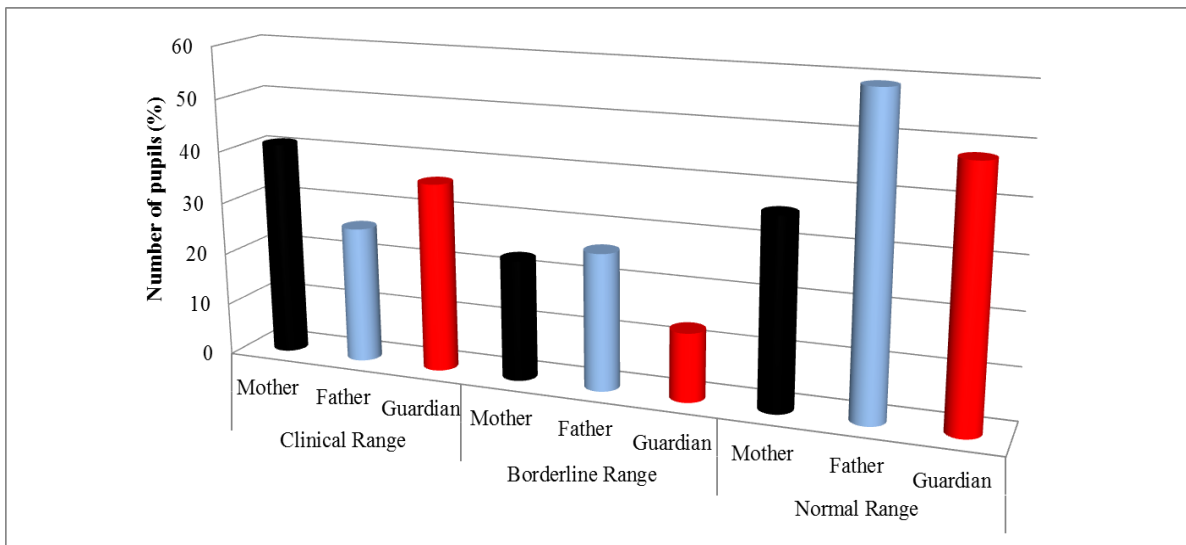
**Table 4. 17:** Single Factor ANOVA for Emotional Score

Groups	Count	Sum	Average	Variance
Guardian	56	349	6.232143	1.672403
Father	73	426	5.835616	4.972603
Mother	118	740	6.271186	3.908735

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	9.259519	2	4.62976	1.245037	0.289753	3.032816
Within Groups	907.3316	244	3.718572			
Total	916.5911	246				

#### 4.6.1 Conduct Effect score



**Figure 4. 18:** Conduct effect score

A significant number of respondents presented with higher than normal conduct problem scores in pupils parented by a mother. Among these respondents, 41% had abnormal conduct problem scores, 23% were rated in the borderline range and 36% were in the normal range. Similarly, 26% of the respondents parented by a father had abnormal ratings,

15% of the cases were in the borderline category and 59% had normal ratings. Of the respondents parented by guardians, 36% had higher than normal ratings, 14% were in the borderline range and 48% were in the normal range. The mean values stood at 3.8, 4.3, 3.7 and respondents parented by a mother, father and a guardian respectively (Table 4.19). There was no significant difference between the three groups ( $p>0.84$ ).

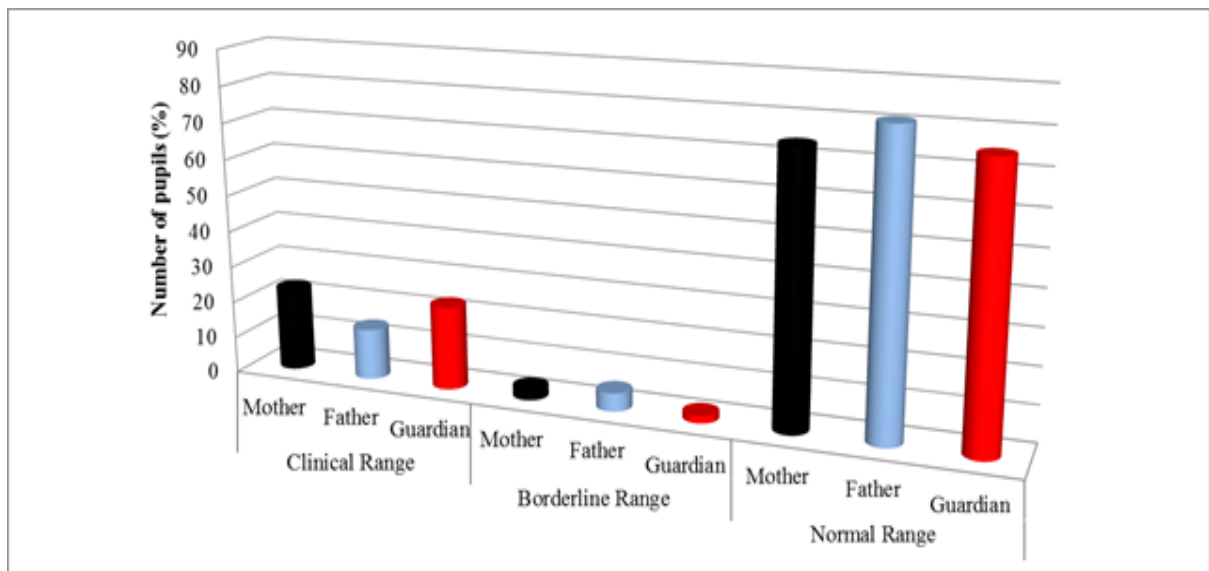
**Table 4. 18:** Single Factor ANOVA for Conduct problem score

Groups	Count	Sum	Average	Variance
Mother	118	454	3.847458	3.908156
Father	73	283	3.876712	4.359589
Guardian	56	207	3.696429	1.124351

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1.178009	2	0.589005	0.172533	0.841633	3.032816
Within Groups	832.9839	244	3.413869			
Total	834.1619	246				

#### 4.6.2 Hyperactivity score



**Figure 4. 19:** Hyperactivity score

Hyperactivity scores of respondents living with a mother, a father or a guardian were as follows: 23% of the respondents living with a mother had abnormal hyperactivity scores, 3% of the respondents in this category were rated in the borderline range and 74% were in the normal range. Similarly, 14% of the respondents parented by a father had higher than normal hyperactivity scores, 5% were in the borderline range and 81% were in the normal range. At the same time, 23% of the respondents parented by a caregiver had clinically significant ratings, 2% were in the borderline range and 75% were in the normal range. The mean values stood at 3.02, 3.8 and 3.94 for respondents parented by a mother, a father and a guardian respectively.

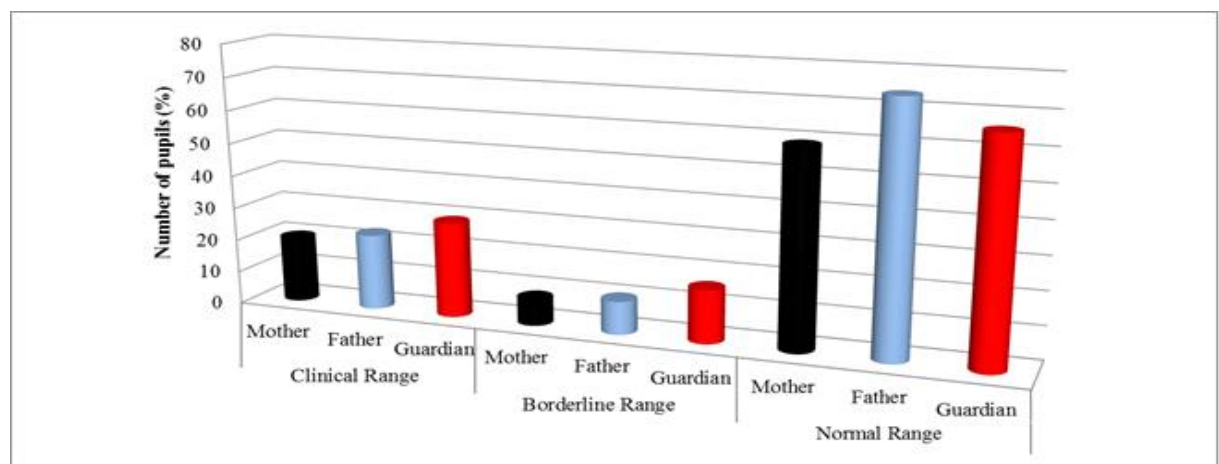
**Table 4. 19:** Single Factor ANOVA for Hyperactivity Score

<b>Groups</b>	<b>Count</b>	<b>Sum</b>	<b>Average</b>	<b>Variance</b>
Mother	118	465	3.02	6.825511
Father	73	278	3.81	7.240487
Guardian	56	169	3.94	1.726948

<b>ANOVA</b>						
<b>Source of Variation</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>P-value</b>	<b>F crit</b>
Between Groups	33.73343	2	16.86671	2.908708	0.05644	3.032816
Within Groups	1414.882	244	5.798697			
<b>Total</b>	<b>1448.615</b>	<b>246</b>				

#### 4.6.3 Peer Effect score



**Figure 4. 20:** Peer Problem Score

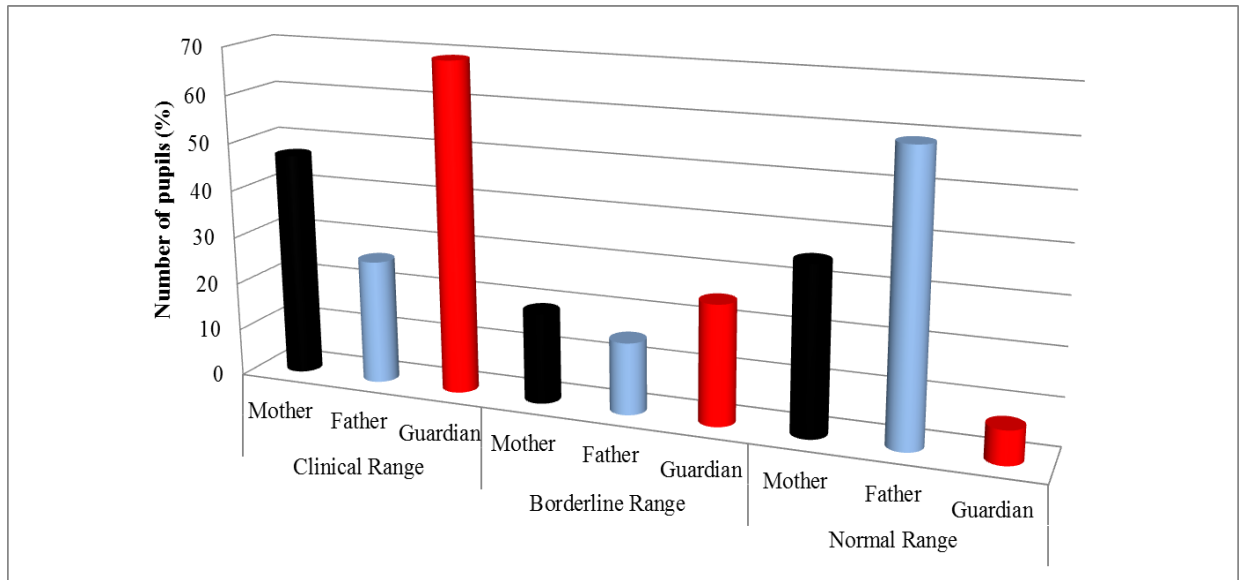
Peer problem scores of respondents living with a mother, a father or a guardian were relatively modest. In children living with their mothers, 20% presented with clinically significant peer problem scores with 8% in the borderline range and 59% in the normal range. Children living with their fathers were relatively worse off with 23% in the clinical range, 10% in the borderline range and 74% in the normal range. At the same time, 29% of the children parented by guardians presented with higher than normal scores, 16% were in the borderline range and 66% in the normal range.

The mean values stood at 3.72, 3.58 and 2.98 for respondents parented by a mother, a father and a guardian respectively. No significant differences was observed between this groups  $p < 0.367$ .

**Table 4. 20:** Single Factor ANOVA for Peer Problem Score

<b>Groups</b>	<b>Count</b>	<b>Sum</b>	<b>Average</b>	<b>Variance</b>			
Mother	118	440	3.728814	2.370274			
Father	73	262	3.589041	3.023212			
Guardian	56	224	4	2.981818			
ANOVA							
<b>Source of Variation</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>P-value</b>	<b>F crit</b>	
Between Groups	5.44398	2	2.72199	1.007849	0.366518	3.032816	
Within Groups	658.9933	244	2.700792				
Total	664.4372	246					

#### 4.6.4 Total difficulty score



**Figure 4. 21:** Total Difficulty Score

A relatively large number of respondents' parented mother, father or guardians had relatively high total difficulty scores. Of the children parented by mothers 47% had clinically significant total difficulty scores, 19% were in the borderline range and 35% in the normal range. Similarly, 26% of the respondents parented by a father had clinically significant total difficulty scores, 15% were in the borderline range and 59% were in the normal range. In the sub-group parented by a guardian, 69% (n=39) of the respondents had higher than normal total difficulty scores, 25% were in the borderline range and 7% in the normal range. The mean in this sample were 20.7, 23.7 and 31.7 in children parented by mothers, fathers and guardians respectively. The difference in the total difficulty scores between the three groups was significant ( $p > 0.00$ ).

**Table 4. 21:** Single Factor ANOVA for Total Difficulty Score

<b>Groups</b>	<b>Count</b>	<b>Sum</b>	<b>Average</b>	<b>Variance</b>		
Mother	118	2437	20.65254	41.30559177		
Father	73	1732	23.72603	77.6738965		
Guardian	56	1777	31.73214	248.5996753		
<b>ANOVA</b>						
<b>Source of Variation</b>	<b>SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>P-value</b>	<b>F crit</b>
Between Groups	4674.431	2	2337.216	23.6648	4.042E-10	3.0328
Within Groups	24098.26	244	98.76335			
Total	28772.69	246				

#### 4.6.5 Correlational matrix expressing the relationship between effective factors on the SDQ total problem Scores

The correlations of the various effective factor items to the total difficulty score ranged from moderate to high ( $r = 0.4 - 0.90$ ). The item correlations were highest on the conduct problem ( $r = 0.90$ ), followed by emotional problem scale ( $r = 0.78$ ) and hyperactivity ( $r = 0.68$ ) respectively. The lowest were peer problem scale ( $r = 0.43$ ) and prosocial scale ( $-0.11$ ). The correlations were calculated by the Spearman correlation coefficient.

**Table 4. 22:** Correlational Matrix between effective factors

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>1. Emotional Symptoms</b>	1					
<b>2. Conduct problems</b>	0.636	1				
<b>3. Hyperactivity</b>	0.683	0.560	1			
<b>4. Peer Problem</b>	0.023	0.230	0.225	1		
<b>5. Prosocial Behaviour</b>	0.050	-0.083	-0.033	-0.312	1	
<b>6. Total Difficulty</b>	0.782	0.901	0.430	0.433	-0.106	1

**Table 4. 23: Multinomial Logistic Regression Results of Some Effective Factors on SDQ Total Problem Scores**

Characteristics		Std error	t	95%CI for coefficient		F	p-value	R <sup>2</sup>	ΔR2
				Lower	Upper				
Sex	Male	0.4978	1.81	-6.679	2.489	226.5	0.00064*	0.987	0.99
	Female	0.056	15	0.664	1.021				
Age (Year)	6-9 years	1.3804	-0.39	-6.43	5.348	39.58	0.0246*	0.975	0.987
	10-13 years	1.418	1.6	-3.82	8.383				
	14 – 17 years	1.38	-2.55	-9.47	2.408				
Nature of Parents Relationship to Child	Father	0.83	0.62	-3.09	4.129	666.8	0.0015*	0.89	0.99
	Mother	0.626	1.69	-1.6	3.755				
	Guardian	-1.155	-0.35	-2.1	1.75				
Parents or Guardian Employment Status	Employed	0.077	16.4	1.019	1.511	267.8	0.00049*	0.98	0.99
	Unemployed	0.53	-2.28	-2.94	0.483				

\*Statistically significant.

CI = confidence interval

#### 4.7 Summary of Results

**Table 4. 24:** A summary of socio-demographic variables for children and their psychosocial impacts

Determinants of psychosocial effects		Emotional problem		Conduct problem		Hyperactivity		Peer problem		Total Difficulty	
		% & Mean	P values & total %	% & Mean	P values & total %	% Mean	P values & total %	% Mean	P values & total %	% Mean	P values & total %
Sex	Male (n= 94)	36% (5.7)	0.0024*	59% (3.5)	0.02*	15% (3.3)	0.038*	29% (3.8)	0.34	30% (16.2)	(35% ) 0.03*
	Female (n= 154)	54% (6.4)		37% (4.0)		23% (3.3)		21% (3.7)		38% (18.1)	
Age	6-9 (n = 61)	49% (6.1)	0.32	50% (3.8)	0.32	11% (2.9)	0.013*	23% (3.9)	0.84	51% (11)	>0.00*
	10-13 (n=118)	50% (6.3)		37% (4.0)		18% (3.9)		24% (3.7)		32% (17)	
	14-17 (n=68)	54% (5.8)		54% (3.5)		16% (4)		25% (2.3)		39% (11)	
Parents employment status	Employed (n= 78)	17% (5.8)	0.19	18% (3.5)	0.10	17% (3.7)	0.5	18% (3.8)	0.8	16% (13)	0.00097*
	Unemployed (n= 169)	45% (6.2)		37% (3.9)		15.4% (3.5)		42% (3.7)		44% (15)	
Nature of relationship to parent	Mother (n=118)	31% (6.3)	0.29	31% (3.8)	0.84	14% (3.02)	0.06	20% (3.7)	0.37	47% (20)	p>00*
	Father (n = 73)	23% (5.8)		16% (3.9)		15% (3.81)		23% (3.6)		29% (23)	
	Guardian (n = 56)	16% (6.2)		12% (3.7)		23% (3.9)		29% (4)		69% (31)	

\*Statistically significant



## CHAPTER FIVE: DISCUSSION

### 5 Introduction

In this section, the results generated are discussed. The findings/results from public data are discussed under several sub-sections including emotional problems, conduct problem, peer problems, hypersensitivity and total difficulty. In the subsequent section, the conclusion and recommendation will be presented.

#### 5.1.1 Discussion of Results

This research attempts to address some of the gaps in the existing literature on child mental health in rural, Kenya. In this study, HIV/AIDS affected children reported high rates of psychological problems, especially behavioral difficulties including emotional problems, conduct problems and, to a modest degree, peer and hypersensitivity problems. These findings are consistent with several surveys which have suggested that Children affected by HIV/AIDS are not able to have normal childhood (Rotheram-Borus et al. 2005; Pequegnat et al. 2001; Schuster et al. 2000). More importantly, it is consistent with a study carried out in a neighboring County within the same province which noted that children living with parents infected with HIV/AIDS, children orphaned by AIDS, and children whose parents died of causes other than AIDS, showed similarly higher symptoms of internalizing symptoms including: depression, anxiety and social withdrawal than non-orphaned children whose parents are not known to be infected with HIV/AIDS (Puffer et al., 2012). This finding points to the possibility, highlighted previously by Curry & Golfeto (2003) that family process changes including disruptions to parent-child relationships, non-or-reduced parental guidance, changes in parental moods, and perhaps socioeconomic conditions that characterize both orphaned families and those with sick parents more accurately could account for higher rates of child conduct problems than the much touted parental absence hypothesis.

Another important finding in this study is that the prevalence of different problem domain (e.g. emotional problems) was relatively higher compared to other studies conducted elsewhere (Mullick & Goodman, 2001). However, the results are comparable to the Puffer

(2011) study highlighted above. This suggests that the findings, is not an outlier, but may point to the severity of the problems experienced in the local community.

This study also showed that there is a significant association between sex and all the problem domains (excluding prosocial behaviour) evaluated. More revealing is the finding of a relatively high prevalence of emotional disorders, conduct problem, peer problems and total difficulty scores in girls as compared to boys. To explain the higher prevalence of emotional disorders in girls as compared to boys, Forehand et al. (1998) have argued that this findings can be explained with reference to the fact that girls use more internalizing mechanisms than boys to face problems, hence the high prevalence of emotional problems (e.g. depression and anxiety) among them. However, the findings of this study is inconsistent with other studies which have revealed that boys tend to register higher externalizing problems scores (Hyperactivity and conduct problems) than girls (Puffer, 2011). In the present study, no difference was observed between girls and boys in the hyperactivity subscale while conduct problems was higher in girls. The observed disparity may be due to variation in cultural factors or other hidden variables.

A significant association between age and subscale of hyperactivity and total difficulty score was also uncovered. In general, a relatively high proportion of respondents within the 10-13 age groups were affected compared to the other age sets. However, the mean for peer problems was higher in children within the 6 – 9 age set. This finding is consistent with studies in which age was identified as a specific factor for externalizing problems. Indeed, Muris et al. (2003) found that in the SDQ self-reports, age effect was primarily due to peer problems which was more prevalent in younger children. This finding is also supported by studies which have reported less negative behavior in late adolescents when compared with early and middle age groups (Gavin, 2000).

Employment status of the parent was also associated with differential scores in a number of subscales evaluated. Children with unemployed parents were more affected than children with employed parents. This finding has a number of implications given the fact that employment status can be a proxy for socio-economic status. More importantly, the finding is consistent with other studies which have reported that there is an inverse relationship between

socioeconomic status and emotional and behavioral problems - increased numbers of cases are observed in low socioeconomic strata (Hackett et al., 1999; Rahi et al., 2005). Similarly, financial problems at home, orphanhood, among others have been implicated in the development of emotional and behavioral problems (Peiponen et al., 2006; Rahi et al., 2005).

To explain this phenomenon, researchers have argued that financial problems impart a multidimensional effect, particularly through ill quality care, which ultimately predisposes the child to emotional and behavioral problems. For instance, Rotheram-Borus et al., (2005) have argued that HIV/AIDS infected caregivers must not only cope with their own physical health symptoms, complex medication regimens, stigma and fear of AIDS-related death; but must also care for their family. Consequently, depression is common among caregivers with financial limitations. On the other hand, parental depression is a well-documented predictor of emotional and behavioral disorder among children (Peiponen et al., 2006).

Further nature of the relationship of the child to the caregiver (whether the care giver is the mother father or guardian) also had an impact on the different domains measured by the various subscales. Results showed that the various affective factors – peer problems, emotional problems, and hyperactivity - evaluated were associated with nature of the caregiver's relationship to the child with children living with guardians registering higher scores in the factors evaluated e.g. emotional and total difficulty scores. This finding is consistent with the findings from other studies which have demonstrated similar results (Palmieri & Smith, 2007). For examples, Dubowitz et al (1994) reported that children under kinship care have more behavioral, emotional, and school - related problems than children in general.

A possible explanation for this finding is the fact a child's attachment or affection for the guardian may not be as strong as his/or her attached to a parent, this may predispose the children to emotional or behavioral problems (Riley et al., 2009). Another explanation is the idea that guardianship, especially in Africa, is often undertaken with considerable ambivalence and maybe developmentally off time (especially for grandparents) and unplanned (Smith & Palmieri., 2007). Indeed, the same authors have claimed that some guardians typically show elevated rates of anxiety, irritability, anger, and guilt.

## **CHAPTER 6: CONCLUSION AND RECOMMENDATION**

### **6 Conclusion**

In conclusion, the study demonstrated that children affected by HIV/AIDS in have high self-identified symptoms of depression and anxiety. These findings suggest that the well documented psychosocial problems experienced by HIV/AIDS orphans begin well before orphanhood. More importantly, it points to the fact that the next generation in this community faces significant, currently unaddressed, mental health difficulties, in addition to other physical health challenges. Taking this into consideration, the mental health needs of these children should be an important arena for intervention and as such should be a critical component of the overall health care planning in the County.

#### **6.1 Recommendations**

- The disproportionate number of children affected by parental HIV/AIDS highlights the need for early intervention.
- Teachers, parents, guardians and community at large should be sensitized on the psychosocial needs of affected children.
- There is a compelling need to validate the validity and reliability of the SDQ questionnaire in the local context. This can be accomplished by matching clinical diagnosis and SDQ self-completed version or parent administered version.
- Further data are needed to more definitely clarify the specifics of parental HIV/AIDS status or death on children's mental health. Such studies should evaluate a large number of demographic correlates and should preferably be longitudinal.

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**Appendix 1 : Declaration Form for Students**

**UNIVERSITY OF NAIROBI**

**Declaration of Originality Form**

This form must be completed and signed for all works submitted to the University for Examination.

Name of Student \_\_\_\_\_

Registration Number \_\_\_\_\_

College \_\_\_\_\_

Faculty/School/Institute \_\_\_\_\_

Department \_\_\_\_\_

Course Name \_\_\_\_\_

Title of the work \_\_\_\_\_

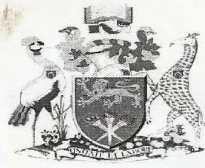
**DECLARATION**

1. I understand what Plagiarism is and I am aware of the University's policy in this regard
2. I declare that this \_\_\_\_\_ (Thesis, project, essay, assignment, paper, report, etc.) is my original work and has not been submitted elsewhere for examination, award of degree or publication. Where other people's work or my own work has been used, this as properly been acknowledged and referenced in accordance with the University of Nairobi's requirements.
3. I have not sought or used the services of any professional agencies to produce this work
4. I have not allowed, and shall not allow anyone to copy my work with the intention of passing it off as his/her own work
5. I understand that any false claim in respect of this work shall result in disciplinary action, in accordance with University Plagiarism Policy.

**Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

## Appendix 2: Ethical Clearance



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8<sup>th</sup> October 2012

Olela Carol Adhiambo  
Reg. No.H57/64242/10  
School of Public Health  
College of Health Sciences  
University of Nairobi



Dear Carol

**RESEARCH PROPOSAL: "TO DETERMINE THE PSYCHOSOCIAL EFFECTS AMONG CHILDREN LIVING WITH H.I.V POSITIVE PARENTS: FOCUS ON KAMAGAK WEST LOCATION, RACHUONYO COUNTY, KENYA"**  
**(P240/04/2012)**

This is to inform you that the KNH/UoN-Ethics & Research Committee (KNH/UoN-ERC) has reviewed and **approved** your above revised proposal. The approval periods are 8<sup>th</sup> October 2012 to 7<sup>th</sup> October 2013.

This approval is subject to compliance with the following requirements:

- a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH/UoN ERC before implementation.
- c) Death and life threatening problems and severe adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH/UoN ERC within 72 hours of notification.
- d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH/UoN ERC within 72 hours.
- e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
- f) Clearance for export of biological specimens must be obtained from KNH/UoN-Ethics & Research Committee for each batch of shipment.
- g) Submission of an *executive summary* report within 90 days upon completion of the study  
This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH/UoN ERC website [www.uonbi.ac.ke/activities/KNHUoN](http://www.uonbi.ac.ke/activities/KNHUoN)

**Appendix 3: Strengths and Difficulties Questionnaire**

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of how things have been for you over the last month.

Name..... Gender .....

Parents employment Status..... Age.....

Number of Children in Family .....

Nature of relationship to Parent: .....

	<b>Not True</b>	<b>Somewhat True</b>	<b>Certainly True</b>
I try to be nice to other people. I care about their feelings			
I am restless, I cannot stay still for long			
I get a lot of headaches, stomach-aches or sickness			
I usually share with others (food, games, pens etc.)			
I get very angry and often lose my temper			
I am usually on my own. I generally play alone or keep to myself			
I usually do as I am told			
I worry a lot			
I am helpful if someone is hurt, upset or feeling ill			
I am constantly fidgeting or squirming			
I have one good friend or more			
I fight a lot. I can make other people do what I want			
I am often unhappy, down-hearted or tearful			
Other people my age generally like me			
I am easily distracted; I find it difficult to concentrate			
I am nervous in new situations. I easily lose confidence			
I am kind to younger children			
I am often accused of lying or cheating			
Other children or young people pick on me or bully me			
I often volunteer to help others (parents, teachers, children)			
I think before I do things			
I take things that are not mine from home, school or elsewhere			
I get on better with adults than with people my own age			
I have many fears, I am easily scared			
I finish the work I'm doing. My attention is good			
I finish the work I'm doing. My attention is good			
Do you have any other comments or concerns?			

Your signature..... Today's date.....

**Thank you very much for your help**

© Robert Goodman, 2005

## Appendix 4: SDQ Data Interpretation

### Scoring the Informant-Rated Strengths and Difficulties Questionnaire

The 25 items in the SDQ comprise 5 scales of 5 items each. It is usually easiest to score all 5 scales first before working out the total difficulties score. Somewhat True is always scored as 1, but the scoring of Not True and Certainly True varies with the item, as shown below scale by scale. For each of the 5 scales the score can range from 0 to 10 if all 5 items were completed. Scale score can be prorated if at least 3 items were completed.

<u>Emotional Symptoms Scale</u>	Not True	Somewhat True	Certainly True
Often complains of headaches, stomach-aches ...	0	1	2
Many worries, often seems worried	0	1	2
Often unhappy, downhearted or tearful	0	1	2
Nervous or clingy in new situations ...	0	1	2
Many fears, easily scared	0	1	2
<u>Conduct Problems Scale</u>	Not True	Somewhat True	Certainly True
Often has temper tantrums or hot tempers	0	1	2
Generally obedient, usually does what ...	2	1	0
Often fights with other children or bullies them	0	1	2
Often lies or cheats	0	1	2
Steals from home, school or elsewhere	0	1	2
<u>Hyperactivity Scale</u>	Not True	Somewhat True	Certainly True
Restless, overactive, cannot stay still for long	0	1	2
Constantly fidgeting or squirming	0	1	2
Easily distracted, concentration wanders	0	1	2
Thinks things out before acting	2	1	0
Sees tasks through to the end, good attention span	2	1	0
<u>Peer Problems Scale</u>	Not True	Somewhat True	Certainly True
Rather solitary, tends to play alone	0	1	2
Has at least one good friend	2	1	0
Generally liked by other children	2	1	0
Picked on or bullied by other children	0	1	2
Gets on better with adults than with other children	0	1	2
<u>Prosocial Scale</u>	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	0	1	2
Shares readily with other children	0	1	2
Helpful if someone is hurt, upset or feeling ill	0	1	2
Kind to younger children	0	1	2
Often volunteers to help others	0	1	2

#### The Total Difficulties Score:

is generated by summing the scores from all the scales except the prosocial scale. The resultant score can range from 0 to 40 (and is counted as missing if one of the component scores is missing).

### Interpreting Symptom Scores and Defining "Caseness" from Symptom Scores

Although SDQ scores can often be used as continuous variables, it is sometimes convenient to classify scores as normal, borderline and abnormal. Using the bandings shown below, an abnormal score on one or both of the total difficulties scores can be used to identify likely "cases" with mental health disorders. This is clearly only a rough-and-ready method for detecting disorders – combining information from SDQ symptom and impact scores from multiple informants is better, but still far from perfect. Approximately 10% of a community sample scores in the abnormal band on any given score, with a further 10% scoring in the borderline band. The exact proportions vary according to country, age and gender – normative SDQ data are available from the web site. You may want to adjust banding and caseness criteria for these characteristics, setting the threshold higher when avoiding false positives is of paramount importance, and setting the threshold lower when avoiding false negatives is more important.

	Normal	Borderline	Abnormal
<b>Parent Completed</b>			
Total Difficulties Score	0 - 13	14 - 16	17 - 40
Emotional Symptoms Score	0 - 3	4	5 - 10
Conduct Problems Score	0 - 2	3	4 - 10
Hyperactivity Score	0 - 5	6	7 - 10
Peer Problems Score	0 - 2	3	4 - 10
Prosocial Behaviour Score	6 - 10	5	0 - 4
<b>Teacher Completed</b>			
Total Difficulties Score	0 - 11	12 - 15	16 - 40
Emotional Symptoms Score	0 - 4	5	6 - 10
Conduct Problems Score	0 - 2	3	4 - 10
Hyperactivity Score	0 - 5	6	7 - 10
Peer Problems Score	0 - 3	4	5 - 10
Prosocial Behaviour Score	6 - 10	5	0 - 4

### Generating and Interpreting Impact Scores

When using a version of the SDQ that includes an "Impact Supplement", the items on overall distress and social impairment can be summed to generate an impact score that ranges from 0 to 10 for the parent-completed version and from 0-6 for the teacher-completed version.

	Not at all	Only a little	Quite a lot	A great deal
<b>Parent report</b>				
Difficulties upset or distress child	0	0	1	2
Interfere with HOME LIFE	0	0	1	2
Interfere with FRIENDSHIPS	0	0	1	2
Interfere with CLASSROOM LEARNING	0	0	1	2
Interfere with LEISURE ACTIVITIES	0	0	1	2
<b>Teacher report</b>				
Difficulties upset or distress child	0	0	1	2
Interfere with PEER RELATIONSHIPS	0	0	1	2
Interfere with CLASSROOM LEARNING	0	0	1	2

Responses to the questions on chronicity and burden to others are not included in the impact score. When respondents have answered "no" to the first question on the impact supplement (i.e. when they do not perceive the child as having any emotional or behavioural difficulties), they are not asked to complete the questions on resultant distress or impairment; the impact score is automatically scored zero in these circumstances.

Although the impact scores can be used as continuous variables, it is sometimes convenient to classify them as normal, borderline or abnormal: a total impact score of 2 or more is abnormal; a score of 1 is borderline; and a score of 0 is normal.