

**The Mental Health of Orphans and Vulnerable Children within
the context of HIV/AIDS in Ghana**

BY

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ABSTRACT

Background: The HIV/AIDS epidemic has contributed to a drastic increase in the number of orphans and vulnerable children in sub-Saharan Africa. However, little is known about the mental health of these children in low prevalence areas such as Ghana. The thesis investigated the relationship between orphanhood, parental HIV/AIDS status and mental health. It further examined the mediating effects of identified risk and protective factors on the relationship between orphanhood/parental HIV/AIDS status and psychological difficulties. Finally, the thesis identified pathways through which HIV/AIDS impacts children by exploring the interactive and cumulative effects of the various risk and protective factors on psychological difficulties.

Method: The thesis employed cross-sectional, quantitative interviews that involved 291 children aged 10-18 years and their caregivers that compared children who have lost their parents to AIDS, those who have lost their parents to other causes, those who are living with HIV/AIDS-infected caregivers and children from intact families in the Manya Krobo district in Ghana. ANOVAs, T-tests, General Linear Models, Log-linear Analyses, Chi-Squares and Bivariate Correlations were used to analyze the data that were obtained from both the children and their caregivers.

Results

After controlling for relevant socio-demographic factors, both children and informants' reports showed that children orphaned by AIDS and those living with infected parents showed higher delinquency ($p < .01$), peer problems ($p < .001$), hyperactivity ($p < .01$) and lower self esteem ($p < .001$) than other orphans and children from intact families. AIDS orphans, other orphans and those living with HIV/AIDS-infected parents all reported significantly more depression ($p < .001$) and relationship problems ($p < .001$) than those for intact families. Conduct problems as indicated by informants' reports were generally, significantly higher for orphans and vulnerable children compared to children from intact families. Over 70% of both AIDS orphans and children living with infected parents showed internalising symptoms that were above clinical cut-offs for abnormality.

AIDS orphans and children living with infected parents reported more stigma, abuse, child labour and lower levels of SES and lower perceived social support. These factors independently, strongly mediated the relationship between orphanhood, parental HIV/AIDS status and mental health. The interactive and cumulative effect of engagement

in child labour and being physically abused heightened the risks for depressive symptoms from 38% to 66%. Neglect and psychological abuse increased the risks for symptoms of Reactive Attachment Disorder from 26.6% to 67.3%. The cumulative effect of stigma and either child labour or physical abuse substantially increased the likelihood of delinquency symptoms to approximately 67%.

Conclusion: The findings demonstrated that both AIDS orphans and children living with HIV/AIDS-infected parents showed heightened psychosocial symptoms. The present evidence also highlighted the interactive, cumulative, co-occurrence of contextual factors and HIV/AIDS unique exposures to create heightened vulnerabilities for psychological difficulties among children. The findings call for a comprehensive intervention programme that addresses factors specific to HIV/AIDS and contextual variables.

Table of Contents:

Abstract	2
Table of Content	4
List of Tables	7
List of Charts	9
List of Graphs	10
List of Figures	10
List of Diagrams	11
Acknowledgements	12
Declaration of Authorship	13
Dedication	14
List of Abbreviations	15
Definitions	16
 CHAPTER ONE: INTRODUCTION	 18
1.1 Background	18
1.2 Mental Health of Children Affected by HIV/AIDS	18
1.3 Justification of the Study and Focus of the Thesis	20
1.4 The Concept of orphanhood	23
1.5 A Note on Care Arrangements for OVC in Ghana	24
1.6 Theoretical Framework	25
1.7 The Research Setting	29
1.8 Structure and Content of the Thesis	31
 CHAPTER TWO - LITERATURE REVIEW	 33
2.1 Review Strategy and Papers Included	33
2.2 HIV/AIDS Infections and Prevalence	34
2.3 Statistics on HIV/AIDS and Children	35
2.4 The Psychosocial Wellbeing of Children Affected by HIV/AIDS	36
2.4.1. AIDS Orphans and other Orphans	36
2.4.2 Children living with HIV/AIDS-infected Parents	38
2.5 Discussion of the Review: Methodological Quality Assessment and Appraisal of Previous Studies	40
2.6 Risks and Protective Factors	50
2.6.1 Demographic Factors	50
2.6.2 Poverty and Socioeconomic Factors	50
2.6.3 Domestic Violence and Child Abuse	53
2.6.4 Child Labour	55
2.6.5 Stigma and Discrimination	57
2.6.6 Social Support	58
2.7 Debate on Policy for Action	60
2.8 Verbal Autopsy	61
2.9 Aims and Objectives	62
2.10 Research Questions	63
2.11 Research Hypotheses	64
 CHAPTER THREE – METHODOLOGY	 65
3.1 Research Design and Justification	65
3.2 Ethical Considerations and Approval	68

3.3 Sample Size and Power Calculations	70
3.4 Inclusion Criteria	73
3.5 Exclusion Criteria	73
3.6 Measures	74
3.7 Pilot Study	75
3.8 The Final Instrument Used	77
3.9 Data Collection Process	83
3.9.1 Recruitment Strategy	83
3.9.2 Procedure	84
3.10 Data Entry and Cleaning	86
3.11 Data Analyses' Assumptions	86
3.12 Analyses Strategy	87
 CHAPTER FOUR – SOCIO-DEMOGRAPHIC FINDINGS	 94
 CHAPTER FIVE – SOCIO-DEMOGRAPHICS, ORPHANHOOD AND MENTAL HEALTH	 100
5.1 Association between Socio-demographic Factors and Psychological Outcomes	100
5.2 OVC's Mental Health Outcomes when Controlling for Relevant Socio-demographic Factors	101
5.3 Cross-informant Agreements	122
5.4 Discussion	124
 CHAPTER SIX – SOCIOECONOMIC STATUS AND MENTAL HEALTH	 129
6.1 The Socioeconomic Indicators Used in the Study	129
6.2 Association between OVC and Socioeconomic Indicators	130
6.3 Association between the Socioeconomic Indicators and Psychological wellbeing	131
6.4 Mediating Effect of Perceived Socioeconomic Status on Associations between Orphanhood and Mental Health Outcomes	134
6.5 Discussions	144
 CHAPTER SEVEN – STIGMAN, DISCRIMINATION AND SOCIAL EXCLUSION, MENTAL HEALTH	 147
7.1 Differences between OVC groups on Stigma and Traumas	147
7.2 Association between Stigma and Community Traumas, and Psychological Outcomes	147
7.3 Mediating Effect of HIV/AIDS related Stigma and Discrimination	148
7.4 Discussions	161
 CHAPTER EIGHT – SOCIAL SUPPORT AND MENT HEALTH	 164
8.1 Differences between OVC groups on Social Support	164
8.2 Association between Perceived Social Support and Psychological Outcomes	165
8.3 Mediating Effects of Perceived Social Support	165
8.4 Discussions	174
 CHAPTER NINE – CHILD MALTREATMENT AND MENTAL HEALTH	 181
9.1 Differences between OVC groups on Maltreatment	181

9.2 Association between the Psychological Outcomes, and Domestic Violence and Maltreatment	182
9.3 Mediating Effects of Child Maltreatment	186
9.4 Discussions	193
 CHPATER TEN – CHILD LABOUR AND MENTALHEALTH	 199
10.1 Differences between OVC groups on Child Labour	199
10.2 Association between Child Labour and Psychological Outcomes	200
10.3 Mediating effects of Child labour on Associations between Orphanhood and Mental Health Outcomes	203
10.4 Discussion	208
 CHAPTER ELEVEN – INTERACTION EFFECT OF RISK AND PROTECTIVE FACTORS	 213
11.1 Depression	213
11.2 Reactive Attachment Disorder (RAD)	220
11.3 Delinquency	224
11.4 Self esteem	230
11.5 Discussion	235
 CHAPTER TWELVE – IMPLICATIONS OF RESEARCH FINDINGS, RECOMMENDATIONS AND CONCLUSIONS	 238
12.1 Summary of Key Research Findings	238
12.2 Limitations and Strengths of the Study	242
12.3 Policy Implications of the Findings from the Present Study	248
12.4 Recommendations for Future Research	250
 REFERENCES	 253
 APPENDICES	 287
Appendix 1: Information Sheet for Parents and Caregivers	288
Appendix 2: Consent Form for Parents and Caregivers	290
Appendix 3: Information Sheet for Children	292
Appendix 4: Consent Form for Children	294
Appendix 5: Ethical Clearance from University of Glasgow	296
Appendix 6: Ethical Clearance from Ghana Health Service	298
Appendix 7: Children’s Self-report Questionnaire	299
Appendix 8: Parents’ and Caregivers’ Questionnaire	306
Appendix 9: Mac-Arthur Ladder of Socio-economic Status	313
Appendix 10: Inclusion Criteria Checklist	314
Appendix 11: Verbal Autopsy and HIV/AIDS Status Checklist	314
Appendix 12: Assessment of Research Methodological Quality Checklist	315
Appendix 13: Methodological Quality Rating Scale Categorisation	317
Appendix 14: Literature Search Words/List	318

List of Tables

Table 2.1: Empirical Quantitative studies on orphans and vulnerable children in developing countries	43
Table 3.1: Framework of the Vulnerability and Psychological Wellbeing Questionnaire component	75
Table 3.2: Summary of measures used	78
Table 4.1: Characteristics of the entire sample of participants	98
Table 4.2: Differences between orphanhood groups on demographic factors	99
Table 3: Associations between socio-demographic factors and psychological outcomes	103
Table 4: Young people's self-report: Adjusted Mean (99% Confidence Interval) of Psychosocial Measures among Four Groups of Children	107
Table 5: Informants Report: Estimated/Adjusted Mean (99% Confidence Interval) of Psychosocial Measures among Four Groups	108
Table 6A: (MODEL 1): Children self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, without controlling for socio-demographic cofactors	113
Table 6B: (MODEL 2): Children self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors	114
Table 7: (MODEL 1) Informants Reports: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, without controlling for socio-demographic cofactors	120
Table 8 (MODEL 2): Informants Reports: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, controlling for relevant socio-demographic cofactors	121
Table 9: Comparisons of Scale scores across respondents using Paired Sample Statistics (n = 286)	123
Table 10: Cross-informant correlations (Pearson) for SDQ scores for children and adolescents in the sample	123
Table 11: Young people's self-report: Estimated Mean (99% Confidence Interval) of Psychosocial Measures among Four Groups of Children	132

Table 12: Associations between socio-demographic factors and psychological outcomes	133
Table 13: Young people's self-report (SES): Adjusted Mean (99% Confidence Interval) of Psychosocial Measures among Four Groups of Children	135
Table 14: (MODEL 2): Children self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors and Perceived SES	141
Table 15 (MODEL 2): Informants Reports: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, controlling for relevant socio-demographic cofactors and Perceived SES	142
Table 16: Summary Table of Findings	143
Table 18: Young people's self-report: Orphanhood or Groups differences on Stigma and Community trauma	149
Table 19: Associations between Stigma and community traumas and psychological outcomes using Pearson r	150
Table 20: Young people's self-report (Stigma And Discrimination): Estimated Mean (99% Confidence Interval) of Psychosocial Measures among Four Groups of Children	154
Table 21: (MODEL 2): Young people's self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors and Stigma	155
Table 22 (MODEL 2): Informants Reports: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, controlling for relevant socio-demographic cofactors and Perceived SES	156
Table 23: Summary Table of Findings	160
Table 24: Young people's self-report: Group differences on Social Support	169
Table 25: Associations between perceived social support and psychological outcomes	170
Table 26: (MODEL 2): Children self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors and social support	171
Table 27 (Informants Reports): Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an	

HIV/AIDS-infected parents, and psychological outcomes, controlling for relevant socio-demographic cofactors and Perceived Social Support	172
Table 27A: Summary Table of Findings	173
Table 28: Young people's self-report: Orphanhood or Groups differences on Domestic Violence and Maltreatment	183
Table 29: Comparisons of Scale scores across respondents using Paired Sample Statistics (n = 286)	184
Table 30: Bivariate Pearson r Associations between Domestic Violence and Maltreatment, and psychological outcomes	185
Table 31: Children self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors and Domestic Abuse and Maltreatment	190
Table 32: Informants Reports: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, controlling for relevant socio-demographic cofactors, Domestic Abuse and Maltreatment	191
Table 33: Summary Table of Findings	192
Table 34: Young people's self-report: Orphanhood or Groups differences on Child Labour	201
Table 35: Bivariate Pearson r Associations between Child Labour and psychological outcomes	202
Table 36: Children self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors and Child Labour	206

List of Graphs

Graph 5.1: Comparing groups on proportions of children with clinical-range scores for total difficulties (children self report;)	106
Graph 5.2: Comparing groups on proportions of children with clinical-range scores for total depression (children self report;)	110
Graph 5.3: Comparing groups on proportions of children with clinical-range scores for conduct problems (children self report)	112
Graph 5.4: Comparing groups on proportions of children with clinical-range scores for peer problems (children self report)	116
Graph 5.5: Comparing groups on proportions of children with clinical range	

scores for hyperactivity (children self report)	118
Graph 11.1: Interaction among scoring above the cut-off for likely depression, stigma and physical Abuse	216
Graph 11.2: Interaction among scoring above the cut-off for likely depression, physical abuse and paid labour	217
Graph 11.3: Interaction among scoring above the cut-off for likely depression, neglect and orphanhood	218
Graph 11.4: Interaction among scoring above the cut-off for likely depression, orphanhood, paid labour and physical abuse	219
Graph 11.5: Interaction among Neglect, Psychological Abuse and risks of scoring above the mean for likely RAD	222
Graph 11.6: Interaction among scoring above the mean for likely RAD, neglect and orphanhood	223
Graph 11.7: Interaction among scoring above the mean for likely delinquency, psychological abuse and caring duties	226
Graph 11.8: Interaction among scoring above the mean for likely delinquency, physical abuse and paid labour	227
Graph 11.9: Interaction among scoring above the mean for likely delinquency, stigma and paid labour	228
Graph 11.10: Interaction among scoring above the mean for likely delinquency, stigma and physical abuse	229
Graph 11.11: Interaction between physical abuse, neglect and self esteem	232
Graph 11.12: Interaction among low self esteem, physical abuse and paid labour	233
Graph 11.13: Interaction among paid labour, orphanhood and low self esteem	234

List of Figures

Figure A: Bronfenbrenner's Ecological Framework	26
Figure B: Circles of care for orphans and vulnerable children by Richter, Foster and Sherr (2006): (an adaptation of the Bronfenbrenner's Ecological model)	28

List of Diagrams

Diagram 1: The Research Process of the Present Study	67
Diagram 3: A flow chart of Response of Participation	72
Diagram 4: Mediation model for Socioeconomic-related factors and orphanhood by AIDS based on Sobel test	139
Diagram 5: Mediation model for Socioeconomic-related factors and orphanhood by other causes based on Sobel tests	140
Diagram 6: Mediation model for Socioeconomic-related factors and living with HIV/AIDS-infected parent(s) based on Sobel tests	140
Diagram 7: Mediation model for HIV/AIDS-related Stigma and orphanhood by AIDS based on Sobel tests	158
Diagram 8: Mediation model for HIV/AIDS-related Stigma and orphanhood by other causes based on Sobel tests	159
Diagram 9: Mediation model for HIV/AIDS-related Stigma and living with HIV/AIDS-infected parent(s) based on Sobel tests	159
Diagram 10: Mediation model for Social Support-related factors and orphanhood by AIDS based on Sobel tests	177
Diagram 11: Mediation model for Social Support-related factors and orphanhood by other causes based on Sobel tests	178
Diagram 12: Mediation model for Social Support-related factors and living with HIV/AIDS-infected parent(s) based on Sobel tests	178
Diagram 13: Mediation model for Child Abuse-related factors and orphanhood by AIDS based on Sobel tests	195
Diagram 14: Mediation model for Child Abuse-related factors and orphanhood by other causes based on Sobel tests	196
Diagram 15: Mediation model for Child Abuse-related factors and living with HIV/AIDS-infected parent(s) based on Sobel tests	196
Diagram 16: Mediation model for Child Labour-related factors and orphanhood by AIDS based on Sobel tests	210
Diagram 17: Mediation model for Child Labour-related factors and orphanhood by other causes based on Sobel tests	210
Diagram 18: Mediation model for Child Abuse-related factors and living with HIV/AIDS-infected parent(s) based on Sobel tests	210

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Declaration of authorship

All of the work reported in this thesis was designed, conducted, analysed and written up by the author. I therefore declare that the contents of this thesis are my own original work.

I hereby declare that I am the sole author of this thesis, except where the assistance of others has been acknowledged.

This thesis has not been submitted in any form for another degree or professional qualification.

The following presentations have been made based on material contained in this thesis:

1. CHALLENGING STIGMA: *A conference on research and action against HIV/AIDS stigma and discrimination in Cape Coast, Ghana, Oct 18-20, 2010*
2. Psychological wellbeing of AIDS orphans and vulnerable children: A Review, *Published in the book of abstracts of the XVII International AIDS 2008 Conference, August 3rd – 8th, 2008, Mexico City, Mexico.*

Dedication

This thesis is dedicated to my parents, whose unfaltering love, encouragement and support over many years has always been a great inspiration.

LIST OF ABBREVIATIONS

AIDS – Acquired immunodeficiency syndromes
IPEC – International Programme on the Elimination of Child Labour
CBO – Community based organisation
GAC – Ghana Aids Commission
DHS – Demographic and Health Survey
GHS – Ghana Health Service
GSS – Ghana Statistical Service
ART/ARVT – Antiretroviral therapy
HIV - Acquired immunodeficiency virus
GHS/ GAC - Ghana Statistical Service and Ghana Aids Commission
NGO – Non-governmental organisation
SES – Socio-economic Status
OVC – Orphans and vulnerable children
RAD – Reactive attachment Disorder
UN – United Nations
UNAID – United Nations Program for HIV and AIDS
UNAIDS – United Nations Agency for International Development
UNICEF – United Nations Children Education Fund
WHO – World Health Organisation

DEFINITIONS

Children – A child, although primarily defined by age, is difficult to define. It is not an absolute state of development and also has cultural, legal and political dimensions. For the purpose of this study it refers to all those who are 18 years and below as suggested by UNICEF (UNICEF 2004).

Orphan -This term has its own difficulties, since it has no implicit definition or clear statement of inclusion or exclusion. It therefore, works as a theoretical construct, but requires explanation and definition. The most accepted definition of an orphan is a child who has lost both parents through death. UNAIDS defines an orphan as a child under 15 years of age who has lost his/her mother (maternal orphan) or both parents (double orphan) to AIDS (UNAIDS 2005). The term in the present study refers to a child who is bereft of at least one parent to death.

Vulnerable children - There are varying degrees of vulnerability, depending on the situation of the child as several factors may contribute to a child's vulnerability adding to the cumulative distress that the child carries. World vision (2002) listed some identities, such as children who live in a household in which one person or more is ill, dying or deceased; children whose caregivers are too ill to continue to look after them; and children who live with very old or frail caregivers. In the present study the term is used to identify children who are living with HIV/AIDS-infected parent(s) or caregiver(s).

Orphans and vulnerable children – used to identify a child who is 18 years or below and has either lost at least a parent or is living with HIV/AIDS-infected parents.

AIDS-orphans – Children who have lost at least one parent to AIDS. The term is used interchangeably as children orphaned by AIDS or AIDS-orphaned children.

Other orphans – used to identify children who have lost at least one parent through causes other than AIDS. In the present thesis the term is synonymous with orphans of other causes as well as children orphaned by non-AIDS causes

Non-orphans – refers to children from families without any known presence of HIV/AIDS-infection or parental death in general. The term is used interchangeably with children from intact families or simply as comparison children.

Mental Health Outcomes – refers to participants' score on standardised measurement scales assessing psychosocial functioning and symptoms such as depression, self-esteem, delinquency, Reactive Attachment Disorder, conduct problems, peer problems, conduct problems and pro-social behaviours.

Children affected by HIV/AIDS – both AIDS orphans and children living with HIV/AIDS-infected parent (s).

Orphanhood types or groups – the 4 categories of the children who participated in the study, i.e., AIDS orphans, other orphans, non-orphans and children living with HIV/AIDS-infected parent (s).

CHAPTER ONE - INTRODUCTION

1.1 Background

All children need healthy relationships with their parents. These have essential long-lasting consequences for their health and wellbeing but children affected by HIV/AIDS experience compromised attachment relationships (Messer et al 2010). By the end of 2010, the world's worst public health challenge, the HIV/AIDS pandemic has claimed 35 million lives whilst 34 million others are currently living with the disease (UNAIDS 2011). Over 14 million children have lost one or both parents to the disease and a further 25 million children are living with parents or adults who are HIV/AIDS-infected (UNICEF 2008). Presently, adults constitute those mostly infected with and dying of HIV/AIDS: about 90% of HIV/AIDS cases and deaths are found among people between the ages of 20-49 years. This demographic stratum incidentally happens to be the childbearing and child rearing age. The lack of access to antiretroviral treatment and the protracted and latent nature of HIV/AIDS means that increasing numbers of children will have to spend much of the childhood years with an infected parent or as an orphan (Cluver et al 2007, Robson 2004). Parental illness or loss of parents permeates all aspects of a child's life and often marks the beginning of a drastic change in their lives.

1.2 Mental Health of Children Affected by HIV/AIDS

Parental deaths and illnesses are childhood traumatic events that are associated with several negative physical and psychosocial health problems (Guterman, Cameron & Hahon 2003). In the case of HIV/AIDS the impact on children could be worse because HIV/AIDS is not only a medical disease but also a social, political, economic and a highly stigmatized phenomenon (Booyesen 2002, Nattrass 2005). However, there is a scarcity of reliable empirical data on the mental health of orphans and vulnerable children in the context of HIV/AIDS epidemic. Cluver, Gardner & Operario (2007) bemoaned the limited, grey and scattered nature of available evidence on children affected by HIV/AIDS. This notwithstanding there is a growing body of knowledge on the mental health of these children over the past 5 years. Gilborn et al (2001) and Wolde-Yohannes (2005) identified erosion of existing support networks, limited educational systems, increasing poverty, exploitation by adults and absence of parental guidance and protection as the needs and

challenges confronting children within the context of HIV/AIDS epidemic. The ability of children to survive, mature and thrive as normal functioning adults is significantly threatened by the presence of HIV/AIDS in the communities (Traube et al 2010).

Describing the situation of orphans and vulnerable children, UNICEF (2004b) recounted that they are struggling to cope with significant loss, poverty, hardship, poor psychological functioning, stigma and discrimination, violence, economic exploitation and are at heightened risk for their own mortality. Lin, Zhao, Li et al (2010) suggested that AIDS orphans and those living with infected parents suffer elevated levels of psychological difficulties and that perceived stigma, lower SES, child labour and abuse might put them at additional risk for psychological disorders.

In the context of HIV/AIDS, children are found to suffer anxiety, worrying and fear during parental infection and to express trauma and grief after parental death (Foster & Jiwli 2001; Foster et al 1997; Poulter 1997; German 2001). Germann (2001) found that orphans and vulnerable children experience multiple risk factors, vulnerabilities and stressors that lead to self-pity, poor self-esteem and often with accompanying shattered hope concerning the future (Wild 2001). Cluver, Gardner & Operario (2007) found that orphans have behavioural and conduct problems as well as suicide thoughts. Although externalizing behaviours have also been identified, Bray (2003) and Wild et al (2005) argued that children affected by HIV/AIDS are at greater risk of becoming depressed and anxious than of acting out their distress overtly. High levels of depression have been reported among orphans (Traube et al 2010).

Compared to other children, orphans were observed to be more depressed, anxious, less optimistic and to display angry feelings and disruptive behaviours (Segendo & Nambi 1997; Atwine et al 2005; Nyamukapa et al 2008). The depression that orphans and vulnerable children experience can interfere with all aspects of their lives and may lead to energy loss, sadness, weight changes, feeling of worthlessness, difficulty sleeping or oversleeping, loss of interest in social activities and suicidal thoughts or thoughts about death (Foster & Williamson 2000). It has also been suggested that stigma associated with HIV/AIDS impacts on available social support (Fang et al 2009).

Most of these studies, however, are unable to establish if the AIDS-related cause of death of parents confers effects additional to those of parent-bereavement because they compared the plight of so-called AIDS orphans with non-orphaned children only, without a

comparison group of children orphaned by causes other than AIDS. In addition, it has not been established whether or not the impacts of HIV/AIDS on children start far before they are orphaned because prior designs did not include children living with parents who are infected with HIV/AIDS (exceptions: Wild, Flisher, Laas, & Robertson, 2006; Cluver 2007 PhD thesis, Cluver et al 2007a, Cluver et al 2007b, Doku 2009, Delva, Vercoutere, Loua, 2009, Cluver et al 2009, Zhao et al 2011, Lin et al 2010). Although children living with HIV/AIDS-infected parents account for 20% of all the children population in Africa (UNAIDS/UNICEF/USAIDS 2004), this particular group of vulnerable children has rarely been studied. Furthermore, this evidence almost entirely came from urban towns in Southern and Eastern Africa and other countries with high HIV/AIDS prevalence (the so called hardest hit locations of the HIV/AIDS epidemic) with only a few from countries with low or moderate prevalence rates such as Ghana. This prompted the call from Barnett and Clement (2005) for work on impacts of HIV/AIDS on children to look further than Southern Africa and the hardest hit countries. Besides, the findings from these previous works suffered some methodological weaknesses including the utilisation of convenient sampling (e.g. Makame et al 2002, Wild et al 2006, Cluver & Gardner 2006), small samples that were often less than 100 (e.g. Chao et al 2010, Atwine et al 2005, Cluver & Gardner 2006, Xu et al 2010, Zhao et al 2010b, Poulter et al. 1996, Makame et al 2002, Segendo & Nambi 1997, Manuel et al 2002), variations in the use of measurement scales and tools that make comparison across studies difficult (including Trusting Relationship Questionnaire, Centre for Epidemiological Studies Depression Scale for Children, Children's Loneliness Scale, Trauma Symptom Checklist for Children, Multidimensional Scale of Perceived Social Support, Beck Youth Inventories, SDQ, CDI, CMA-Revised, SDQ, Child PTSD checklist, CES-DC, Depression and Anxiety scales adapted from WHO self-report questionnaire, CBI, Beck Hopeless Inventory, Rosenberg Self-esteem Scale, Future Expectation Scale, Hopefulness about the Future, Perceived Control over Future scale and the LITE-S) and limited information on response rates (e.g. Pouter et al 1996, Zhao et al 2010, Manuel et al 2002, Doku 2009, Makame et al 2002).

1.3 Justification of the Study and Focus of the Thesis

The current thesis addresses the mental health of HIV/AIDS affected children in Ghana and differs from earlier works in many ways. First, the study focused on children affected by HIV/AIDS at an early stage of the epidemic in a low prevalence country. Much of the available evidence on the mental health of children affected by HIV/AIDS in developing countries comes from Southern African countries. These countries represent a matured

HIV/AIDS epidemic and soaring prevalent rates. There is lack of scientific research on these issues from West African countries and other regions with low prevalence rates and early-stage epidemic. Lorentzen & Morris (2003) lamented that this presents serious challenges to efforts in understanding and subsequently designing effective intervention strategies. Furthermore, psychological systems are not context free: the experience and expression of psychological symptoms are rooted to specific contexts. It is not appropriate to extrapolate findings from these contexts to countries like Ghana with low HIV/AIDS infection rate and young HIV/AIDS epidemic. Childhood and orphanhood are also heterogeneous, social, contextual, cultural constructs (Dawes & Honwana 1998) and so it is wrong to extrapolate findings concerning these variables from one setting to another (Kleinman 1987).

There are sharp political, economic and cultural differences between the hardest hit countries of Southern and Eastern Africa, and Ghana. Rwanda for example has not fully recovered from the impacts of the 1994 genocide and frequently goes through periodic economic depression (Fifi, Sabu and Peter 2010). Many aspects of apartheid struggle still exist within South Africa such as recurrent violence and its associated delinquency and high crime rates. South African culture is also not hostile to the sexual relations of polygamy and extra-marital affairs. Political instability, cultural acceptance of polygamy and multiple sexual relationships, civil and ethnic conflicts all characterise these so called hardest hit countries (Fifi, Sabu and Peter 2010). It seems likely that these unstable environments, on their own, would place children in these areas at heightened risks for psychological problems. Ghana, on the other hand, is a country with a stable economy, stable socio-cultural life pattern with culturally sensitive religious, social and traditional norms. However, premarital sex, polygamy and condom use are regarded as unacceptable and uncomfortable topics; this could place persons and families affected by HIV/AIDS in Ghana at heightened stigmatisation compared to countries in the south. The country is also known for her political stability and is often cited as a model of democracy in Africa (Amanor and Brown 2003). For example, Ghana was the first country in Africa to ratify the UN Convention of the Rights of the Child in 1990 (Quaicoe 2005). Ghana, therefore, is a good environment in which to examine effects of HIV/AIDS that are distinct from major cultural adversities.

Secondly, the geography of the HIV/AIDS is changing rapidly and research must keep up with this flow. The impact of HIV/AIDS on adults as well as children varies according to geographical region. There is an ongoing geographical shift in the HIV/AIDS pandemic

and the distribution of AIDS orphans and children affected by HIV/AIDS (Cluver, Gardner & Operiora 2007). Currently, many patients in countries hardest hit by the disease have access to effective antiretroviral treatment whilst those with single digit prevalence rates are often left out or at best have less than 10% coverage (UNAIDS 2009). Availability of and access to treatment in South Africa and other hard hit countries means that the numbers of AIDS orphans are reducing and more children will now be living with AIDS-infected parents. However, although the HIV/AIDS prevalence in Ghana remains low (2.2%) among the general population (UNAIDS 2006), the actual number of persons infected with the virus and deaths resulting from AIDS are high because of non accessibility of Antiretroviral therapy (ART). Ampofo et al (2004) and UNAIDS (2006) both stated that in Ghana ARVT is available but it is not readily accessible as costs remain prohibitive and unaffordable even with government subsidies. Only 5.9% of people that are in need of ART have access to it (UNAIDS 2011). As a result, the number of AIDS orphans in Ghana has been increasing drastically in recent years (although the prevalence rate is reducing) because people infected with HIV/AIDS die early than their counterparts in the hardest hit countries who have access to ART.

Furthermore, there is sparse literature on HIV/AIDS related stigma in low prevalence countries. Empirical studies in Ghana suggest that AIDS related stigma and discrimination is severe in regions and contexts with low infection and prevalence rates (Koku 2011, Riley & Baa-Odoom 2012). It is reasoned that because the disease's prevalence is low in countries like Ghana and HIV is mainly transmitted through heterosexual affairs, this could increase community intolerance of persons with HIV/AIDS and hence place high stigma on the few people who are infected and their children. In these instances of high stigma, AIDS orphans and children living with HIV/AIDS-infected adults in Ghana could feel more isolated and distressed. Things may well be different in both the hardest hit African countries or in Asia where transmission is mainly through poverty driven blood donation or transfusion. Considering the differences in low/high and early/matured epidemic contexts and the dynamics of stigma, it is probable that the pattern of adjustment of children in low and early contexts would be different from what the literature currently presents. These are all suggestions that it is time for research to look beyond the impact of HIV/AIDS in matured, high prevalence regions; another reason why a study on these children in Ghana is much needed.

1.4 The Concept of Orphanhood

Orphanhood is difficult to define. It is not an absolute state of development and also has cultural, legal and political dimensions. Sherr et al (2008) noted that the current situation is one fraught with a lack of clarity over definitions of orphanhood within the context of HIV/AIDS. The definition of an orphan varies in the literature, basically with regard to age and parental loss. Generally an orphan is defined as a child who has experienced the death of both parents. The UNAIDS defines an orphan as a child under 15 years of age who has lost a mother or both parents (UNICEF/UNAIDS 1999). Most researchers used the UNAIDS definition. Others have increased the age to 18 years (Atwine et al. 2005, Cluver et al. 2006, Nyamukapa 2006). They argued that the UNAIDS use of 15 years was statistical and methodologically linked to the availability of primary data for that age categorization (0-15 years) in most Demographic and Health Surveys. They concluded that this statistical and methodological necessity or convenience should not limit observations that children still have unmet needs beyond 15 years and the fact that most countries have 18 years as the boundary for adulthood. It is also generally accepted among researchers that loss of a father would also place children at heightened vulnerability for psychological distress. Finding in Uganda shows that paternal orphans (children who lost their fathers) are seriously affected than children who lost their mothers (Monk 2000). Consequently, UNAIDS revised its definition, and now refer to any child age 18 and below whose mother or father had died as an orphan (UNICEF/UNAIDS 2009).

Several layers and classification systems for orphans have been identified as attempts to understand their situations (Bicego et al 2003). These include the nature of their carers, namely, extended families, foster parents, child-headed household and institutional care (Nyambedha et al 2003), between paternal, maternal and double orphans (Hunter 1991). And recently, we have orphans caused by AIDS and orphans of other causes (Cluver & Gardner 2006). In the wake of HIV/AIDS epidemic, lack of adequate care service structures and mechanisms led to poor living situations of the increased numbers of children orphaned by AIDS. This prompted academia and service providers to focus on AIDS orphans. However, the nature and dynamic of the HIV/AIDS epidemic and its associated poverty means that focusing on AIDS orphans does not address the full scale of the disease on children (Foster & Williamson, 2000). It is suggested that HIV/AIDS affects families and not individuals and so all children (not only orphans) become vulnerable when the disease enters a household. The tight definition of orphanhood (or orphan) has limited usefulness within the context of HIV/AIDS epidemic. The construct “orphans and

vulnerable children (OVC)” is now used to refer to all children that are affected by HIV/AIDS (UNICEF/UNAIDS 2009). Richter et al. commented that the term OVC allowed for the avoidance of potentially stigmatising labelling (orphans) while ensuring the inclusion of other children in needs and provision (Richter, Foster, & Sherr, 2006). An explicit definition of the construct and boundaries of inclusion or exclusion is a contested issue in the literature. For the purpose of this study, the term orphan refers to a child who is bereft of at least one parent to death whilst OVC is used to identify a child who is 18 years or below and has either lost at least a parent or is living with HIV/AIDS-infected parents.

1.5 A note about Care Arrangements for Orphans and Vulnerable Children in Ghana

Ghana has no working policy on care arrangement for orphans and vulnerable children, especially those affected by HIV/AIDS. The department of Social Welfare developed a Care Reform Initiative (CRI) plan in 2006 that aimed to provide integrated and comprehensive care for OVC and families in Ghana but this has never seen the day of implementation.

It is part of the Ghanaian cultural set-up that children are cared for by traditional kinship systems, fostering and adoption. But increases in their numbers, the nature and dynamics of the HIV/AIDS epidemic and AIDS stigmatization mean that these traditional systems are possibly being overstretched and collapsing (Mensah & Lund 2008). Lack of response from government and the non-existence of policy and regulation have led to the proliferation of orphanages as quick-fix solutions that often lack even basic amenities. However, in the Manya Krobo District, the location for this study and the hardest hit zone in Ghana, there exist a prominent example of traditional care for orphans offered by the Queen Mothers Association. A queen mother is the female equivalent of a chief. She is the traditional female leader of a specified geographical area responsible for the wellbeing of women and often children. Each queen mother takes a specified number of AIDS orphans into her home and raises them as part of her family. These efforts integrate AIDS orphans into the society, avoids stigma and provides the children with a family for their whole lives as opposed to orphanage care (Mensah & Lund 2008). However, since there can be just a few queen mothers per geographical area it means that not many orphans will be captured by this initiative.

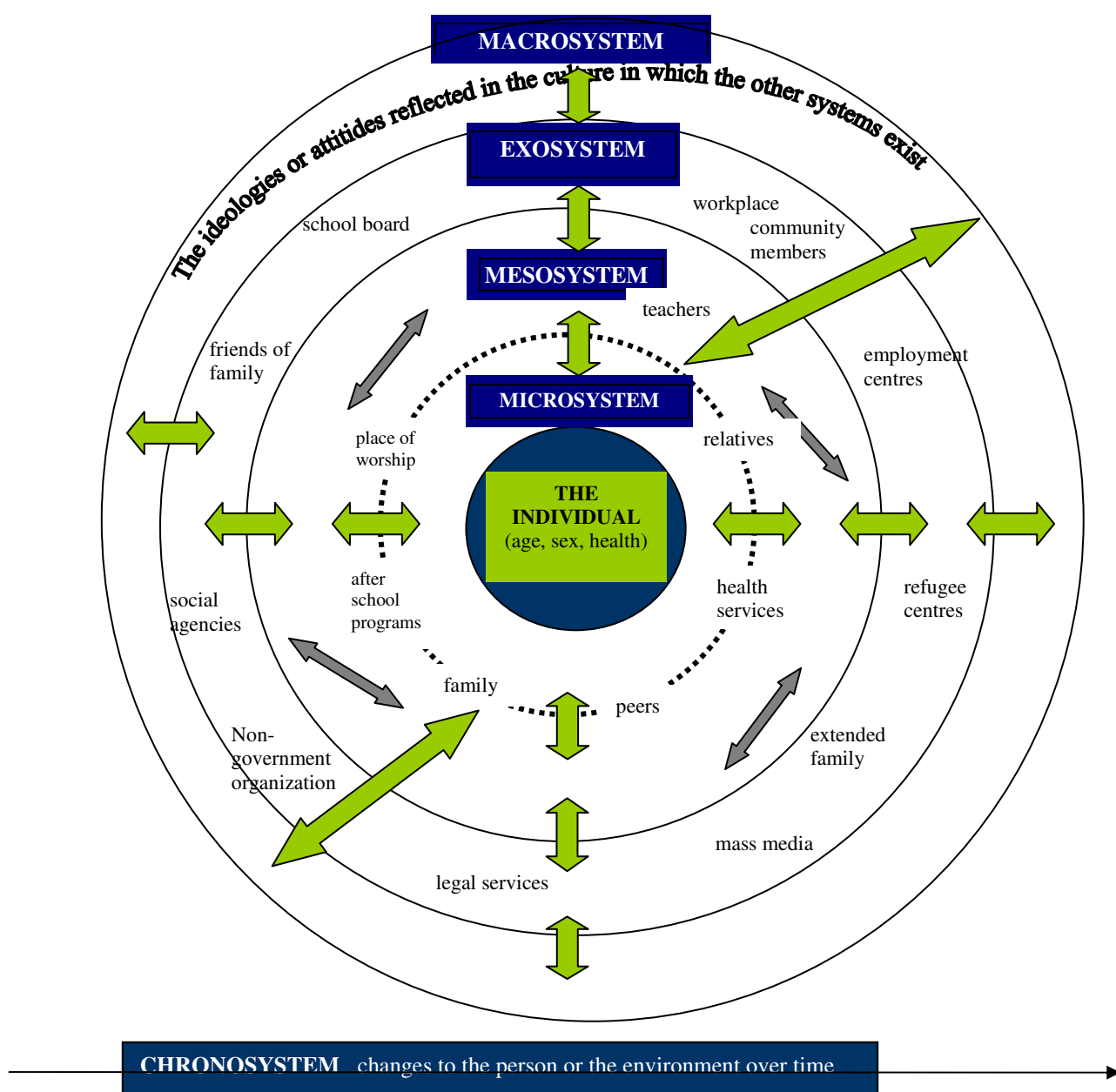
1.6 Theoretical Framework

The present thesis utilizes Bronfenbrenner's Social-Ecological Model as a guiding theoretical framework. The model is used, however, with the caution that no single theory of behaviour is sufficient to explain mental health with its impacting risks and resilience factors. Although Bronfenbrenner's theory has its origin in human development, it is the most widely adopted model in health research. The model can be considered a meta-theory because it combines individual theories (biological and behavioural), interactional theories (attachment and family theories) and social theories (socioeconomic and social support theories) in explaining development and human behaviour. It offers a multidimensional perspective of influences on behaviour and helps to understand the multifaceted nature of risks and resilience factors (Leventhal 2003; Korbin 2003).

Bronfenbrenner's (1979, 1989) model frames human development as a dynamic, mutually reciprocal process. The model focuses on the nature of the interaction between people and their environment. Bronfenbrenner conceptualized development as a multifaceted phenomenon based on interplay between personal, situational and socio-cultural factors. The model proposes influences on development as series of layers or ecological environments, which he noted is a nested arrangement of concentric structures, a social web, mutually interacting and each contained within the next. Each layer has a resulting impact on the next layer. The innermost layer represents the individual, who is then surrounded by differing levels of environmental influences (Bronfenbrenner 1994). The individual is seen as living within a series of 5 interconnected systems or layers conceived as widening concentric circles labeled from the innermost to the outmost as the individual, microsystem, mesosystem, exosystem and macrosystem (see Figure A).

The understanding of such a nested system is that a person's behaviours and development are impacted by the behaviour and development of those with whom he interacts in the social web. That is not all: his behaviours and development also influence those he interacts with. To say it in Bronfenbrenner's own words: "the child not only influences the variety of settings he or she encounters, such as the home, day care centre, school, or playground, but he or she is simultaneously influenced by these environments" (Bronfenbrenner, 1989: pp 17).

Figure A: Bronfenbrenner's Ecological Framework (adapted from Berk 2002)



Factors within the individual layer that influences the child's interaction with the other layers include characteristics related to the child as well as adult factors. These include the child's age, gender, disability as well as the parents' attitudes, alcohol and drug use, ethnicity, marital status and educational level. For children affected by HIV/AIDS, this includes their parents and well as their own HIV/AIDS status and orphanhood. The microsystem entails relational factors that may be associated with mental health behaviours such as parenting style, family environment, family/household size and composition, SES, conflicts and domestic violence, social isolation and interactions among family members. Thus the child's roles, activities, and interactions on a face-to-face basis within specific settings form his microsystem. The exosystem consists of settings beyond the child's

immediate experiences, such as parental work place roles and relationship with co-workers. Nevertheless, this affects the child indirectly. Community contexts in which social relationships are embedded such as schools, neighbourhood, church, peer groups, work places, SES of neighbourhood and child labour are suggested by some researchers to form part of the exosystem (Elder 2007).

Then the mesosystem, found somewhere between the microsystem and exosystem, comprises of those interactions between two or more settings in which the developing child actively participates such as the interconnections between home, school, and neighbourhood. Thus the mesosystem deals with the interaction between two microsystems such as communication and the dynamics in the family either between parental figures or between parents and children. These factors may not directly cause mental health problems but they frequently would contribute to negative patterns of family functioning that may heighten risks for distress. Finally, the macrosystem refers to the culture, values and beliefs of the larger society within which the child lives (Henderson, 1995). The macrosystem cannot be linked to any specific setting but could be seen as what builds the consistencies across the other systems.

The interconnectedness between these nested layers means that any change in one layer would have repercussions in the others (Addison 1992). Bronfenbrenner's ecological model offered a bridge between the fields of sociology and psychology by accounting for multilevel risks and protective factors from the individual to societal levels.

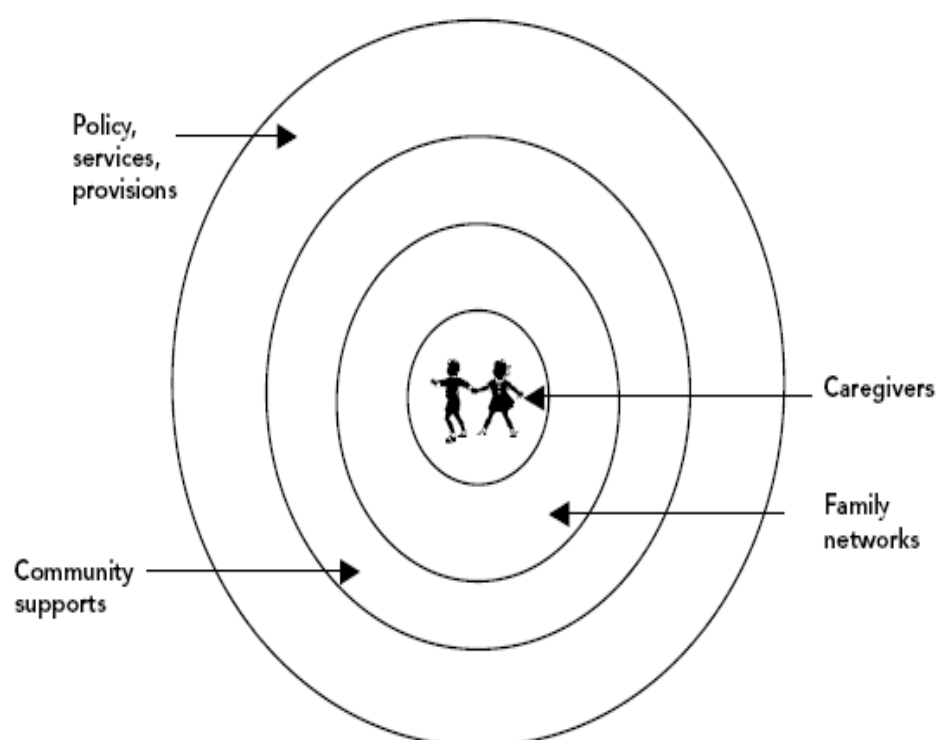
The practical implication of the ecological approach is that a person's development and behaviours, both normal and abnormal, evolve as a product of mutual and interconnected interactions taking place within a social world (Berk, 2002). Essentially, the Ecological model presents 4 key principles that form the guiding framework of the present study: multiple factors have influence within the individual and the environment that influence behaviour; the environments are multidimensional, complex and varied; the individual-environment interactions can be described at varying levels of organization; and finally, the interrelationships between the individual and the environment are dynamic and reciprocal.

Elder (2007) suggested that the model can be tailored to suit particular contexts and specific behaviours. Richter, Foster and Sherr (2006) provided an adapted Bronfenbrenner's framework for the specific context of orphaned and vulnerable children

in investigating risks and resilience factors (see Figure B). In the present study these two models provide an appropriate schematic to investigate the various ecological systems of risks and protective factors of children affected by AIDS for purposes of gaining a comprehensive understanding of the issues affecting their lives. The framework so adopted helped to meet the aim of the research to comprehensively understand the mental health of children affected by HIV/AIDS to inform timely and appropriate interventions. From the perspective of this theory one should expect parental death or HIV/AIDS status to produce changes within part of the social web, system, or ecological environment which in turn should affect the whole system including children's behaviours and development within the family.

The theory, however, is limited in that it cannot explain how and why in some instances, certain influences within the individual or the environment become so powerful and often dominate the ecological systems that the individual lives. Despite this, the model has the capacity to generate broad perspectives that accommodate the influence of environmental factors both closest to and beyond the individual that hitherto have not been considered as affecting human behaviour.

Figure B: Circles of care for orphans and vulnerable children by Richter, Foster and Sherr (2006): (an adaptation of the Bronfenbrenner's Ecological model)



1.7 The Research Setting

The study was conducted in the southern part of Ghana. The Lower Manya Krobo District, one of the 133 administrative districts in Ghana was selected for the data collection. The district, found in the Eastern Region of the country is situated 88 km north-east of Accra (national capital). Currently, it is estimated that the district has 154,301 people, of which approximately 79,047 are females (Lund & Agyei-Mensah 2008). Approximately 70% of the people are of the Krobo ethnicity; one of the main Dangme speaking ethnic groups that inhabit the southern part of Ghana. The study area, the Lower Manya Krobo District, was purposively chosen because within Ghana it has the highest HIV/AIDS prevalence rate of 13.2% than any district since the early 90s (UNICEF 2007). Although the Ghana Health Service (2008) noted that the rate has been reducing since the early 2000s because of the comprehensive campaign instituted by the government, Lund & Agyei-Mensah (2008) observed that the district still has a prevalence rate (8.5%) that is approximately four times the national rate (2.1%). Focusing on one geographical area enhanced homogeneity of data as participants came from one general environment which may contribute to minimise effects of geographical confounding factors that could arise if different areas were sampled.

Some investigators such as Agyei-Mensah (2006) and Sauve et al (2002) suggested that the socio-cultural settings and contexts and the economic status of the Krobos in the district account for the high HIV/AIDS prevalence rates (Teye 2005). The main economic activity of the Krobos is farming but due to shortage of lands, poor rainfall and subsequently low harvests, most of the people are now unemployed or at best underemployed. The majority of the Krobo people consider themselves as Christians (Teye 2005) but traditional beliefs and practices are widespread. The Krobos believe in ancestral spirits and their invincible presence in their daily lives. These spirits, they believe, adore and reward good deeds and bring misfortunes to evil persons in society. Islam and other religious beliefs are also practised in the district but mostly by immigrants who have settled in the district.

Whilst the Krobos practise both Christian and traditional marriages, Teye (2005) observed that it is the latter that is much more significant to the people. In this regard, it is a requirement that Christian marriages must be preceded by traditional marriages. Bride price among the Krobos is the highest in Ghana and involves drinks, clothes and money. It is observed that cohabitation is common among the Krobos because most men cannot afford the high bride price. Another distinct aspect of the culture of the people is that extra

marital affairs on the part of men are an acceptable norm. Similarly, a boy dating more than one girlfriend is considered appropriate to enable him to make a good choice. Females are, however, not allowed to engage in extra marital affairs, and the Krobo girl once married is expected to stay in the marriage irrespective of what happens. This expectation is fuelled by the fact that an adult Krobo lady must present a husband to perform a rite called *yosedofiemi* when any of her parents dies. Teye (2005) explained this clearly: “one other distinct aspect of the Krobo culture that makes marriage so important for women is the traditional practice of *yosedofiemi*, whereby a man must present certain items, including drinks and money, and he must also publicly perform a traditional dance following the death of either the mother-in-law or the father-in-law” p. 70. There is the belief that women of marriageable age who failed to get this performed would not have the blessings of their dead parent(s) or even be punished by their spirits.

Another local characteristic of the Krobo people is the *dipo* – a highly celebrated rite of passage into adulthood for girls. Originally the *dipo* was performed when the young girl had her first menstruation and as such she was required to be a virgin. Those who broke their virginity before the rite are fined heavily involving money, drinks and sheep whilst those who had given birth were banished from the house. The implication is that the *dipo* encourages the girl to maintain her virginity, signifies honour to the girl’s family and marks the beginning of adulthood. Attempts by Christianity, education and modernity to end the *dipo* only succeeded in altering the practise: the Krobos responded by reducing the age when the girls go through the rite to as low as 5 years when the young girls are powerless. It is suggested that the present performance of *dipo* at such tender age is contributing to the high rate of premarital sex among the Krobos. This is because girls who have undergone the rites at such young ages no longer have any motivation to maintain their virginity.

The Krobos like most ethnic groups in Ghana practise the patrilineal system of inheritance where children belong to the man’s family. In this system, only male children inherit landed properties with the expectations that female children would marry and belong to their husbands’ families. One disadvantage of this inheritance system is that females become poor, very dependent on men and subsequently powerless to negotiate for anything including safe sex.

1.8 Structure and content of the thesis

The thesis comprises of 12 chapters. The present chapter provides a brief background and introduction of the research topic and outlines the structure of the rest of the thesis.

A detailed background to the thesis is presented in *chapter 2* via a review of relevant scientific literature and careful examination of other non academic commentaries and policy documents. The review of existing knowledge and literature provided the foundational framework and helped identify specific research aims. The information obtained was also used to generate relevant and specific research questions as well as the formulation of testable hypotheses that were examined in the later empirical sections of this thesis. The chapter also outlined the literature search strategy. The outcome of the review is presented in three subsections, namely, mental health of orphans and vulnerable children in the context of HIV/AIDS epidemic. Lastly, a critical appraisal of the quality of studies examining mental health of children affected by HIV/AIDS as well as risk and protective factors for mental health among these children are outlined.

Chapter 3 deals with the methodology and research approach. It begins by outlining the opportunities provided by conducting either qualitative or quantitative work. The chapter then justifies the choice of a quantitative approach involving data collection from multiple informants. The rest of the chapter presents the research instruments, research setting and access to the sample and discusses how issues about ethics are addressed. It also presents a pilot study conducted to examine the appropriateness of the questionnaire. The chapter concludes with data entry and quality assurances as well as an outline of the strategies for data analyses along with the justification for this.

Chapter 4 presents the socio-demographic characteristics of the sample involved in the study. *Chapter 5* is the first of 7 chapters that present the findings of the quantitative empirical research. The chapter begins by presenting the relationship between socio-demographic factors and psychological outcomes. It then assessed the association between types of orphanhood and psychological outcomes. This is followed by assessment of the relative effect and probable presence of psychological difficulties among orphanhood types after controlling for relevant socio-demographic factors and the findings are discussed. The findings presented in this chapter helped to structure the remaining empirical analyses, each dealing with one of the key risk and protective factors captured in the study.

Chapter 6 presents findings on socioeconomic status. It starts with an examination of 4 kinds of socioeconomic and poverty indicators and their associations with psychological outcomes and demographic factors. The chapter also presents the association between OVC and socioeconomic factors. Finally, the chapter reports the potential mediating effect of socioeconomic status on the association between orphanhood and psychological outcomes after controlling for demographic factors.

Empirical findings on stigma and discrimination are dealt with in *chapter 7*. The chapter explores the differences between the four orphanhood types as regards stigma and discrimination. It then examines the association between psychological outcomes and stigma and discrimination. The chapter then concludes by assessing the potential mediating effect of HIV/AIDS related stigma, discrimination and social exclusion and demographic factors on associations between orphanhood and mental health outcomes.

Chapter 8 explores the availability of and differences in the levels of social support among the four orphanhood types. The association between levels of social support was examined and the potential mediating effect of social support on psychological outcomes was investigated after controlling for demographic factors.

Chapter 9 examined the potential mediating role of domestic violence and child abuse on psychological outcomes among children affected by HIV/AIDS. The potential mediating impact of domestic duties and child labour on psychological outcome was explored in *chapter 10*.

Chapter 11, the final empirical chapter investigated the interaction effects of all the identified key risk and protective factors to establish key pathways that explain how children are impacted by the HIV/AIDS epidemic.

The final *chapter, 12*, draws together the key findings of the thesis. The main findings of the thesis are summarised and the potential contribution of the study to knowledge is discussed. The limitations and strengths of the study are also outlined. Then the implications of the key findings for policy are discussed. Finally, priority areas and recommendations for both further and future research are suggested in relation to a careful evaluation of the methodology, study limitations and coverage of the present study.

CHAPTER TWO - LITERATURE REVIEW

2.1 Review Strategy and Works Included

A bibliographic database using key words of the research area was searched on various data bases, including Medline, PsychINFO and PsycARTICLES from 1980 to 2008. See Appendix 14 for the search terms. This yielded various published studies on mental and psychological well-being of orphans and vulnerable children. The search was automatically updated using Ovid whenever there was a new related publication until December 2011. Searches were done on Google, websites of key NGOs (UNICEF, USAIDS, UNESCO, Action Aid and many other) as well as other opened educational websites, and African Journal Online. Theses and dissertation searches were also searched on British theses database, PhD.com, Dissertation Abstract international. Some useful reports and grey literature were retrieved from HIV/AIDS Conference websites and published books. As part of the review email requests for ongoing studies were also made to key academics who have published papers relevant to the current study. The papers retrieved were filtered to include only articles that met pre-defined criteria. Because mental health and OVC do not represent homogenous and constant constructs, the literature search was operationalized and studies were included if:

- ❖ the study participants involved children between 8 -18 years
- ❖ it was written in English language
- ❖ mental health outcomes included either externalizing (eg Attention Deficit Hyperactivity Disorder, conduct problems) and/or internalizing (eg depression, anxiety) problems
- ❖ mental health was measured as dependent variable
- ❖ the study involved children, adolescents, orphans, AIDS orphans, children affected by AIDS, HIV/AIDS or vulnerable children.

Studies were excluded if they involve:

- ❖ children under 8 or over 18 years. This is in line with the age range (8-18 years) of the present study because of comprehension and literacy issues.
- ❖ intervention studies
- ❖ non-English language
- ❖ quality of life in general

The papers included in the review were evaluated using adapted components of SIGN checklist provided by the Scottish Intercollegiate Guideline Network (SIGN). The SIGN checklist outlines guidelines and criteria for assessing the quality of cross-sectional designs and control studies. The checklist appraised each included paper for internal validity, sampling/selection of participants, control group, assessment of independent variables, assessment of dependent variables, control of all possible confounders, appropriate statistical analysis, participation rates, comparability of subgroups, appropriate interpretation of research findings, source of funding and conflict of interest. The SIGN checklist compares reliably with other established quality appraisal scales such as the National Institute for Clinical Excellence (NICE), CONSORT (Altman et al 2001) and CASP (Critical Appraisal Skills Program, 2006).

2.2 HIV/AIDS Infections and Prevalence

There is considerable evidence to suggest that the HIV/AIDS pandemic is the world's most devastating economic, social and health canker that has rocked the human race. Since the 30 years existence of the HIV/AIDS pandemic, over 70 million people contracted the disease (UNICEF 2010) and by 2010 over 35 million people have died of AIDS (UNAIDS 2011). In 2010, approximately 1.8 million people lost their lives to AIDS and roughly 2.7 million newly infections of the disease were recorded around the world; 390,000 of these infections were among children (UNAIDS, 2010). Although new infections of the disease continue to fall the number is still alarming. Interestingly, the death toll from the disease continues to increase because of low coverage of ART.

Sub-Saharan Africa is the regions heavily affected by the HIV/AIDS epidemic as the disease has devastated the social, economic and cultural framework of societies (UNICEF 2005). The region, with approximately 12% of the world's population, is home to over 68% (23 million) of the people living with HIV/AIDS. The continent also accounted for 70% of all new infections in 2010 (UNAIDS 2011). Approximately 1.4 million of the 1.8 million of the global AIDS deaths recorded in 2010 occurred in sub-Sahara Africa (UNAIDS 2011). Amidst several challenges including low accessibility of ART, AIDS related death is expected to continue to rise within the continent for the next years. These statistics on HIV/AIDS in sub-Sahara Africa earned the continent the hardest hit region of the HIV/AIDS epidemic. This notwithstanding, within the African continent there are notable geographical differences in HIV/AIDS incidence and prevalence, and its

subsequent effects. Southern Africa is the most affected sub-region in Africa and has prevalence rates of double digits in most countries. However, the distribution of HIV/AIDS infection and its impacts is not static over time and geographical location (Cluver et al 2007). Concerning countries in West and Central Africa previously spared double digit infection rates, Cluver et al. (2007) noted that the HIV/AIDS disease is positioned to spread widely in these regions.

Ghana had a national HIV/AIDS prevalence of 3.1% in the early 2000s but continued government efforts seem to have yielded benefits. Ghana with a population of 22 million now has a 2.2% HIV/AIDS prevalence rate based on sentinel site surveys. However, the low prevalence rate for Ghana is misleading in terms of the effect of the epidemic on different population groups and geographical locations; it varies between 1-13% across the various geographical districts (GAC 2010). Additionally, many interested groups have questioned the reliability of these figures and posited that the real figures should be higher. Others have also accused the health sector of skewing the data to meet funding agencies' criteria. Whatever the case may be, Ghana's prevalence rate is likely to be considerably lower than most African countries. Whilst the rate is low, it was estimated that there were about 18000 AIDS deaths recorded in 2007 and approximately 10,000 new infections made in 2010 (UNAIDS 2011). An estimated 267,069 persons live with HIV/AIDS in Ghana out of which 25,666 are children (GHS 2008). Of the 75,348 people living with AIDS that need to be on ART, only 3-5% are accessing it (UNAIDS 2008). Interestingly about 90% of HIV/AIDS cases are found among people between the ages of 15-49 years: the main childbearing and rearing years. . The 2009 Sentinel report recorded 25,531 new infections and 20,313 AIDS deaths were recorded with 2,566 being children (GAC 2009).

2.3 Statistics on HIV/AIDS and Children

Most developing countries including Ghana do not have well established database to keep accurate records of children affected by HIV/AIDS and so these figures are based on estimation equations that may not necessarily be accurate. Furthermore, these estimates and projections should be taken as broad indications because childhood, orphans and AIDS orphans vary by definition and criteria. For example, opinion differs as to when childhood ends. Childhood is a relative construct and has been variedly defined in the HIV/AIDS literature to end at 15 years, 17 years or 18 years. The term orphanhood has also being used in some of the estimations to refer to lost of either the mother or both parents. Others

even defined orphanhood in terms of economic deprivation rather than parental death whilst many also consider orphanhood as the mere absence and non-accessibility of biological parents.

The above notwithstanding, statistics suggest that every 50 seconds a child dies of HIV/AIDS, another becomes infected, three are made orphaned by the disease and six others would have a parent infected. It follows that daily, 5760 children become orphans and 3500 are infected or die of the disease (UNICEF 2009). The United Nations estimated that there are between 143-210 million orphans worldwide of which over 20 million are caused by AIDS deaths (UNAIDS 2010). Globally, 700,000 children are made orphaned by AIDS annually and approximately 90% of all AIDS orphans live in sub Sahara Africa (UNAIDS 2009, Matshalaga & Powell, 2002; Human Rights Watch, 2001b). In sub-Saharan Africa children orphaned by AIDS formed 36.8% of all children.

In Ghana there are 1.1-1.3 million orphans representing 16.3% of all Ghanaian children. Between 160,000 and 270,000 orphaned children are estimated to be caused by AIDS deaths representing 25% of all orphans (UNAIDS 2010, IRIN 2007). Approximately 150,000 Ghanaian children have lost both parents to the disease (UNICEF 2009). It is estimated that by 2018, 1.4 million children would be HIV/AIDS orphans, according to the chairman of the Ghana AIDS Action Commission GAC 2010).

2.4 The Psychosocial wellbeing of children affected by HIV/AIDS

The outcome of the review using the SIGN checklist is presented in Table 2.1 and the methodological appraisal of the quality of the available literature is discussed elsewhere later in this chapter. The evidence for mental health problems among children affected by HIV/AIDS is presented below under subsections “AIDS Orphans and Other Orphans” and “Children living with HIV/AIDS-infected Parents”. See Cluver et al. (2007a) and Wild et al. (2006) for reviews of studies conducted prior to 2007

2.4.1 AIDS Orphans and Other Orphans

The challenges and difficulties hampering efforts to extend antiretroviral treatment to those infected to prolong life and the increasing numbers of adults already infected with HIV/AIDS means that the number of AIDS orphaned children will continue to rise (Cluver

et al 2007); many HIV-infected adults will progress to AIDS quickly and subsequently die leaving their children orphaned (UNAIDS 2004). Kidman (2010) argued that AIDS orphans are exposed to mental, physical and social problems in the absence of a responsible caregiver. It could be possible that orphanhood within the context of HIV/AIDS would increase poor mental health through several pathways (Zidron 2008). They are often denied parental supervision, support and care. Parental death to AIDS means loss of a breadwinner and key support system, trauma, stigma, abuse and exploitation (Kidman 2010; Monasch & Boerma 2004; Cluver et al 2007; Thurman et al 2006). In the context of the HIV/AIDS epidemic, the death of a parent sparks drastic changes for children including changes in the family and household structure (Masnas et al 2004), separation of siblings (Makame et al 2002), placement in poorer households (Cluver & Orkin 2009) and an end to childhood as they take on adult roles and duties including bread-winning responsibilities (Nyamukapa et al 2008).

The severity of the impacts of the HIV/AIDS pandemic on children prompted Amon (2002) to suggest that millions of children will consequently lack adequate care and guidance for normal development as they are deprived of their number one line of protection and support. Quite recently there has been a growing international interest in research on orphans (Pivnick & Villegas 2000, Forehand et al 1998, Gardner and Operario 2006, Cluver et al 2007, Atwine et al 2005, Andrews, Skinner & Zuma 2006, Doku 2009, Doku 2010 Earls, Raviola & Carlson 2008, Wild et al 2001) because of the realization that parental death is a risk factor for psychological distress (Bauman & German 2005). In the context of HIV/AIDS, orphans are suggested to have multifaceted needs that are complex (Kiyiapi 2007). AIDS orphans suffer cumulative, multiple loss (Bauman & German 2005) that compounds their risk of experiencing psychiatric disorders when compared to other children (Rutter 1996). Orphans may face anxiety about their future, and the chances of not continuing and completing school (Case & Ardington 2006; Monasch & Boerma 2004). A study conducted in Zimbabwe in 2008 found that orphaned children of all types (maternal, paternal, double) have significantly higher distress than non-orphans (Nyamukapa et al 2008). In Tanzania, similarly high internalizing problems were reported for orphans compared to non-orphans (Makame et al 2002).

Cluver et al (2007b) found that in South Africa, compared with other children, AIDS orphans have more mental health problems such as depression, anxiety and post traumatic stress disorder. Suicidal ideation was also found to be significantly higher among AIDS orphans than non-orphans in a study conducted in Cape Town (Cluver & Operario 2006).

Kaggwa and Hindin (2010) noted that orphanhood was associated with poor psychological wellbeing, specifically hopelessness and depressive symptoms. No significant differences were found on rates or severity of symptoms of mental difficulties among single orphans compared to double orphans in China which prompted Ziaoyi et al (2009) to claim that living with a surviving parent offers no antidote against the numerous psychological difficulties that children experience when they experience parental death from AIDS. He & Ji (2007) indicated that orphans in China are less satisfied with their lives and show symptoms of depression and lower self-esteem. Following on from this, (Kidman 2010; Cluver 2007 thesis) it is argued that lack of adequate grieving process offered orphans and the drastic life changes that occur with its associated deprivations are the drivers of the increased psychological difficulties observed in children orphaned by AIDS.

2.4.2 Children living with HIV/AIDS-infected Parents

UNICEF (2003) noted that children do not have to be infected with the HIV virus to be devastated. Rotheram-Borus, Weiss, Alber and Lester (2005) found that children are affected not only by AIDS parental deaths but also by the time they spend with their infected parent(s) or by merely living in household with a relative infected. Children living with HIV/AIDS-infected parents would witness the physical and psychological deterioration of their parent(s) as parenting skills, social support, family cohesiveness are compromised (Rotheram-Borus, Weiss, Alber and Lester 2005). The diagnosis of HIV/AIDS in the family comes with negative changes in the family structure and systems that may have consequences for the members. The diagnosis of HIV/AIDS in the family, Richter et al (2006) noted marks the beginning of series of other interconnected disadvantages including poverty and stigma. These changes in the family structure would lead to reduced or lack of adult attention, care and guidance for children (SASIX 2009) that would placed them at heightened risk for several social and psychological problems (Brown, Lourie & Pao 2000). Children living with HIV/AIDS-infected parents are often required to care for siblings and sometimes parents, take up more demanding house chores and engage in paid jobs to support the family. Household roles and duties are reversed and children become their parents' caregivers (Bauman 1996). These vulnerable children are now supporting and nursing their infected parents and other relatives rather than experiencing normal childhood. These children are denied the experience of healthy childhood that they deserve (USAIDS 2004). Thus the limited evidence available indicates that the very fabric of a child's normal development begins to fall apart with the presence

of HIV/AIDS infection in the household suggesting that these children have to battle the rigors and impact of HIV/AIDS well before they are orphaned.

Sengendo & Nambi (1997) and Burman (1996) bemoaned the devastating and traumatic effects that caring for HIV/AIDS infected and sick parents have on children. Therefore the many children whose parents or household members are infected with the disease may be living in stressful circumstances in the community. These children, compared to other children, are at risk of multitude of psychological and health problems (Brown, Lourie & Pao 2000). Donenberg and Pao (2005) attested that children living with HIV/AIDS-infected parents show substantial and prolong development impacts similar to that experienced by orphans.

Giese et al (2003b) and Andiman (1995) suggested that parental illness could be distressing and disruptive for children. The available sparse literature indicates that children felt sad, angry, depressed and hopeless when their parents are sick (Sengendo & Nambi 1997). Children living with infected parents experience depression, impaired cognition, grief and post-traumatic stress disorder (Hough et al 2003). Poulter (1997) identified that children living with infected parents are withdrawn, isolated and are prone to experiencing depressive disorders because of worrying about their own future and their parents' health. It was suggested that children are more likely to be depressed, withdrawn and suffer attention problems when they live with ill parents, but pointed out that these difficulties become profound following parental death (Forsyth, Damour, Nagler & Adnopo, 1996). Others, however, claim that these internalizing behaviours that often begin with parental illness may not necessarily increase following parental death (Forehand et al 1998). It is therefore not certain that the psychological distress that orphans experience would necessarily always be solely due to orphanhood. Klunkin & Harrigan (2002) suggested that the vulnerabilities that AIDS orphans and other vulnerable children face are due to poor parental coping, social ostracism and stigma.

Donenberg & Pao (2005) pointed out that significant medical advances in the treatment of HIV/AIDS have resulted in an increased number of children living with infected parents or relatives within the household. Children living with infected parents constitute the largest group of secondary sufferers (UNICEF 2005). Furthermore, as the incidence of new infections is not reducing significantly the number of households and families affected by parent(s) living with HIV/AIDS will continue to rise. Despite the suggestions that children living with infected parents are faced with a multitude of vulnerabilities and risks that have

negative psychological consequences, they are not the target of existing AIDS-related interventions for children affected by the epidemic. The available supports are given to AIDS orphans as opposed to those living with infected parents (Zhao et al 2010). This study will expand the existing literature by examining the psychological functioning of these children.

2.5 Discussion of the Review: Methodological quality assessment and appraisal of previous studies

The outcome of the review using the SIGN checklist is presented in the table below. In summary, the overall methodological quality of more than 95% of the studies is low. The majority of the studies utilised convenient, small samples with only approximately less than 5% using systematic sampling or representative samples. There are variations in the use of measurement scales and tools that make comparison across studies difficult. Approximately 92% of the studies did not provide information on the response rates. Additionally, definitions of orphans as used in the studies are vague, lacking inclusion or exclusion criteria.

Despite recognition that childhood and orphanhood extend to at least 17 years, most researches adopted 15 years as their cut-off. It is also not uncommon that studies compared AIDS orphans and non-orphans without controlling for relevant confounders and concluded that the differences in their psychological functioning are due to impacts of AIDS. It was also found that few studies controlled for socio-demographic factors and only 5 studies examined other confounding variables beyond these factors. In about 87% of the studies, the technique for determining the cause of parental death was not specified. The sparse and scattered available evidence therefore limits conclusions about additional effects that HIV/AIDS might have on children other than those associated with orphanhood per se or vulnerabilities that face all children. Children living with HIV/AIDS infected parents were often excluded from empirical research as revealed by the existing literature.

Globally, there is public health concern about alleviating the negative impacts of HIV/AIDS on children in families and communities experiencing the epidemic. However, the literature reviewed suggests that the evidence that orphans and vulnerable children are at heightened risk for numerous vulnerabilities and psychological problems is mixed, inconsistent, and sparse. The available findings are based on limited empirical data that

suffer serious methodological problems such as use of non-standardized measures, inappropriate control groups and small sample size. Many of the existing data have come from children in matured epidemic contexts such as urban areas in Southern and Eastern Africa including South Africa (Case & Ardington 2005, Cluver & Gardner 2006, Cluver et al 2007a, 2007b, 2009), Tanzania (Kuzinger et al 2008), Uganda (Kaggwa & Hindi 2010), Zimbabwe (Nyamukapa et al 2010), Ethiopia (Bhargava 2005), Kenya (Chao et al 2010). There is also a growing literature from China (Xu et al 2010, Zhang et al 2009, Lin et al 2010, Zhao et al 2010a, Xu et al 2010, Zhao et al 2010b, Hong et al 2010a, Hong et al 2010b).

Clearly, previous studies are inadequate to understand the impact HIV/AIDS has on children in low and early epidemic regions. Urgently needed is a deeper contextual understanding of the impact of parental HIV/AIDS and death on children as well as a spectrum of risks and protective factors which could be targeted in intervention programmes for families and communities affected by HIV/AIDS.

Furthermore, most studies collected data from *either* the affected children *or* their caregivers and parents. The current study is the first to focus on reports from multiple informants (children and their carers). This strategy increases the validity and reliability of variables of interest and also captures important information about contextual effects that may have implications for interventions (Lochman 2004). Because child and carer reports could account for unique variances in predicting relevant child outcomes (Ferdinand et al 2003), the findings from this study are likely to reflect more accurately child behaviours across settings that could be generalised.

Finally, the earlier works on HIV/AIDS vulnerable children in Africa were mainly conducted in urban areas. Ghana and Africa as a whole has a predominantly rural population, and it is well documented that most HIV/AIDS-infected and affected persons live in rural areas. There is also evidence that urban vs. rural settings impact upon mental health disorder prevalence in sub-Saharan Africa (Havenaar, Geerlings, Vivian, Collinson, & Robertson, 2008; Patel et al., 2007b). In summation, the emerging empirical evidence that the literature currently presents on HIV/AIDS vulnerable children is largely anecdotal and limited. This is the first rural-urban study to assess mental health disorders in children affected by HIV/AIDS (AIDS orphans, children orphaned by other causes, children living with HIV/AIDS-infected parents) and comparison children in a low HIV/AIDS prevalence country, Ghana. The study employed a battery of widely used standardised scales that are

culturally sensitive to assess delinquency, self esteem and future orientation, emotional problems, peer problems and other common mental health disorders.

The sparse information of orphans in Ghana mainly deals with their numbers and prevalence of mental health symptoms. As the numbers of AIDS orphans and others made vulnerable by HIV/AIDS are increasing, it is imperative to fully grasp the impact that the disease has on children. It is not all children affected by HIV/AIDS that suffer psychological symptoms. In the general literature on children, risk factors are known to increase the likelihood of developing and experiencing psychological symptoms whilst protective factors shield the child and reduce the probability of children suffering psychological distress (Williamson 2005). The specific risk and protective factors that may influence how HIV/AIDS impacts children's mental health have yet to be identified, in order to guide the formulation of the best intervention strategies to alleviate adverse psychological functioning. In the international literature the dynamics of potential mediators (risks and protective factors) are rarely captured. Clearly comprehensive knowledge about mental health needs, particular kinds of psychological problems as well as how specific factors heighten or buffer these problems is needed to develop appropriate services for families with orphans and vulnerable children. The present work expands on the literature and knowledge on orphans and vulnerable children by identifying specific pathways that lead to psychological difficulties and vulnerabilities so that the limited resources in developing countries are focused on the most important pathways to address the problems of these children. The study will achieve this by using multi-informant data, and gathering of detailed information regarding a range of potential confounders.

Table 2.1 Empirical Quantitative studies on orphans and vulnerable children in developing countries

Author/Year/ Country and Design	Sample Characteristics	Measures	Key Findings	Quality Rating Category
Chao, Denise, Mbai, Itindi, Milimo, Halpern & Iritani (2010), Kenya Cross-sectional non-randomised control trial.	105 Adolescent orphans aged 12-14 yrs Intervention: supported with education: school fees and uniforms plus a community visitor	Un-standardized self created measures	1. Intervention students were less likely to drop out of school, commence sexual intercourse, or report attitudes supporting early sex. 2. School support also increased prosocial bonding and gender equity attitudes.	Low
Zhao, Li, Fang, Zhao, Zhao, Lin & Stanton (2010) China Cross-sectional design	459 single orphans in family-based care	Trusting Relationship Questionnaire Epidemiological Studies Depression Scale for Children Children's Loneliness Scale Trauma Symptom Checklist for Children Multidimensional Scale of Perceived Social Support	1. No significant differences were reported between maternal and paternal orphans, except that paternal orphans reported better trusting relationships with caregivers than maternal orphans. 2. Children with a healthy surviving parent reported significantly better scores for depression, loneliness, posttraumatic stress, and social support than children with a sick parent. 3. Significance relation on orphan status and academic marks and trusting relationships with caregivers while controlling socio-demographic factors.	Low
Atwine et al (2005) Uganda Cross-sectional	123 rural AIDS orphans	Beck Youth Inventories translated into Runyankore	Orphans higher on anxiety, depression, hopelessness, suicide ideation and anger than non-orphans. Self-concept was same for both. Orphanhood status is a sig. predictor of outcomes. Age, gender, socio-economic status, household size, school attendance, currently doing chores, multiple bereavement and current are not associated with psychological distress.	Adequate

Author/Year/ Country and Design	Sample Characteristics	Measures	Key Findings	Quality Rating Category
Case & Ardington (2005) South Africa Longitudinal studies	Not Stated	Self constructed scale	Orphans have education difficulties than other children. Maternal orphans' educations are affected than paternal ones.	Adequate
Cluver & Gardner (2006) South Africa Cross-sectional design	30 AIDS orphans, 30 non-orphans	SDQ	No differences. However, orphans have suicide ideation and high PTSD	Low
Hong et al (2010a) Cross-sectional China	755 AIDS orphans 466 Vulnerable Children 404 Comparison children	MPSS plus 10 other psychosocial scales	Vulnerable children reported the lowest level of perceived social support. Perceived social support is associated with positive psychosocial outcomes. Gender and age are significant covariates of perceived social support. No difference in family support among the 3 groups.	adequate
Hong et al (2010b) Cross-sectional China	Orphans living in: Community based care (30), Kinship care (90) and orphanages (176)	Chinese version of TSCC	Orphans living in Kinship care were significantly distressed compared followed by those in orphanages and then those in community. SES and gender are not significantly associated with psychological outcomes.	Low

Author/Year/ Country and Design	Sample Characteristics	Measures	Key Findings	Quality Rating Category
Zhao et al (2010) Cross-sectional China	459 Single AIDS orphans in family based care	A battery of psychosocial scales that measures depression, self esteem, loneliness, PTSD, social support, self-reported health status, trusting relationship with caregiver, academic mark, educational expectations.	No significant difference between paternal and maternal orphans on all measures except that paternal orphans showed better trusting relationship with caregivers than maternal orphans. Orphans with healthy caregivers showed better psychological wellbeing than those with sick caregivers.	Low
Kuzinger et al (2008) Cross-sectional survey Tanzania and Burkina Faso	11392 caregivers of orphans (4931 in Tanzania, 4835 in Burkina Faso) and 1626 non-orphans	Not Stated	No difference between orphans and non-orphans on school performance and psychological health. Orphans are less likely to receive education Increased age is associated with less going to school. Males are more likely to receive education than females. Children from Christian families are more likely to be in school than those belonging to other religions.	Low
Xu et al (2010) Cross-sectional China	64 orphans 52 non-orphans	Self-constructed measures	No difference between orphans and non-orphans on health, illness and psychological wellbeing. No difference was also found on education, and family and peer relationships.	Low
Cluver, Gardner & Operario (2009) Cross-sectional South Africa	425 AIDS orphans 241 other orphans 278 non-orphans	CDI, CMA-Revised, SDQ, Child PTSD checklist	AIDS orphans high on psychological problems of depression, PTSD, conduct and peer problems. Food security, employment in household and access to social grant and education are related to better psychological wellbeing.	Good

Author/Year/ Country and Design	Sample Characteristics	Measures	Key Findings	Quality Rating Category
Case, Paxson & Ableindinger (2004) DHS data from 10 African countries	Not Stated	Not Stated	Living with distance relative is associated with poor school enrolment. Orphans are less likely to be in school. Effect of orphanhood on education increased with age. No gender difference on school enrolment for orphans.	Adequate
Zhao et al (2010b) Cross-sectional China	176 AIDS orphans aged 6-18 years	CES-DC Children Loneliness scale Traumatic Symptoms Checklist for Children	Orphans who were cared for by non-relatives scored highest on depression, traumatic symptoms and loneliness than those cared for by surviving parents, grand parents, and other relatives. Orphans cared for by grand parents have better psychosocial wellbeing than other orphans. No significant association between psychological wellbeing and age, gender, time in orphanage, household replacement, duration of displacement.	Low
Nyamukapa et al (2010) Cross-sectional and focus 14 group discussions with children Zimbabwe	185 double orphans 109 maternal orphans 150 paternal orphans 83 non-orphans Orphans are aged 12 years and below	Depression and anxiety scales adapted from WHO self-report questionnaire	Orphans were significantly higher on psychological distress than non-orphans. Increased mobility and sibling separation are associated with psychological distress. Girls and younger children reported significantly high psychological distress. Paternal and double orphans are worse affected psychologically.	Adequate
Kaggwa & Hindi (2010) Uganda Cross-sectional school based survey	1500 children aged 12 – 29 years	Newly constructed scale, and CBI, Beck Hopeless Inventory	Orphanhood was associated with psychological distress among male orphans. Male double orphans and male maternal orphans have high depression and hopelessness. Lower caregiver connectedness, having a chronically ill adult in household and ill-treatment in residence are associated with high depression among males.	Low

Author/Year/ Country and Design	Sample Characteristics	Measures	Key Findings	Quality Rating Category
Lin et al (2010) China Cross-sectional	755 AIDS orphans 466 Vulnerable children 404 comparison children	Centre for Epidemiology Studies Depression Scale for children, Children loneliness scale, Rosenberg Self-esteem scale, Future Expectation Scale, Hopefulness	Increased stigma is associated with high psychopathology and lower self esteem, hopefulness, future expectations. Aids orphans reported higher stigmatization than other children. Age is a significant covariate for psychopathology.	Adequate
		about the Future, Perceived control over future scale, and a newly constructed stigma scale		
Zhang et al (2009) China Cross-sectional survey	755 AIDS orphans 466 Vulnerable children	Existing scales adapted in Chinese. Including the LITE-S and six others	Boys reported higher traumatic experiences than girls. Aids orphans expressed significantly high future expectation, hopefulness, perceived control over the future than vulnerable children. AIDS orphans are higher on depression and lower loneliness compared to vulnerable children. Psychological outcomes are associated with increased age.	Low
Xu et al (2010) China Cross-sectional survey	116 families affected by AIDS 109 non-affected families	Existing scales adapted in Chinese. Including the LITE-S and six others	Children in AIDS affected families are low on psychosocial functioning, emotional functioning and school functioning than non-affected families. Awareness of children's status reduces children's scores on emotional and social functioning. Decreased self-esteem reduces children's emotional, school and psychosocial functioning.	Low
Poulter et al. (1996) Zambia Cross-sectional survey	22 households with orphans 66 households with HIV+ caregiver or parent, 75	Existing, standardised scales Questionnaire filled by caregivers	Conduct problems were low among all the children. Compared to other children, orphans reported high levels of unhappiness and worry. Economic hardship was not associated with psychological distress.	Low

Author/Year/ Country and Design	Sample Characteristics	Measures	Key Findings	Quality Rating Category
	Community households without HIV/AIDS.			
Bhargava (2005) Ethiopia	479 AIDS orphans, 574 orphans by other causes	Existing standardised scales filled by children	Children orphaned by AIDS reported more social and emotional adjustment problems than other orphans. Female orphans reported more internalising and social adjustment problems than male orphans.	Adequate
Segendo & Nambi (1997) Uganda Cross-sectional survey	169 AIDS orphans, 24 non-orphans	Newly constructed, unstandardised measure	AIDS orphans showed higher levels of depression and lower optimism about life compared to non-orphans. Younger children living with widowed fathers are more depressed than older children older children living with widowed parents.	Low
Makame et al (2002) Tanzania	41 AIDS orphans and 41 non-orphans	Newly constructed, unstandardised measure	Compared to non-orphaned children, orphans showed higher internalising difficulties. Age, gender, living apart from siblings and length of time with current caregiver are not associated with psychological distress.	Low
Manuel et al (2002) Mozambique	76 AIDS orphans and 74 non-orphans	Unstandardised measurement scales	AIDS orphans reported higher depressive symptoms and are unlikely to have a trusted friend or adult. Caregivers depression level correlated with children's depression and negatively with social support.	Low
Gilborn et al (2006) Zimbabwe	1258 orphans and vulnerable children	Newly constructed, unstandardised measure	Orphans reported higher stress and psychosocial distress, and lower psychosocial wellbeing. Increase age and female gender are associated with higher internalising problems.	Low

Author/Year/ Country and Design	Sample Characteristics	Measures	Key Findings	Quality Rating Category
Chatterji et al (2005) Rwanda and Zambia	1160 children including AIDS orphans, children with sick caregivers and non-affected children	Newly constructed, unstandardised measure	In Zambia both AIDS orphans and children living with sick caregivers reported higher distress than non- affected children. In Rwanda, AIDS orphans showed higher distress compared to other children. In Rwanda socioeconomic status and community cohesion were negatively associated with distress outcomes. In both Rwanda and Zambia living with a sick caregiver was a significant covariate of worry and stress.	Low
Wild et al (2006) South Africa	81 AIDS orphans, 78 other orphans and 43 non-orphans	Existing standardised children measures	Orphans of other caused showed the highest depression and anxiety levels compared to all other children. AIDS orphans did not differ from other orphans or non- orphans. There was no difference on externalising problems. Female gender, greater control from caregivers, poorer neighbourhood regulation, poorer caregiver connection, greater peer connection, greater neighbourhood connection and younger age are associated with higher internalizing problems. Antisocial behaviour was associated with lower caregiver regulation, lower peer regulation and lower neighbourhood regulation.	Adequate
Nyamukapa et al (2006) Zimbabwe	5321 children that included orphans and vulnerable children	Newly constructed, unstandardised measure	Orphans reported significantly higher psychosocial disorders and symptoms in high intensity than other children. Female gender, living in an urban area, living in poor households and not being related to caregiver are associated with more psychosocial difficulties.	Low
Rotheram_borus et al (2001, 2004) USA Longitudinal study	73 AIDS orphans and 138 children living with HIV-infected parents	Standardised scales	AIDS orphaned children exhibited significantly higher internalising and externalising problems than children living with HIV-infected parents.	Adequate

2.6 Risks and protective factors

Review of the general literature suggests that possible factors such as socioeconomic status, abuse, social support, family disruption, and stigma may influence psychological difficulties observed in children. Cluver & Orkin (2009) argued that food insecurity, stigma and bullying increase psychological symptoms among children in South Africa. In addition, Factors that have been identified in the general childhood literature as risks and protective factors for mental health outcomes are presented below.

2.6.1 Demographic Factors

Among the general population, gender differences in psychological functioning and health are well documented (Dekker et al 2007, Mezulis & Abraham 2008). During childhood, the prevalence of psychiatric disorders is significantly higher in boys, while in adulthood, women have twice the risk of depression compared to men (Strunk, Lopez & DeRubeis 2006; Burwell & Shirk 2007). In Africa gender plays an important role in the socio-cultural set up of families and societies. Parenting practices, socialization, roles and expectations differ according to the sex of the child. This makes investigation into gender difference among orphans on psychological distress critical (Dahlback et al 2008). Compared to girls, orphaned boys were found to show lower self-awareness and to perform more poorly at school (He & Ji 2007, Rutter 2008).

Sarka, Neckermann & Muller (2003) found that households with orphans had more children under 18 years than those without orphans. Orphans and vulnerable children experience frequent interruptions in education (Ankrah 1993) and their school fees often unpaid (UNAIDS 2004). Children who drop out of school lose the benefit of education as well as school friends. Significantly, many children affected by HIV/AIDS were found not to be attending school and this correlates with increased psychological distress (Nyamukapa et al 2008; Cluver, Gardner & Operario 2007).

2.6.2 Poverty and Socioeconomic Factors

There is a growing interest in the international literature in grasping the relationship between poverty and its impacts on disease and epidemics (Boucekkine & Laffargue 2007). Greener (2008) noted that the relationship between HIV/AIDS and poverty or economic standing is dynamic, complex, and a much debated subject among researchers.

Whiteside (2002) and Cohen (2002) proposed that poverty is both a cause and a consequence of HIV/AIDS.

Poor socioeconomic standing and poverty increase the likelihood of one's involvement in risky sexual behaviours (Kalichman et al 2006), early sexual debut (Gillepsie et al 2007), multiple sexual partners (Nattrass 2004) and prostitution (Hunter 2007). Response options are limited when HIV/AIDS enters an impoverished family (UNAIDS 2006) making its impact devastating and severe. Costs of treatment and medical expenses soar up (Ankrah 1993) amidst reduced family income as parents stop work because of the illness or because of stigma and discrimination (Bray 2004). Despite suggestions that expensive funeral expenses (Stein 2003) and the grabbing of properties and possessions by greedy adult family relatives (Gilborn et al 2001) leave orphans economically powerless, devastated and confused (Foster & Gregson 2003), there is mixed evidence on how these impact children's mental health (Cluver 2007). Shaver (2007) suggested that the relationship between SES and health are inconsistent because of difficulty in collecting SES data, the dynamic nature of SES over time, lack of reliability of measures and inaccurate and misleading interpretations of findings. Some studies failed to find any association between poverty and mental health among orphans (Poulter 1996; Atwine et al 2005). Ainsworth & Over (1994) and Foster et al (1995) found that orphans are not psychologically vulnerable compared to non-orphans from equally poor, equivalent contexts. However, the bulk of the evidence suggests that following parental death, there is an association between increased poverty and poor mental health among children (Stoppelbein 2000). The World Health Organisation observed that the increased risk of poor health in developing countries was the result of high rates of poverty in such regions (WHO 2006). In Tanzania, orphans were found to suffer more hunger than non-orphans (Makame et al 2002) whilst Foster et al (1997) reported inadequate access to shelter, clothing, food and health among orphans compared to non-orphans.

Gilborn, Nyonyintono & Wadda (2001) also noted that the poor socio-economic situation of orphans make them vulnerable to adult exploitation and abuse that has direct consequences for the health of children (Foster et al 1997; Bray 2003). In Zimbabwe, Ethiopia, Rwanda and Tanzania, AIDS orphans living in poor households (Nyamukapa et al 2006) and experiencing hunger (Bhargava 2005) were found to have high rates of psychological difficulties. HIV/AIDS was observed to have deepened poverty and exacerbated a myriad of deprivations in children in Africa (Niang & Van Ufford 2002). Poverty becomes deeper in families that take on AIDS orphans after parental death (De

Waal & Whiteside 2003). Most of these families already do not have adequate resources to care for their own children (Foster, Makufa, Drew, Kambeu & Saurombe 1996) and so this makes the already poor families sink deeper into poverty (Barnett & Whiteside 2002). Poverty discourages children in need and often pushes them to drop out of school (Van Donk 2002). AIDS orphans in China stated lack of economic support and ways to make money as their main present and future concerns (He & Ji 2007).

The relationship between socioeconomic status (SES) and mental health has also been widely investigated. Guthrie (2003) suggested that lower SES goes beyond insufficient income and limited material resources. It was suggested that lower SES weakens individuals' ability to cope with challenges (Duncan et al 1994) and influences all aspects of an individual's behaviour and places them at increased risk of developing psychological and psychiatric disorders (Richter 2004). Discrimination against AIDS orphans within households is heightened among families from low SES (Case, Paxson & Ableidinger 2004). Duncan et al (1994) indicated that abnormal child behaviours are caused by socioeconomic hardships. Children from low SES have heightened risk for psychopathology (UNICEF 2000; Rutter, Giller & Hagell 1998) including aggression (Lyon 1997) and vulnerability to rape, abuse and neglect compared to those from high SES (UNICEF 2005). In other studies low SES was linked to increased internalizing problems and impeded development (Sund, Larsson & Wichstrom 2003), high rates of drug abuse, alcohol consumption and conduct disorders (Lyon 1997; UNICEF 2005) among orphans and other vulnerable children.

Perceived SES was identified by some researchers as a better predictor of wellbeing outcomes among children because it captures dimensions more than the traditional objective SES. Low perceived SES was also found to show association with increased psychosocial health problems (Piko & Fitzpatrick 2001), depression and self-rated health (Goodman et al 2007). Low socioeconomic status and economic hardship is a key stressor for various vulnerabilities and disadvantages among AIDS orphans (WHO 2006, Foster et al 1997).

Llyod & Blanc (1996), Cluver & Gardner (2007) and Ainsworth & Filmer (2002) demonstrated that controlling for wealth and SES eliminates psychological differences between orphans and non-orphans. Lundberg & Over (2004) concluded that there is no rationale in directing resources in favour of AIDS over other children because the vulnerabilities that they faced are driven by poverty and socioeconomic factors commonly

found in other children within the same contexts. The evidences for these postulations are scanty and come from studies that suffer methodological weaknesses including poor assessment measures and often inappropriate interpretation of findings. There is the need to fully understand socioeconomic situations of children affected by HIV/AIDS and how they impact their mental health.

2.6.3 Domestic Violence and Child Abuse

Varied forms of domestic violence and child maltreatment exist in almost all cultures (Pogge 1992). Domestic violence encompassing children witnessing parental quarrels, fights and abuses is identified as a factor that places children at risk of developmental problems (Cummings 1998). Moffitt & Caspi (1998) also observed that exposure to domestic violence is a risk factor in childhood psychopathology. Exposure to domestic violence was consistently found to predict internalizing problems in children including post-traumatic stress symptoms (Heath & Kaminer 2004).

Different categories of child maltreatment are identified to include physical abuse, sexual abuse, psychological abuse and neglect. Rowan and Foy (1993) suggested that irrespective of the form of abuse, it is an increased risk for health problems. Recent literature on children in general found that child maltreatment is associated with heightened levels of emotional difficulties such as depression, withdrawal, anxiety and dissociation (Najman, Nguyen, & Boyle, 2007; Chen, Dunne, & Han, 2004, 2006; Carey, Walker, Rossouw, Seedat, & Stein, 2008), behavioural problems including delinquency, aggression, antisocial behaviours and conduct problems (Luo, Parish, & Laumann, 2008; Huang, Zhang, Momartin, Huang, & Zhao, 2008) and the development of high-risk behaviours (Jewkes et al 2010, Gilbert et al 2009, Heim & Nemeroff 2001, Albus et al 2004, Shaffer 2002, Killian & Brakarsh 2004). Lau, Valeri, McCarty & Weisz (2006) reported higher mental health problems for children who suffer maltreatment from their parents. Cicchetti & Lynch (1995) found that child maltreatment interferes with normal development of children, and increases risks of children developing a wide range of mental health difficulties (Markward 1997).

Increased levels of behavioural problems are mostly reported for children who experienced physical abuse (McLeod & Shanahan 1993) whilst emotional difficulties are mostly identified among children who suffer psychological abuse or neglect (Bifulco et al 2002, Appleyard et al 2004). However, Jouriles & Norwood (1995) indicated that externalizing

problems are consistently identified among maltreated boys whilst abused girls largely present internalizing difficulties.

Beside parental personality types, attitudes, perceptions, practises and values, parental illness and death might also create risks for children to be abused and exploited (Cicchetti & Lynch 1995). Tyler (2002) identified poor and negative family environment factors including impaired parent-child relationships and lack of or reduced parental guidance and monitoring as risk factors for child maltreatment. Others include neglectful parenting (Zhao et al 2011), family instability (Yen et al 2008), poverty (Miller-Perrin & Perrin 1999), and poor social support network and isolation (Zhao et al 2009). Consistently, it has been demonstrated that orphans and other vulnerable children lack adequate care and protection, and frequently live in households characterised by these negative family environment factors (Cluver et al 2007; Bicego, Rutstein, & Johnson, 2003; Mangoma, Chimbari, & Dhlomo, 2008; Case & Ardington, 2006; Monasch & Boerma, 2004; United Nations Children's Fund/United Nations Joint Programme on HIV/AIDS/World Health Organization, 2006). Other investigators observed that parents and close family members who are entrusted with providing protection, love and care are the very people that consistently abuse and neglect children (Funkquist, Eriksson & Muula 2007; Onuoha et al 2009; Cluver, Gardner & Operario 2008). The evidence, thus, suggests that children affected by HIV/AIDS parental illness and death might be at heightened risk for abuse and its subsequent negative consequences.

In most African countries, physical punishment of children using sticks and belts is virtually a community norm (Dawes & Mushwana 2007). Yet Dawes et al (2006) noted that there is no reliable data on exposure to or experience of child abuse among families affected by AIDS in developing countries due to poor reporting and recording of abuse incidences. However, there have been suggestions that domestic violence (Kistner 2003) and child abuse (Thurman & Kidman 2011) in HIV/AIDS affected households are on the increase. It is therefore imperative that childhood maltreatment and domestic violence among these children and its relationship with psychosocial wellbeing are clearly understood, so that necessary and appropriate prevention measures are designed to help the children and their families.

2.6.4 Child labour

The relationship between child labour and psychological functioning is highly contested (Lachman 1996; Cluver, Gardner & Operario 2007). Engagement of children in domestic chores is a common phenomenon in Africa and has been suggested that moderate involvement of children in household duties may not harm their psychological functioning (Bray 2003b) but rather promote social responsibility and a sense of inclusion in children (Clacherty & Budlender 2003). However, Bevegnu et al (2005) pointed out that child labour increase behavioural disorders almost three-fold compared to controls. In Jordan heightened substance use was noted among child labourers compared to controls (Hawamdeh et al 2001) and in Kenya 90% of children engaged in paid labour suffer severe emotional distress including depression, withdrawal and low self-esteem (Onyango & Kayongo-Male 1983). It has been noted that most children upon parental illness and/or subsequent death assume expanded household chores and adult roles that could be distressing for them (Giese et al 2003).

What is not clear is whether children affected by HIV/AIDS are engaging more in work/labour than other children and whether this could increase their vulnerabilities to poor mental health (Cluver, Gardner and Operario 2007c). The presence of HIV/AIDS in a household means that parental roles and responsibilities toward children will be diminished as parents fight the harsh impacts of the disease on themselves. A study in Kenya found that orphanhood increased school absenteeism by 52% in order to engage in farming, household chores, caring for siblings as well as nursing ill adults (Kipiayi 2007). Lyon foresaw the impact HIV/AIDS would have on future children when he suggested that children now become caregivers instead of receiving care, guidance and support (Lyon 1997). The children are forced as a matter of necessity to take up adult responsibilities to ensure the survival of the household. Salaam (2005) noted that children affected by HIV/AIDS assume adult domestic roles including caring for their siblings and other adult relatives who are sick. It was suggested that taking on parental roles and caring for younger siblings are typical responsibilities of orphans and children made vulnerable by HIV/AIDS (Kipiayi 2007). Children gradually become the household decision makers and the labour head that must cater for the social and economic needs of the family as they witness their parents die slowly of HIV/AIDS (Summers, Kates & Murphy 2002).

As children act as adults in the absence of adult care-giving, they are eluded by a much needed physical and emotional protection as well as support and guidance: vulnerabilities

which could make their childhood lives highly traumatizing and stressful (Rotheram, Stein & Lin 2002). Caring for sick and dying parents is one of the most traumatizing and devastating events for children (Burman 1996; Sengendo & Nambi 1997), and Nyamukapa and colleagues argued that it exacerbates symptoms of psychological disorders (Nyamukapa et al. 2008).

The World Bank noted that with the consequence of reduced parental care due to HIV/AIDS infection, children now work long hours supervising young siblings, doing tedious household chores and engaging in income generating jobs (World Bank 1998). In an earlier study, it was suggested that children affected by HIV/AIDS worked more than other children (Foster et al 1997). Budlender & Bosch (2002) suggested that engagement in long hours of domestic work are detrimental to children's physical and psychological wellbeing, while Makhoul et al (2004) observe that they interfere with children's development. Gaffeo (2003) suggested that some children even have to quit schooling to assume roles as parents, carers, nurses and economic providers.

Although child labour and HIV/AIDS are not identical, both have been consistently associated with poverty (Bagley & Mallick 2000), internal migration, abuse and exploitation (Gilbert et al 2009), lack of good educational opportunities (Srinath 2006), and development of high-risk behaviours and psychological problems (Jewkes et al 2010, Cluver et al 2007, Heim & Nemeroff 2001, Albus et al 2004, Shaffer 2002, Killian & Brakarsh 2004). This suggests that child labour might be an important risk factor for mental health problems among orphans in general and children affected by HIV/AIDS. HIV/AIDS and its associated poverty are also suggested to heighten the trend of child labour, both paid and unpaid (Mturi & Nzimande 2003). Child labour will continue to rise because efforts to reduce it are failing due to the weak legal and educational policies as well as the existing socioeconomic context (poverty, migration etc) within which child labour occurs (Srinath 2006; IPEC 2005; UNICEF 2007). Bunnak (2007) also suggested that child labour persists because the harmful effect it has on children has been downplayed. Despite the prevalent and increasing nature of child labour in Africa, the relationship between mental health outcomes and child labour among children affected by AIDS has not previously been explored in this context (Cluver, et al 2007).

2.6.5 Stigma and discrimination

Stigma was long associated with individuals with HIV/AIDS (Parker & Aggleton 2003; Wight et al 2006; Cain, Maclean & Sellick 2004; Thomas 2007). The association of HIV/AIDS with sex and prostitution, homosexuality, promiscuity and the lack of cure makes it a societal taboo in most African communities (Bunting 2001). Ayrenci (2005) observed that in Ghana HIV/AIDS is seen as a result of sexual immorality or a punishment from God for sins of promiscuity that makes infected individuals to be surrounded by shame, rejection and fear. Weitz (1991) noted that HIV/AIDS is the most stigmatised illness of all time. There exists an extensive literature on HIV/AIDS as well as HIV/AIDS and stigma. The association between increased HIV/AIDS related stigma and increased psychological difficulties among infected persons was well documented (Link 1987; Skinner & Mfecane 2004, Green & Smith 2004). Strode & Barret-Grant (2001) established the association between poor self-worth and HIV/AIDS-related stigma among infected adolescent youths. Social stigmatization of persons infected with HIV/AIDS and its associated fear leading to denial and non-disclosure of one's status was also demonstrated (Wild 2001; Alubo 2000; Mills 2004).

However, there is little exploration of the associations between HIV/AIDS-related stigma and mental health outcomes amongst children affected by AIDS (Cluver 2007). Children would experience stigma and discrimination intensely compared to adults because they often do not know their rights, have no control over their situations, and may interpret, express and react to stigmatizing events differently (Cree et al 2004). It was suggested that stigma could heighten both the psychological problems (Gernholtz & Richter 2004; Clay et al 2003) and material problems (Chase & Aggleton 2001; Gaballe et al 1995) that children experience in the context of HIV/AIDS. Bond & Nubani (2002) observed that stigma and discrimination hampers the bereavement process after parental death and exacerbate trauma. HIV/AIDS related stigma and discrimination is noted to come from one's HIV sero-status, HIV/AIDS in the family or AIDS related poverty (German 2004). Cluver & Gardner (2007) found in a qualitative study, that uninfected children suffer stigma related to their parents' HIV status or death because they were wrongly assumed to be infected too. Children, thus, suffer "courtesy stigma" (Goofman 1963): stigmatization because of one's association with an HIV/AIDS infected caregiver or parental death from the disease. In such instances appropriate caregivers may be unwilling to provide the needed care and support for children affected by HIV/AIDS for fear that the stigma associated with HIV/AIDS would be directed at them (caregivers) (Juma et al 2004).

High levels of stigma and discrimination involving physical assaults, rejection and worse still murder are reported among AIDS orphans and vulnerable children in South Africa (Skinner & Mfecane 2004). In Kenya students are unwilling to share accommodation with AIDS orphans (German 2004; Kipiayi 2007). AIDS-related stigma could lead to withdrawal from social support networks (Herek Glunk 1999) and heighten isolation among children (Cluver 2007). Children may internalize HIV/AIDS-related stigma and discrimination and would avoid all social interactions such as health centres, schools and religious gatherings that they consider as potential stigmatizing situations (Strode & Barrett-Grant 2001). Thus children are further stressed through social isolation and lack of community support networks (Deacon and Stephen, 2007). Internalized stigma is noted to be associated with low self-esteem, anxiety and depression (Corrigan & Watson 2002).

AIDS orphans in Zimbabwe reported stigmatization in the form of bullying and name-calling from friends and the community (Foster et al 1997). Higher levels of stigma and discrimination were also reported for orphaned children in Rwanda (Thurman et al 2006) and in South Africa, Giese et al (2003) found that AIDS orphans were frequently bullied, teased and denied basic services and education. Other studies also confirmed that AIDS orphans and vulnerable children experience stigma and discrimination that leads to social isolation and bullying (Cluver & Gardner 2007; Bray 2003a; Giese, Meintjies, Croke & Chamberlain 2003).

The nature, extent and effect of stigma and discrimination vary across cultural and regional contexts (Herek 1999; Leary & Schreindorfer 1998; Deacon et al 2005). HIV/AIDS prevalence, the stage of the epidemic, distribution of HIV/AIDS cases, political factors and modes of transmission affect how stigma and discrimination operates. These make it impossible for findings on HIV/AIDS stigmatization and discrimination conducted in other contexts to be directly extrapolated to children in Ghana. The present study is the first quantitative examination of stigma and discrimination as a potential risk factor contributing to heightened psychological distress among children affected by HIV/AIDS in Ghana.

2.6.6 Social support

HIV/AIDS results in loss of social and family support with direct consequences for children (Bray 2003; Foster et al 1997). Social support is found to be associated with

mental health (Greenwood 1996). Availability or perception of social support is suggested to enhance the coping skills of orphans and vulnerable children to handle stressing life events (Allgower et al. 2001) and functions to reduce distress and psychological difficulties (Decker 2007). Social support is a cost effective critical resource (Thurman et al. 2006) that buffers the effects of mental illness among children (Callaghan & Morrissey 1993). The availability of support for children in communities affected by HIV/AIDS varies with the prevalence and maturity of the epidemic (Bauman et al 2006). The social support system is usually sustained by family relatives and neighbours. In high prevalence countries like those in Southern African countries children witness the death of parents, siblings, relatives and neighbours (Schenk 2009) that overwhelm the traditional support system provided by extended family members and established supportive environment of community network (Hong et al. 2010). It is suggested that the traditional support system is collapsing in the region because of the orphan crises (Foster 2000; UNICEF 2007; Nyambedha et al 2003; Ardington 2008).

However, in a low prevalence epidemic context like Ghana, there may still be available family and community support to mitigate the impact of the disease on children's psychological wellbeing (Robson et al 2006). Families in low prevalence regions could show considerate resilience in absorbing orphans (Hosegood et al 2007; Heuveline 2004). However, difficulties in expanding antiretroviral treatment and the high levels of stigma that are attached to the disease in low prevalence areas would result in isolation of infected family members (Niang & Van Ufford 2002) and unwillingness on the part of relatives to offer support when needed. Difficulty in securing a foster parent or caregiver for AIDS orphans were reported in low prevalence regions (Delva et al 2009). Bicego, Rutstein & Johnson (2003) documented a decrease in care-giving for AIDS orphans and vulnerable children in both Kenya and Ghana. Clearly, children affected by HIV/AIDS may lack social support compared to non-orphans (Cluver et al. 2007). Delva et al. (2009) also confirmed the sparse social network of friends and low social support from the family for AIDS orphans in Guinea. Social support is located within local cultural and social contexts, and is often impacted by education, church activities, extended family and community members (Okawa et al 2011; Wood, Chase & Aggleton 2006; Li et al 2007; Fang et al 2009). Children who receive adequate support from family, peers and others adapt well psychosocially while those who do not become depressed, lonely and withdrawn (Raphael, Cubis, Dunne, Lewin & Kelly 2000). Despite the limited evidence on the association between social support and psychosocial wellbeing, there is urgent need to strengthen the social support system of orphans and vulnerable children within specific

contexts to alleviate psychological distress with high cultural variability. Recently an intervention study in Rwanda found that community based youth mentorship enhanced community connectedness and social protection for children (Brown et al 2007). The present study examined perceived social support as contextual resilience factor in developing such similar appropriate interventions for families affected by HIV/AIDS in Ghana (Connor & Zhang 2006).

2.7 Debate on Policy for Action

There is growing public health concern about how to alleviate suggested negative impacts of HIV/AIDS on children in families and communities experiencing the epidemic. One school of thought holds that AIDS orphans are psychologically worse off compared to other children (Lester et al 2002). This view argues that AIDS orphans present peculiar needs and heightened mental psychological risks calling for tailored and specialized support and care. This stance further calls for prioritized interventions for AIDS orphans in preference to other children. Many who support this view hold that with limited resources, targeted interventions and care services for those in dire needs are necessary. Okele et al (2005, 2006) suggested children orphaned by AIDS have poorer psychological difficulties than other children and should therefore be the target for immediate actionable intervention programs.

On the other hand, a second school of thought claims that the above view contributes to a one-directional view of the impacts of HIV/AIDS on children (Meintjes 2006). It argues that in the context of HIV/AIDS it is not clear which children are at heighten risk for psychological difficulties and thus need special assistance (Barnett & Whiteside 2003). Firstly, Bray (2003) and Wild et al (2005) found that the social consequences of HIV/AIDS make it impossible to single out these children as different from children who live in extreme poverty and other vulnerable conditions. Secondly, their argument is that HIV/AIDS depletes families and communities, thus, all children are affected (Masanjala 2007). Secondly, the point is made that the evidence suggesting that AIDS orphans are disadvantaged and experience heightened risks for mental health problems is inconsistent, mixed and limited (Cluver et al 2007; Rotheram-Borus et al 2005; Wild et al 2005; Forehand et al 1998). Finally, they concluded that any attempt in singling them out AIDS orphans for whatever reason would deepen their stigmatization and consequently hamper their wellbeing (Cluver et al 2007). This consequently means ignoring equally vulnerable

children such as those living with infected parents and relatives. Akwara (2009) demonstrated that poverty rather than orphanhood was a good predictor of mental health among children within the context of HIV/AIDS epidemic.

The present thesis, however, is of the view that any attempt at intervention policies should be informed by a deeper understanding of how children and subgroups are affected by the HIV/AIDS epidemic (Bauman & German 2005). The thesis thus provides empirical evidence on the debate by highlighting the differing and specific needs and vulnerabilities of various subgroups of children affected by the disease.

2.8 Verbal Autopsy

Most deaths are not medically certified or attended to by medical doctors in Africa (Ruzicka & Lopez 1990). There is a lack of certified causes of death in mortality data in Africa, particularly in the rural areas where most deaths do not occur at health centres. Most deaths occur at home and go undocumented due to inaccessibility of health facilities and poor registration systems (Ruzicka & Lopez 1990). In such circumstances, Verbal autopsy, a technique in accessing cause of death is often the sole option.

Verbal autopsy utilises information provided by close relations or significant others on circumstances and symptoms leading to death (Quigley, Chandramohan, Setel, Binka, & Rodrigues, 2000) without verification by death certificates. It is based on the assumption that diseases have distinct, observable symptoms that can be recognised and reported by even lay people. Others have argued that the use of verbal autopsy in Africa to identify cause of AIDS death is spurious arguing that symptoms defining the disease overlap with those of other diseases and that high stigma and discrimination forces persons in African cultures not to be opened about the diseases (Deacon, Inez, & Prosalendis, 2005; Marcus, 1999a; Mills, 2004; Skinner & Mfecane 2004).

However, the robustness of the verbal autopsy method as a critical instrument for use in developing countries has been demonstrated (Urass et al 1994) and the tool has being validated in several African countries including Ethiopia, South Africa, Uganda and Tanzania. The validation was done by comparing assigned caused of death from verbal autopsy to HIV/AIDS sero-status of individuals known prior to death or to hospital records of certified deaths (Hoosegood, Vanneste & Timeaus 2004; Abdulahi 1994; Kamali, Wagner, Kengeya Kayondo, Nakiyingi, & Mulder, 1994; Greenwald et al 2005; Pronyk et

al., 2004; Baiden et al 2007; Quigley et al 2000; WHO, 2005b; Lopman et al 2006, 2010; Setel et al., 2006). In these studies verbal autopsy has about 85% sensitivity and a specificity of about 79% for identifying AIDS deaths.

Verbal autopsy validation in Ghana also compared assigned causes of death from verbal autopsy to medically certified causes of death (Hoosegood, Vanneste & Timeaus 2004) and was found to correctly identify 78% of deaths. Verbal autopsy has since been used in several studies with high predictive powers (Chandramohan 1998; Ghana VAST Study Team 1993; Feeney 2001 Mather et al 2005). The World Health Organisation and Health Metrics Network have approved it for use in developing countries and asserted that it is an essential means of ascertaining AIDS deaths in the absence of HIV/AIDS sero-status record of deceased persons (WHO 2004). Lopman and colleagues state clearly the value of verbal autopsy: it is the only option to identify cause of death in widespread HIV/AIDS epidemic settings (Lopman et al 2009). The present study used the verbal autopsy method to assess the cause of parental death.

2.9 Aims and Objectives

The present study on the mental health of children affected by HIV/AIDS, aimed to:

1. determine whether OVC experience more psychological difficulties (depression, self esteem, reactive attachment disorder, conduct problems, delinquency, hyperactivity) than non-OVC;
2. examine whether OVC experience more risks and protective factors (stigma, child abuse, domestic violence, child labour, social support, socioeconomic standing) than non-OVC;
3. investigate whether any risk and protective factors mediate (heighten or buffer) effects of orphanhood group on psychological difficulties among the children affected by HIV/AIDS;
4. explore the interactive and cumulative effects of the risk and protective factors on psychological difficulties among children affected by HIV/AIDS.

2.10 Research Questions

From the literature reviewed and the aims of the present study, the following specific research questions were posed and addressed by the thesis:

- Question 1: What is the basic demographic composition of the sample? Are there differences between orphanhood groups on demographic factors?
- Question 2: Do children orphaned by AIDS experience more mental health problems than children orphaned by non-AIDS causes, children living with HIV/AIDS-infected parents and non-orphaned children? How do socio-demographic factors relate to psychological functioning?
- Question 3: Does socioeconomic statuses mediate any differences in mental health problems experienced by the different orphanhood groups of children?
- Question 4: Do stigma and discrimination factors mediate any differences in mental health problems experienced by the different orphanhood groups of children?
- Question 5: Do social support factors mediate any differences in mental health problems experienced by the different orphanhood groups of children?
- Question 6: Do domestic violence and child maltreatment factors mediate any differences in mental health problems experienced by the different orphanhood groups of children?
- Question 7: Do child labour and responsibilities mediate any differences in mental health problems experienced by the different orphanhood groups of children?
- Question 8: Are there any interaction effects between identified risk and protective factors? Do these factors combine to produce a cumulative, additive effect on the mental health of children affected by HIV/AIDS?

2.11 Research Hypotheses

1. Children affected by HIV/AIDS (orphaned by AIDS and children living with HIV/AIDS-infected parents) experience more mental health problems than children orphaned by non-AIDS causes and non-orphaned children even after controlling for relevant socio-demographic factors.
2. Socioeconomic status mediates associations between mental health problems and orphanhood groups.
3. Stigma and discrimination factors mediate associations between mental health problems and orphanhood groups.
4. Social support factors mediate associations between mental health problems and orphanhood groups.
5. Domestic violence and child maltreatment factors mediate associations between mental health problems and orphanhood groups.
6. Child labour and responsibilities mediate associations between mental health problems and orphanhood groups.
7. The interaction effects between identified risk and protective factors and orphanhood combine to produce a cumulative, additive effect on the mental health of children affected by HIV/AIDS.

CHAPTER THREE - METHODOLOGY

3.1 Research Design and Justification

Every research investigation is unique and it is the aims and focus of a study that determines the methodological research approach to use. The method adopted by a researcher influences the kind of data to be obtained and what analyses and interpretation readers would expect. Whereas there are no hard and fast rules regarding the use of either qualitative or quantitative approaches as research methods, each of these designs have their strengths and weaknesses. Quantitative methods are primarily rooted in the traditions of positivism and deductive logic that sees behaviours, feelings and attitudes quantified, counted, measured and analysed with appropriate inferential statistical tests to test hypotheses. Quantitative techniques simplify realities by reducing them to numbers and aim to answer “what” questions. The techniques employed in quantitative method are meant to help generalise the findings from a sample to the population making this approach more applicable on large scale samples and involves macro-level analyses. Objectivity, counting of numbers, reliability, validity, empiricism, statistical testing of hypothesis, replication of a study, and generalisation of findings are the hallmarks of quantitative techniques (Scandura & Williams 2000).

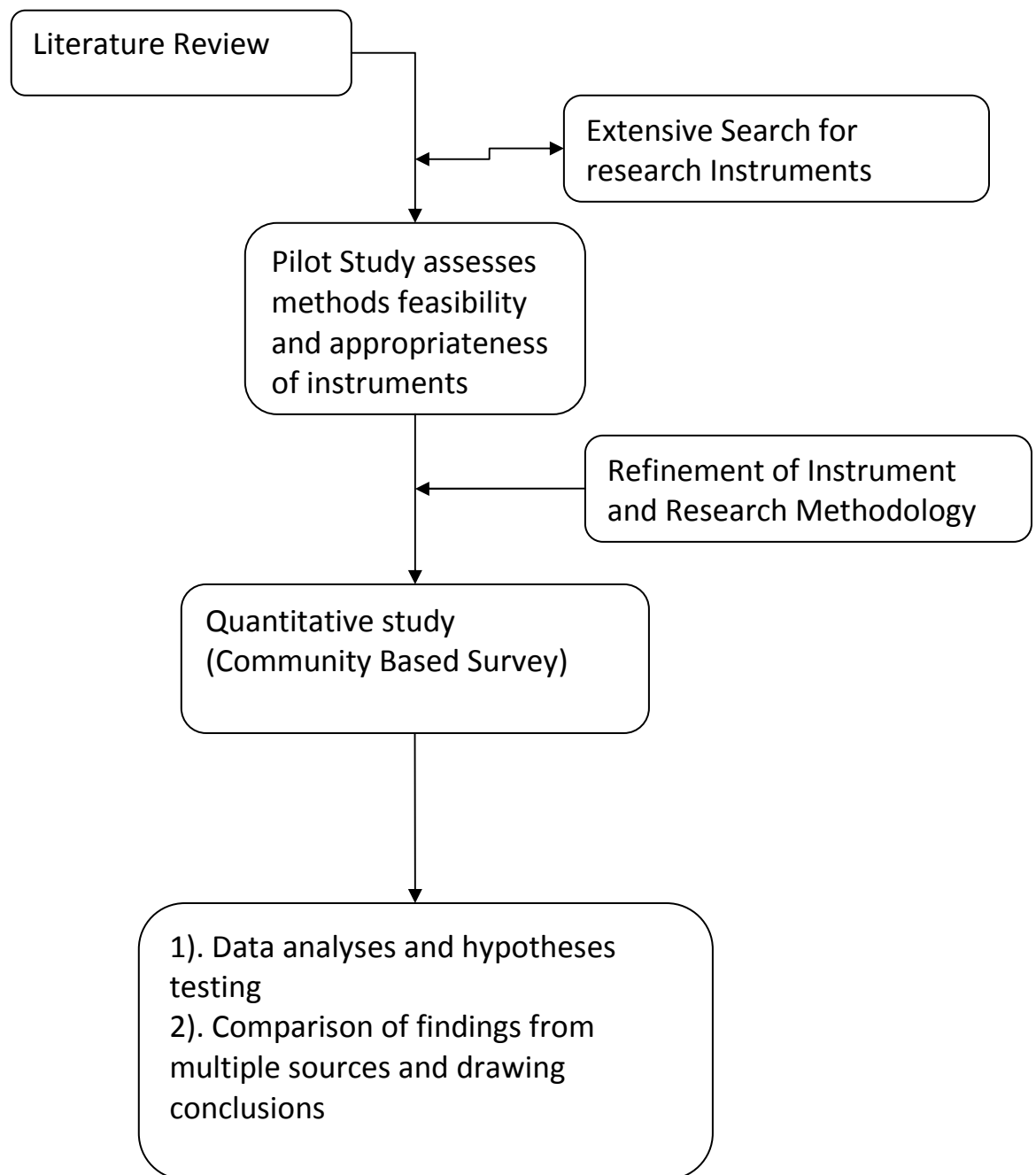
Qualitative methods on the other hand are subjective, flexible, theory based and interpretative in nature. It is a constructivist concept with notions of confirmatory analysis, credibility and dependability. Qualitative techniques are aimed at answering the “how” and “why” of behaviours and experiences by understanding, describing, discovering and exploring. Richer data are generated in qualitative studies by focusing on few participants in detail. Qualitative research primarily assumes that behaviours and experiences are not context free and therefore tries to understand people’s personal meanings and values in their real world. Mason (2002) suggested that qualitative research adopts a constructivist view on events with sensitivity to social contexts. This implies that the researcher in a qualitative study is located in the context of the participants which enhances his visibility to details of social, cultural processes and dynamism (Denzin & Lincoln 2008).

Clearly, both methods can study the same phenomenon but with different lenses (micro-level or macro-level) and answer different yet somewhat complementary questions that yield both comparable and parallel findings. Whilst qualitative techniques yield much

detailed and rich subjective data, the findings from the quantitative research are objective and can be generalised to a larger population.

The present study used a quantitative research method; specifically a community based cross-sectional survey design utilizing questionnaires. The quantitative evidence for increased mental health problems as noted from the review is limited. The cross-sectional survey was appropriate as the research questions explored in the study examined relationships between independent variables (vulnerability, parental death/illness, and childhood abuse) and dependent variables (externalizing and internalizing problems). The quantitative approach would generate good data to test the research hypotheses and gain a sense of mental health among the orphans and vulnerable children. The constraints placed by PhD study duration and funding needs further influenced the decision to conduct a cross-sectional survey. This non-experimental quantitative method is useful in examining events and variables that cannot be directly observed as is the case with the present study. Data triangulation was employed where data were collected from multiple sources (children and their caregivers or parents). In the present study, the fact that data analyses and interpretations were approached from two different perspectives to answer the research questions met the criteria for theory triangulation as proposed by Denzin & Lincoln (2008).

Diagram 1: The Research Process of the Present Study



3.2 Ethical Considerations and Approval

Ethical Approval

The present study was granted ethical approval by the Research Ethics Committee of the University of Glasgow. The fieldwork was conducted in Ghana and so local ethical approval was also granted from the Research Unit Ethics Review Committee of the Ghana Health Service prior to recruitment of caregivers and children. The researcher is an active member of both the British Psychological Society and the American Psychological Association, and therefore the strict ethical guidelines of these professional institutions concerning research with human subjects were adhered to. Copies of the approval letters from the two ethical review boards are presented in the appendices 5 and 6.

Ethical Considerations

The research techniques employed in this study, the sensitive nature of the research topic and the research area chosen for the study inspired the researcher to carefully respond to some critical ethical considerations. The present study aimed to generate reliable and valid data that borders on sensitive issues and private information that can sometimes be depressing. Moreover, the study participants involve children located within the context of HIV/AIDS. Besides, given the features of the Manya Krobo District (high HIV/AIDS prevalence, distinct culture, HIV/AIDS stigma and discrimination) it is paramount that strict ethical standards and respect for privacy are maintained to achieve good research. To summarise, considering that the study addresses a sensitive health issue among participants considered vulnerable, the following ethical issues were special points of focus:

Informed Consent

The study's fieldwork data collection started as a community based survey and the purposes, aims and details of the study were thoroughly explained to all the members in any prospective household visited. Participants were offered the opportunity to ask questions concerning any aspect of the study which were subsequently answered. Participants were also informed that there were no monetary rewards for taking part in the study. Where participants met the inclusion criteria, the investigators gave out copies of the information sheets. These were read and explained to the participants to allow for low literacy. Prospective participants were then allowed 30 minutes to consider the information and the research study. Thereafter, if potential participants were willing to participate in the study they were asked to sign a consent form to endorse their voluntary agreement to participate before completing the questionnaire. Only participants who consented were

recruited and answered the questionnaire. Since informed consent was taken from both the child and a parent or a nominated caregiver, no further consideration was made concerning assent for children under age of consent. As part of the parental consent, the parent or caregiver automatically assent for a named child (whether under age or not) as indicated on the informed consent form. The information sheets and the consent forms contained the contact details of the researcher and that of the local ethics committee. Participants were advised to call the researcher if they had further questions, comments or wished to seek clarifications and to contact the local ethics committee with any complaints. Copies of the information sheets and informed consent forms for both children and their caregivers or parents are presented in the appendices 1 to 4.

Anonymity using reference codes

Research in the health sciences has shown that where full anonymity is guaranteed and maintained participants are willing to provide responses that are accurate. Anonymity encompasses all efforts geared towards protecting the identity of participants from the data collected. Indeed it means that any information gathered is not attributable to the individual participants not only during the data collection process but also during analysis and dissemination of finding. Considering the very sensitive nature of the issue under investigation in the present study, reasonable steps were taken to ensure that the anonymity of participants was maintained to enhance valid response from participants. In this regard, the questionnaires were coded and given identity numbers instead of names. Secondly, the consent forms were detached from the questionnaires. Each consent form and its corresponding completed questionnaire were only linked together by the same unique code, the identity number. The researcher, however, had access to the details (names and addresses) of the participants but these were stored securely and separately from research data.

Confidentiality

The information gathered in this study was confidential and participants' identity remained anonymous. The anonymity of the questionnaires and their separation from the consent forms helped to ensure the confidentiality of participants. The children in the study were assured that their responses would not be seen by any one, including their parents or peers. Parents were also assured that the anonymity and confidentiality principles mean that any information they and their children provided would not be disclosed to others and their names would not be mentioned anywhere in any reports from the study. Additionally, data confidentiality was also adhered to as the contact details of participants, the coding system

and the data obtained were held separately in a password protected data bases. Any personal information on participants was removed from the data that was prepared for analyses.

Right to Withdraw

All prospective participants were informed, verbally and through the information sheet about the voluntary nature of this study. Participants were informed that it is their right to decide not to participate in the study or to withdraw at any stage of the data collection process. They were also helped to understand that it was their right not to answer any particular question if they wished not to answer it. Thus in this study the rights of both the children and their caregivers or parents to withdraw from the study were highlighted both verbally by the researcher and the fieldwork assistants during fieldwork, and the written information sheets given out.

3.3 Sample Size and Power Calculations

The target population included all young people in the Manya Krobo District of Ghana who are fluent in English and are between the ages of 8 to 18 years and their parents or primary caregivers.

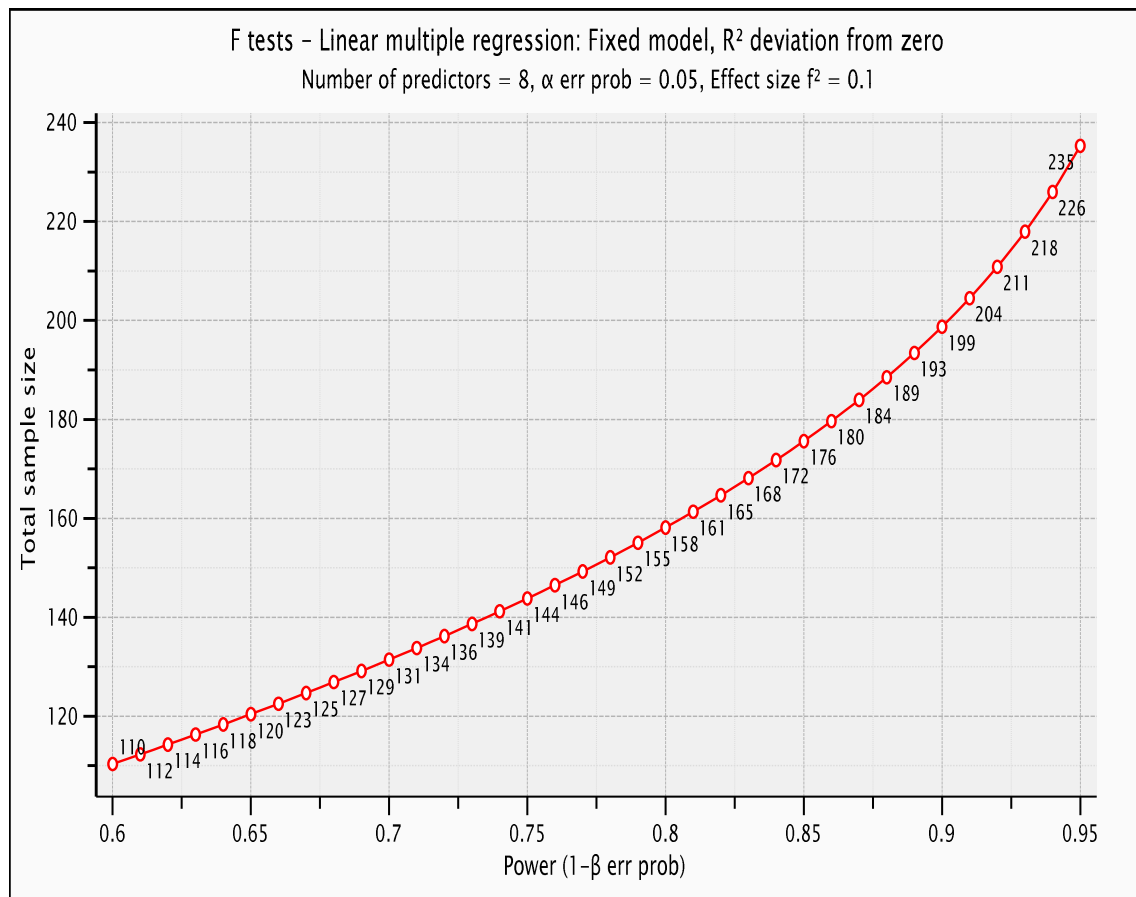
Sample size plays significant role in a study's precision. Adequate sample size helps to reduce risks of type II error. Chosen level of significance, the planned statistical analysis to be employed as well as expected effect size all have influences on the size of the sample. Cohen (1988) suggested using power analysis for calculating the required sample size before conducting a study. Power analysis evaluates risk of type II error (beta) and helps to achieve a statistically significant difference or relationship that actually exists. Power is the capacity of a study to detect differences and relationships that actually exist in the population. It is argued that traditional power calculations would not apply directly to studies that involve multiple comparisons (Cluver et al 2007). The present study involves 4 groups with several predictors and so a software program, GPower was used (Erdfelder, Faul & Buchner 1996). Although there were limited information on children affected by HIV/AIDS in Ghana, established norms and standardisations obtained in related studies using the SDQ in South Africa were used for power calculation prior to the study (Cluver et al 2009, Cluver et al 2007b). Based on using General Linear Models involving 8 predictors and working at .05 level of significance, it was estimated that a minimum

sample size of 59 children in each group of the 4 groups (237 in total) was sufficient to obtain power of 95% to detect a small effect (.10 effect size). See the graphs below for power calculation illustrations. The sample is however not powered to detect differences on gender, gender of parent who has died, single versus double orphans.

The studied sample included 286 with children living with HIV/AIDS-infected parents under sampled. The sample represented 83% of potential participants who met the inclusion criteria that were approached to take part in the study.

The sample consisted of 291 OVC from 286 families (of whom 186 were children affected by HIV/AIDS) and 100 controls. More than half (66%) of the children affected by HIV/AIDS came from the urban cities. Approximately half (50.9%) of the total participants were females. See detailed demographics table in the results section in chapter four. A flow chart of the sample studied and the reasons for non-participation are presented in Diagram 3.

Power Calculations Illustration Graph



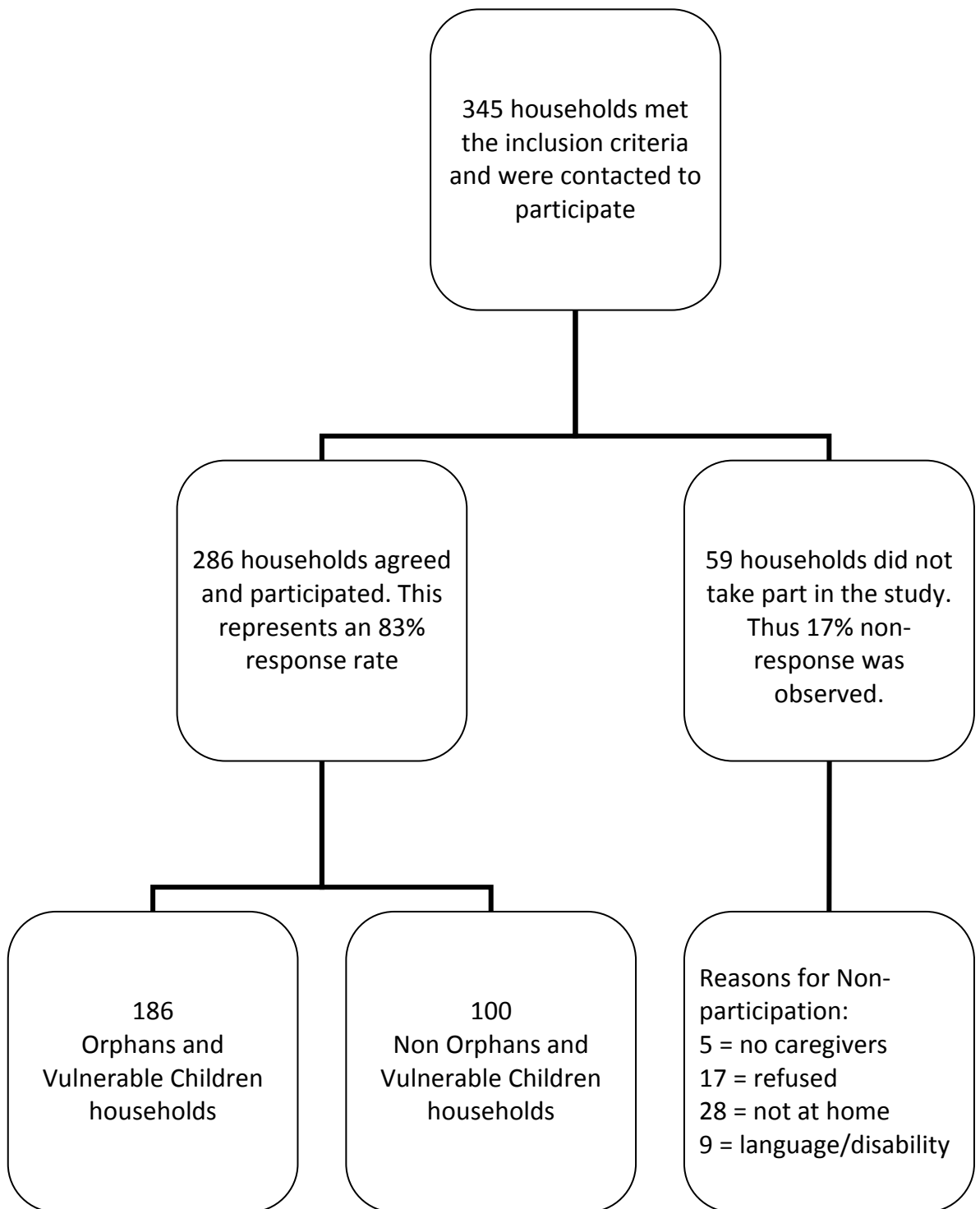


Diagram 2: A flow chart of Response of Participation

3.4 Inclusion Criteria

- Any child between the ages of 10 - 18 and their parent(s) or primary caregiver(s)
- For the “AIDS orphans group” the child should have lost either one or both parents (paternal, maternal or double orphan) to AIDS.
- For the “other orphans group” the child should have lost either one or both parents (paternal, maternal or double orphan) to causes other than HIV/AIDS.
- For the “living with infected parent group” the child should be living in a household with at least a parent or caregiver infected with HIV/AIDS.
- For the “non-OVC group” participants must not have had HIV/AIDS related illness or death in their families/households.
- The questionnaire required a certain degree of literacy and motivation, and so it was a requirement for all participants to exhibit a sound understanding of the English language. Pilot study evidence demonstrated that the items are easy to read, comprehend and relevant to the population. In the present study only 5 households could not reach the literacy requirement and were subsequently not surveyed. The implication of the English fluency requirement is discussed later in chapter 12 as a limitation.
- Informed written consent obtained from both the child and parent or caregiver.

Note:

1. OVC group consists of “AIDS orphans group”, “other orphans group” and “living with infected parent group”.
2. Cause of death and parental HIV-infection was determined by verbal autopsy - self-reported cases of parental HIV/AIDS status and death (see Appendix 11 for the verbal autopsy and parental HIV/AIDS status checklist).

3.5 Exclusion Criteria

- Foster children who were looked after by non-family members
- Institutionalised children - children living in orphanages and similarly care homes were also excluded. Whilst it is acknowledged that the proliferating of orphanages and their associated poor quality of care and living standards may affect mental health, they were excluded because the present study is community based and focuses on children living in households.

3.6 Measures

There are a range of measures used to capture mental health among children in developing countries and these have been largely self-reports (either gathering information from parents or children). Until recently there was no instrument that measures a broad spectrum of mental health variables in children in developing countries. A comprehensive literature search showed that about 26 different instruments were used in Africa to directly measure mental health among OVC (see Table 2.1. on page 43) Fourteen of these scales were western instruments which were often not adapted before use. Seven (7) tools were constructed specifically for particular studies and no further information was provided on the remaining 5. Researchers have questioned the validity and reliability of some of the instruments used in measuring mental health especially in African settings. Unfortunately, very few measures have been specifically developed and standardised for use within African cultures. Recently, Dawes & Snider (2006) proposed the *Vulnerability and Psychological Wellbeing Questionnaire*. The present study utilised this scale that was developed from eleven psychometrically sound measures of young people's mental health and associated contextual factors that were selected and combined to form the questionnaire

The variables that are covered in the questionnaire have empirical bases as previous investigation has revealed (Cluver, Gardner & Operario 2007). These variables were extensively shown as factors involved in young peoples' mental wellbeing. The questionnaire was not only drawn from well validated existing measures, it was piloted and adapted by Dawes & Snider (2006) for African cultures. As a primary consideration for selection of the individual measures, Dawes & Snider (2006) gave preference to measures that were specifically developed for young people or existing ones that were widely used on children, and are culturally appropriate for use in African settings.

Beside cultural relevance, the fact that the questionnaire yields a comprehensive assessment of mental health issues within an African context also influenced the choice of the tool for this study (Dawes & Snider, 2006). The questionnaire measures young peoples' context variables as well as their experience of the impact of the disease on their mental health. Furthermore, the language and wording were found to be child friendly and appropriate for African samples (Dawes & Snider, 2006). In addition the questionnaire as a whole had been standardised and was found to possess "sound psychometric properties, and had been used with cross-cultural samples and minority groups" (Dawes & Snider

2006, p.112) in several African countries including Ghana. Finally, the questionnaire's content, cultural appropriateness and suitability of individual items for mental health assessment among young people were formally and informally evaluated by several mental health experts, consultants and community members in Africa. The questionnaire has two versions, one for young people and the other for their parents or caregivers. As recommended by the questionnaire developers, the administration of the questionnaire items followed the same order for all respondents. See Table 3.1 for the framework of the questionnaire.

Table 3.1: Framework of the Vulnerability and Psychological Wellbeing Questionnaire component

Standardized tools and Foundations Of the Questionnaire	Authors
Rwandan Survey Scale	Boris et al 2006
Barber short Scale	Barber 2004, UNICEF 2005
Straus Child Tactics Scale (P-CCTS)	International Society on Prevention of Child Abuse & Neglect (IPSCAN 2006)
Demographic Health Survey (DHS)	ICAST-P
Relationship Problems Questionnaire (RPQ)	Minnis et al 2007
Survey of Activities of Young People	Burdlender & Bosh (2002)
Strength & Difficulties Questionnaire (SDQ)	Goodman, R., Renfrew, D., Mullick, M. (2000), Ruchkin et al (2004), SAHA
Child Depression Inventory (CDI)	Wild et al (2006)

3.7 Pilot Study

Burns and Grove (2001) argued that a feasibility study is crucial to check that research questionnaires are reliable and would yield valid responses. Concerning this project, a pilot study was undertaken prior to the main study to examine the appropriateness of the questionnaire and to make a preliminary test of some of the stated hypotheses. The questionnaire was tested for its comprehensibility and to identify any weaknesses to be addressed. A convenience sample of 69 respondents was recruited through the help of community leaders and was asked to complete the questionnaire. The respondents were instructed further to underline any confusing item or question and to make general comments on items that do not apply to them. Despite some major challenges encountered,

two focus group discussions were also held with a different group of conveniently selected respondents (one for children and another for parents and caregivers). On the focus discussion day participants first filled out the questionnaires before discussion proceeded. The discussion centred on pre-prepared questions that were asked and followed up with probes where necessary. The discussion questions include: how well did the instrument capture the things that are important to young people in very difficult circumstances? How well do you think other youth in Ghana will understand the questions? Which specific items are confusing or hard to understand?, which questions could potentially be upsetting to youth? Do you think we should not ask these questions...why or why not? how would you rephrase the questions so they are not so upsetting?, Are there any questions hard or difficult to answer?, should the questions be presented to children in English or translated into local Ghanaian languages?, and give your opinion of this set of questions in capturing the key issues affecting young people in difficult circumstances.

Overall, the finding was that the questionnaire items were comprehensible by majority of participants, although a few items seemed difficult for some participants. The respondents found the questionnaire suitable, non-distressing and easy to understand. Despite the sensitive nature of the research topic, the willingness of the respondents to take part in the study was overwhelming. The children seemed willing to participate even with more questions added. The instrument was found to capture the required information on children's wellbeing. There was generally a low level of missing data (less than .05%) on the risks and protective factors as well as the psychological outcomes. However, there were significantly more missing data on scales measuring socioeconomic status. More than 45% of children did not know either their parents' or caregiver's highest level of education. There were also large discrepancies between children's responses and those of their parents on items such as parental educational level and occupation. Overall a weak relationship was found between the parents' scores and the children ratings on socioeconomic status.

Some modifications made following the pilot study:

- The review of responses suggested that the quality of the questionnaire is improved with some modifications on items that the children found confusing or difficult to understand. These items were replaced with child friendly ones without compromising on their content.

- It was decided to conduct the study in English rather than translating the questionnaire into any local dialect because the great majority of the children found it comprehensible.
- There were a few other scales that were added based on feedback from the pilot studies. These include the Relationship Problems Scale to capture reactive attachment disorder (RAD), the Multidimensional Scale of Perceived Social Support and the McArthur Socioeconomic Ladder Scale. Details of these scales are discussed below. Table 3.2 presents a summary of the complete measures that were used in the present study. Copies of the questionnaires are presented in the Appendices 7 and 8. The variables investigated in the study and the appropriate measures included in the questionnaire that assessed them are discussed below.

3.8 The Final Instrument Used (the main contents) – Table 3.2

The questionnaire for the survey was organised in the following sections:

Demographics

Risks and Protective factors:

- Socioeconomic Indicators
- Experience of Stigma, Discrimination and Social Exclusion
- Social Connection
- Violence, Child Abuse and Corporal Punishment
- Child Work and Responsibilities
- Perceived Social Support

Psychological Outcomes:

- Delinquency and Risk Behaviours
- Internalising Problems: Depression (SDQ) and Self Esteem and Future Orientation
- Externalising Behaviours: SDQ
- Reactive Attachment Disorder (RAD)

Table 3:2 - Summary of measures used

Domain	Measure	Source of information	Reference
Stigma & Discrimination	Rwandan Survey Scale	➤ Child ➤ Caregiver	Boris et al 2006
Social Connection	Barber short Scale	➤ Child ➤ Caregiver	Barber 2004 UNICEF 2005
Violence, Child Abuse & Punishment	Straus Child Tactics Scale (P-CCTS)	➤ Child	International Society on Prevention of Child Abuse & Neglect (IPSCAN 2006)
	Demographic Health Survey (DHS)	➤ Child ➤ Caregiver	
	ICAST-P	➤ Caregiver	
Household Work and Responsibilities	Survey of Activities of Young People	➤ Child ➤ Caregiver	Burdclender & Bosh (2002)
Perceived Social Support	Multidimensional Scale Perceived Social Support (MSPSS)	➤ Child	Zimet, Dahlem, Zimet & Farley (1988)
Externalizing & risk Behaviours	Strength & Difficulties Questionnaire (SDQ)	➤ Child ➤ Caregiver	Goodman, R., Renfrew, D., Mullick, M. (2000), Ruchkin, Schwab-Stone & Vermeiren (2004)
	Social and Health Assessment (SAHA)	➤ Child	
Internalizing Problems, Self esteem & Future orientation	SDQ	➤ Child ➤ Caregiver	Goodman, R., Renfrew, D., Mullick, M. (2000)
	Child Depression Inventory (CDI)	➤ Child	Wild et al (2006)
Reactive Attachment Disorder	Relationship Problems Questionnaire (RPQ)	➤ Caregiver	Minnis et al 2007

3.8.1 Demographic data

This section of the questionnaire included items that asked respondents personal information about their age, gender, ethnicity and race, family size, number of other minors living at home, number of changes in residence and age at which children were orphaned (where applicable). There were also items regarding children's educational level as well as their present education status (presently at school or not).

3.8.2 Socioeconomic Indicators

Traditional Socioeconomic Measure (parental education and occupation): The parents and caregivers' responses to their highest level of education and occupation were assessed.

Material Affluence Indicators: Based on the Material Affluence Scale (MAS) developed by Doku et al (2009), respondents were asked to indicate the availability or otherwise and/or ownership of some basic household assets, assets characteristics and other related items such as car, house, tv, radio, number of rooms in the house etc. were summed up to yield one's MAS score. The items were found to have good consistency with Cronbach's alpha of 0.622. The MAS was found to be positively associated with the traditional socioeconomic measures (parental occupation and education). In the only validation study that exists, the scale was also found to predict health and health behaviours among adolescents (Doku et al 2009).

Perceived Socioeconomic Status: Youth perceived SES was assessed using the MacArthur Subjective SES ladder scale. The ladder comprised of 10 geographical rungs. The youth were asked to place themselves on the rung (level) where they think they stand (in terms of money, jobs and good schooling) relative to other people in the Manya Krobo Districts.

Perceived family prestige and respect: Youth perceived social position/prestige was assessed using the Community version of the MacArthur Subjective ladder scale. The ladder comprised of 10 geographical rungs. The youth were asked to place themselves on the rung (level) where they think their families stand in terms of respect, prestige and good standing relative to other people in the Manya Krobo Districts.

3.8.3 Stigma, Discrimination and Social Exclusion

The Stigma and discrimination subscale was an adapted version of items taken from the Rwandan Survey Scale. The items were found to have good consistency with Cronbach's alpha of 0.76. The measure captures sense of community stigma and discriminatory attitudes by exploring both the child and caregiver's perception and experiences of stigma and social exclusion (Boris et al 2006)

3.8.4 Social Connection

A brief version of the Barber Short Scale, revised, with alpha of 0.87 forms a subscale that measures social connection (Barber 2004). It identified the child's primary source of support and guidance as well as an indicator of the quality of the child's connectedness to this support source. The current UNICEF indicator of OVC connection to a caregiver also draws on this scale (UNICEF Guide 2005).

3.8.5 Violence, Abuse and Corporal Punishment

Items were taken from two previously validated measures (Conflict Tactics Scale and South African Demographic and Health Survey) to assess these variables. The Conflict Tactics Scale (CTS) was originally developed by Strauss to provide a measure of conflict resolution events that involve violence (Straus 1979) by obtaining data on possible dyadic combinations of family members. It has since been used in over 70,000 empirical studies and thoroughly evaluated in over 400 of them (Gershoff, 2002). The scale has strong construct validity. The CTS or any adaptation of it was found to have a reliability ranging from 0.77 to 0.95 and internal consistency between 0.22 and 0.70. The present study utilised an adapted versions of both parent-to-child and child-to-parent scales. The Child-to-Parent Conflict Tactics Scales (P-CCTS) assessed the child's experience of violence (direct and indirect), abuse, psychological aggression and corporal punishment within the household. Parents and caregivers' use of punishment and maltreatment in the home were captured by the Parent-to-Child: Punishment, Discipline and Violence (ICAST-P). There were also items from the South African Demographic and Health Survey specifically developed for developing countries (South African DHS 2003). These items obtained information on both the child and caregiver's exposure to community violence (both victimization and witnessing).

3.8.6 Household Work and Responsibilities

These variables were measured using the Survey of Activities of Young People (SAYP) developed by the Statistics South Africa Services to collect data on work-related activities among children. It provided a quantitative picture and an indication of the different categories of working children who were most in need or who are at the greatest risk of exploitation and employment (Burdlinger and Bosh 2002). In this regard, the SAYP was used in this study to measure and distinguish common child work roles to more critical at-risk activities of being absent at school to undertake household responsibilities or engage in begging, selling and other related child labour duties.

3.8.7 Multidimensional Scale Perceived Social Support (MSPSS)

This scale consists of 12 items measuring perceived social support from the family, friends and significant others. The scale is rated on a 5-point likert type ranging from strongly agree =5 to strongly disagree =1 with negated (no) items reversely scored. The scale yields 4 perceived social support scores: Family, Friends, Significant Others and Total. The MSPSS internal reliability were .91, .87 and .85 Cronbach's coefficient alpha for support from significant others, family and friends respectively. The present study found similarly high Cronbach's coefficient alpha of .80, .86, .91 and .88 for support from family, friends, significant others and total (full scale) respectively.

3.8.8 Externalizing Behaviours

Externalising behaviour was measured using subscales of the well validated Strength and Difficulties Questionnaire (SDQ). The SDQ is an internationally recognized measure, translated into 62 languages and used already in 40 countries (Goodman, 1997) to assess child emotional and behavioural difficulties or symptoms of maladjustment. The SDQ asks 25 items rated on a three-point likert scale divided between 5 sections: emotional symptoms, conduct problems, hyperactivity/inattention, peer problems and prosocial behaviours. Each of these sections of the SDQ has 5 items with rates that range from "Not True, Somewhat True, and Certainly True". Both a self completion version and an informant rated version (for completion by caregivers) were utilized. For each of the 5 sections the scores could range from 0 to 10. The summation of the emotional problems, conduct problems, hyperactivity/inattention and peer problems were then computed to

yield the total difficulties per participant which could range from 0 to 40. A higher score indicates greater difficulties.

3.8.9 Delinquency and Risk Behaviours

The externalising subscale of the Social and Health Assessment (SAHA) scale (Ruchkin, Schwab-Stone & Vermeiren, 2004) was used to measure children's engagement in antisocial behaviour, violence, substance abuse and potentially criminality activities. Children's engagement in these activities was measured by yes or no items. Participants were then asked to indicate how often they had engaged in these behaviours. The responses were on a 6-point Likert scale rating ranging from never to more than 6 times. The scale was found to have a Cronbach's alpha of 0.65. In a recent study in South Africa, 0.84 Cronbach's coefficient alpha was reported (Ward, Martin, Theron and Distiller 2007).

3.8.10 Internalizing Problems, Self esteem and Future Orientation

Self esteem and future orientation was measured using an adapted version of Child Depression Inventory with 10 items and alpha of 0.64 for the 10-item questionnaire. First published by Maria Kovacs in 1992, the CDI is a symptom-oriented instrument for assessing depression in children (Kovacs, 1992). The CDI has been extensively used in both clinical and research settings and found to exhibit good psychometric properties. The CDI internal consistency coefficients range from 0.71 to 0.89 and the test-retest coefficients range from 0.74 to 0.83 when used among African children (Wild et al, 2006). The instrument has also been used in epidemiological studies on depression in young people. In children, the scale is also used in the assessment of post-traumatic stress syndromes and dissociative symptoms.

3.8.11 Relationship Problems Questionnaire

This is a 10-item parent-report instrument. The scale measures reactive attachment disorder (RAD) among children. It has been used in large generalpopulation studies (Minnis, Young, O'Connor, et al 2007). In an earlier study, the scale's internal consistency was found to be .85 among Scottish children (Minnis et al 2002).

3.9 Data Collection Process

3.9.1 Recruitment Strategy

The sampling frame for the study included all communities situated within the administrative jurisdiction of the Lower Manya Krobo district. As explained earlier the district was purposively selected for the study because it has the highest HIV/AIDS prevalence rate within Ghana. A stratified three-stage probability sampling technique was used. First, the 54 communities within the district were stratified according to residential clusters, namely 30 Rural clusters and 24 Urban clusters, based on existing geographical and population data. This was intended to reflect the diversity of socio-economic status of the participants. Secondly, communities were randomly selected from each cluster for participation in the study. Thirdly, a simple systematic sampling technique was used where starting from a known central point in each selected community, every sixth household in respective directions (East, West, North, and South) was selected for possible inclusion into the study. Then within each community, a limit of 30 was placed on the number of households recruited. This was done to minimise the effects of over-representation from particular communities. However, there were problems in obtaining enough data from participants using this systematic random sampling technique. Unfortunately, it was observed that this technique was not yielding a good response rate because of certain practical concerns that were encountered during the fieldwork data collection some selected communities. A primary example was the difficulty in meeting prospective young people and their parents/caregivers at home to carry out the investigation, and this meant that several subsequent visits to households were most times made before a single data was collected. In the rural communities, the settlements were unplanned and distances between households were found to be lengthy. These several follow up visits were not only tiring and time consuming but also largely unsuccessful undertakings leading to a low response rate, far lower than estimated. With half the estimated fieldwork time spent only 25% of projected respondents were recruited. Another recruitment method, total sampling, was therefore employed to ensure higher participation. Thus the systematic random sampling technique was abandoned mid-way through the fieldwork data collection due to practical issues encountered during the data collection in favour of a total sampling technique whereby every household in selected communities were approached and asked to participate in the study. In this regard different communities (2 each from rural and urban settings) were randomly selected for the total sampling surveys. This sampling procedure is justified for reasons of feasibility, cost-effectiveness, and accessibility. The data

gathered from the earlier systematic procedure was also included in the final data for analyses. Because the proportion of rural and urban communities was the same in the systematic random sampling phase and the total sampling phase (equal numbers of rural and urban), it was possible to combine data gathered from these two phases in the final data for analysis.

3.9.2 Procedure

As part of the entry strategy an introductory letter with copies of the research information sheets were sent to all local authorities and chiefs in the selected communities (Electoral Areas). In each selected community, a meeting was held with the chief, council of elders and opinion leaders to discuss the investigation. At the meetings, the details of the study, the procedures involve, risks and challenges and the time frame were explained and community support sought. The processes of recruiting participants as well as the potential benefits of the study were also discussed. The fieldworkers/research assistants were introduced to the community at the meetings as well. The assistants were graduate psychology students at the University of Ghana. The community were made to be aware that taking part in the study was purely voluntary and not compulsory. The chief and elders were encouraged to inform the entire community about the study through the town crier. Thus these meetings, as part of the project strategy, were used to introduce the selected communities to the study, help them to understand the purpose of the study, publicize and answer questions about the study as well as to win the support of each selected community.

Each participating child and their caregivers/parents completed a survey questionnaire that followed the steps described by Thomas (2006). First the details of the study were explained to virtually all members of any visited household. The voluntary nature of the study was explained and prospective respondents assured of the confidentiality of any information gathered. Questions were then taken from all members present, following which the inclusion criteria checklist was administered to the head of the household or any adult that volunteered. Where the inclusion criteria were met by any child and a caregiver or parent, they were asked to participate in the survey. At this point they were given the information sheet that spelt out the details of the study and the procedures involved. There were separate information sheets for children and parents or caregivers that were given out. When both the child and the caregiver or parent were willing and agreed to participate then they were asked to sign the consent forms. They were made to understand that signing the forms means that they agreed that the study and its procedures were thoroughly explained

to them and they understood them. Once consent was obtained from the participants, then the child and the parent/caregiver were separated and each moved to a quiet place for the survey questionnaire to be filled with one of the investigators (either the researcher or the assistant). Copies of the inclusion criteria checklist, information sheets and consent forms are presented in the appendices 1 to 4 and 10.

Each participant's involvement in this study involved a one-on-one completion of the questionnaire that measured various aspects of mental health and contextual variables. The items were read out to the participants and their responses were written by the researcher. This technique is a bit intrusive and offers less privacy regarding responses yet it was adopted to enhance response rate and legible completion of questionnaires. The entry strategy used and the good rapport established at initial contacts helped minimise bias in the responses from participants. Participants generally completed the questionnaire with the researcher or research assistant alone and the presence of other family members was strongly discouraged. During the data collection process, necessary clarification or instruction was provided promptly when requested. Although the survey was conducted in English, some clarifications were made in the local dialects where necessary. There were also some participants (n=16) who had low levels of English that were assisted largely in the relevant local dialects by the investigators. At the end of the survey participants were thanked by the investigators. Finally, participants were offered the opportunity to ask any questions or seek clarification concerning any aspect of the investigation if required. The entire assessment inventory took about 30 to 45 minutes to complete. Two participants were thought to require urgent psychological help because they raised concerns of suicidal ideation and so they were referred to a community mental health nurse.

The questionnaire responses were anonymised, however as required by ethics committee standards and data protection laws, participants survey questionnaires and the consented form were linked together by identifiable reference codes. The young people and not parents/caregivers who participated in the study received compensation for their participation in the form of £2 equivalent in Ghanaian cedis (GHC5). Since participants were not promised any reward prior to the study this token does not violate any ethical standards on financial inducement.

3.10 Data Entry and Cleaning

The data was initially entered into Microsoft excel. To protect patient confidentiality, three computerised password protected databases were set up. Two databases were set up in excel; one database was used for recording questionnaire completions with participant demographic characteristics, and the second one was used for entering the questionnaire data. The third database in SPSS was used for data analyses of the questionnaire data were imported from the second database in excel. The accuracy, validity and completeness of the data entry were checked at regular intervals. The preliminary data auditing involve checking for domain format errors, irregularities, missing values, duplicates, invalid tuple, constraint violation and missing tuple. Descriptive data screening for distribution and skewness revealed some non-normally distributed data for some outcome measures that were subsequently transformed into categorical variable for analysis.

3.11 Data Analyses' Assumptions

Mainly parametric tests are used for the analyses of the research data in the present study. Parametric tests make assumptions about ratio or interval scale of measurement, normality of distribution, homogeneity of variances and independent errors. These assumptions ensure that the samples used in a study have the same characteristics as the population of concern. Consequently, the assumptions place useful constraints on the interpretation of research findings and strengthen inferences drawn about the population on the basis of samples. The present study tested for both normality and homoscedasticity. Test for normality using Shapiro-Wilk was significant ($p < .01$) for self-esteem, peer problems, delinquency and prosocial behaviours indicating that these distributions are not normal. Levene's test for homogeneity of variance showed unequal variances ($p < .05$) for peer problems, self-esteem and prosocial behaviours. These outcome variables were analysed without any transformation because parametric tests are robust to violations of these assumptions. However, since this practise is contested in the behavioural sciences, caution should be taken in generalising the findings from these analyses.

Equally worth mention is the fact that throughout the analyses bonferroni test was chosen for multiple comparisons in where ANOVA showed significant difference. Compared to other multiple comparison tests, the bonferroni test is usually conservative and has robust procedures that make it difficult to reject the hypothesis of no difference when there are

real differences. The bonferroni test is flexible and has the advantage that it can be used in any multiple testing situations.

3.12 Analysis Strategy

The data analysis was performed using SPSS 17.0 for Windows and the results are presented in chapters 4 - 11 of this thesis. All inferential statistical analyses were two-tailed and significance was set at 99% level ($p < .01$) because of the several multiple analyses that were undertaken. The analyses employed in answering each of the 8 research questions are detailed below. These analyses were carried out systematically, procedurally and progressing from answering questions one to eight as positive outcomes are found.

Question 1: What is the basic demographic composition of the sample? Are there differences between orphanhood groups on demographic factors?

In answering these questions, first basic frequencies, percentages and mean tests were carried out to examine the overall descriptive characteristics of the sample on such variables as gender, religion, ethnicity, educational level and age of the overall sample. Second, differences between orphanhood groups on the socio-demographic characteristics were assessed using independent sample t-tests and one-way ANOVA for continuous variables, and chi squared tests for categorical variables. Tables 1 and 2 show the outcomes of these analyses.

Question 2: Do children orphaned by AIDS experience more mental health problems than children orphaned by non-AIDS causes, children living with HIV/AIDS-infected parents and non-orphaned children? For OVC how do socio-demographic factors relate to their psychological functioning?

Question two involves 3 key factors: psychological outcomes, socio-demographic factors and orphanhood groups. The analyses followed 4 key steps. First, the relationships between the various socio-demographic factors and the continuous psychological outcomes were examined. These were assessed using independent t-tests (for categorical variables such as gender and being presently in school) and Pearson bivariate correlations, chi-squared and ANOVA (for continuous socio-demographic such as age, household size and number of children at home). Differences between the orphanhood groups on socio-demographic factors were established in question one.

Second, linear regression was performed to develop models that investigate the association between orphanhood types and psychological outcomes without controlling for any socio-demographic factors. This was done independently for children orphaned by AIDS, other-orphaned and living with HIV/AIDS-infected parents compared to non-OVC for each of the psychological outcomes. Since the psychological outcomes were predicted by orphanhood groups, the third step was to conduct adjusted multivariate linear analyses (models). These second models examined the association between orphanhood groups and psychological outcomes when controlling for all relevant socio-demographic co-factors. These models established whether psychological outcomes among the orphanhood groups persist independently of socio-demographic co-factors. Inclusion of socio-demographic co-factors into the models was guided by their significant association ($p < .05$) with the psychological outcome or significant differences between the orphanhood groups.

Third, proportions of children scoring within the clinical range using standardized recommended clinical cut-off scores for each of the psychological outcome scales were investigated. The analyses compared children living with HIV/AIDS infected parents, children orphaned by AIDS and other orphans to non-OVC. Where possible, comparisons were not only made to established norms but also to findings that were reported in other investigations. Steps 1 to 3 were performed independently on children's self-report as well as caregivers and parents reports. Finally, paired sample statistics and Pearson bivariate correlations were used to establish whether reports of young people differed from those of their parents and caregivers. The outcome of the analyses at this stage helped to structure the remaining empirical analyses, each dealing with one of the key risk and protective factors captured in the study. This implies that the following analyses were carried out because positive results are obtained for question 2.

Question 3: What socioeconomic indicators are mediating any differences in mental health problems experienced by the different groups of children?

The significant associations between orphanhood groups and psychological outcomes expected in question two above, were found to exist independently of socio-demographic factors. The current question explored the potential mediating effect of socioeconomic status on these associations. It examined whether these associations persist independently of socioeconomic status and socio-demographic factors. The analyses first established the relationship between orphanhood groups and socioeconomic status, and between

socioeconomic status and psychological outcomes. Differences between the orphanhood groups on socioeconomic status were assessed using ANOVA. Bivariate correlations were used to examine the association between socioeconomic status and psychological outcomes. Second, models were developed where the mediating effect of socioeconomic status on the association between orphanhood groups and each psychological outcome after controlling for socio-demographic factors was examined using multivariate linear regressions. That is, the models developed here controlled for socio-demographic factors and socioeconomic status. Finally, the coefficients of these models (that controlled for both socio-demographic factors and socioeconomic status) were compared to the models that controlled for only socio-demographic factors. Any significant reductions in the coefficients between these models were suggestive of a potential mediating effect of socioeconomic status (Cluver 2007 PhD thesis) on the association between orphanhood groups and psychological outcomes. Finally, Sobel tests were conducted to formally investigate any suggested mediation effects.

Question 4: What stigma and discrimination factors are mediating any differences in mental health problems experienced by the different groups of children?

The aim of the present analyses is to establish whether stigma and bullying mediate the association between orphanhood groups and mental health controlling for socio-demographic factors. The analyses followed 4 key steps. First, the relationships between orphanhood groups and stigma and bullying, and between stigma and bullying and psychological outcomes were examined. One-way ANOVA was used to determine the differences between orphanhood groups on stigma and bullying while bivariate Pearson correlation was used to investigate the association between stigma and bullying and psychological outcomes. Associations between socio-demographic factors and stigma were also determined using t-tests, ANOVA and chi-squared tests. The next step was to investigate the potential mediating effect of stigma and bullying on the significant association between each orphanhood groups (compared with non-OVC) and psychological outcomes after controlling for socio-demographic factors. Multivariate Linear Regression analyses were conducted on each of the psychological outcomes to develop adjusted models that accounted for socio-demographic factors and stigma and bullying. Because this model has two indicators: stigma and bullying, the analyses employed backward elimination to achieve parsimonious models by identifying and eliminating factors not contributing significantly to the model on each of the psychological outcomes. In this case bullying was eliminated. Finally, the coefficients of these models

(that controlled for both socio-demographic factors and stigma) were compared to the models that controlled for only socio-demographic factors. Any significant reductions in the coefficients between these models were suggestive of potential mediating effect of stigma (Cluver 2007) on the association between orphanhood groups and psychological outcomes. Finally, Sobel tests were conducted to formally investigate any suggested mediation effects.

Question 5: What social support factors are mediating any differences in mental health problems experienced by the different groups of children?

The present analyses aim to establish whether social support mediates the association between orphanhood groups and mental health controlling for socio-demographic factors. The analyses followed 3 key steps. First, the relationships between orphanhood groups and social support, and between social support and psychological outcomes were examined. One-way ANOVA was used to determine the differences between orphanhood groups on social support while bivariate pearson correlation was used to investigate the association between social support and psychological outcomes. Associations between socio-demographic factors and social support were also determined using t-tests, ANOVA and chi-squared tests. The next step was to investigate the potential mediating effect of social support on the significant association between orphanhood groups and psychological outcomes after controlling for socio-demographic factors. Multivariate Linear Regression analyses were conducted on each of the psychological outcomes to develop adjusted models that accounted for socio-demographic factors and social support. The social support has three subscales: family, friends and significant others and so the analyses employed backward elimination to achieve parsimonious models by identifying and eliminating factors that were not contributing significantly to the model on each of the psychological outcomes. In this case all the three subscales were retained. Finally, the coefficients of these models (that controlled for both socio-demographic factors and social support) were compared to the models that controlled for only socio-demographic factors. Any significant reductions in the coefficients between these models were suggestive of a potential mediating effect of social support (Cluver 2007) on the association between orphanhood groups and psychological outcomes. Finally, Sobel tests were conducted to formally investigate any suggested mediation effects.

Question 6: What domestic violence and child maltreatment factors are mediating any differences in mental health problems experienced by the different groups of children?

The aim of the current analyses is to establish whether domestic violence and child maltreatment mediate the association between orphanhood groups and mental health controlling for socio-demographic factors. The analyses followed 3 key steps. First, the relationships between orphanhood groups and domestic violence and child maltreatment, and between domestic violence and child maltreatment and psychological outcomes were examined. One-way ANOVA was used to determine the differences between orphanhood groups on domestic violence and child maltreatment while bivariate Pearson correlation was used to investigate the association between domestic violence and child maltreatment and psychological outcomes. Associations between socio-demographic factors and domestic violence and child maltreatment were also determined using t-tests, ANOVA and chi-squared. The next step was to investigate the potential mediating effect of domestic violence and child maltreatment on the significant association between orphanhood groups and psychological outcomes after controlling for socio-demographic factors. Multivariate Linear Regression analyses were conducted on each of the psychological outcomes to develop adjusted models that accounted for socio-demographic factors and domestic violence and child maltreatment. The domestic violence and child maltreatment has four subscales: domestic violence, physical abuse, neglect and psychological abuse, and so the analyses employed backward elimination to achieve parsimonious models by identifying and eliminating factors that were not contributing significantly to the models on each of the psychological outcomes. In this case all the four subscales were retained. Finally, the coefficients of these models (that controlled for both socio-demographic factors and domestic violence and child maltreatment) were compared to the models that controlled for only socio-demographic factors. Any significant reductions in the coefficients between these models were suggestive of potential mediating effect of domestic violence and child maltreatment (Cluver 2007 PhD thesis) on the association between orphanhood groups and psychological outcomes. Finally, Sobel tests were conducted to formally investigate any suggested mediation effects.

Question 7: What child labour factors and responsibilities are mediating any differences in mental health problems experienced by the different groups of children?

The purpose of the present analyses was to establish whether child labour and responsibilities mediate the association between orphanhood groups and mental health controlling for socio-demographic factors. The analyses followed 3 key steps. First, the relationships between orphanhood groups and child labour and responsibilities, and

between child labour and responsibilities and psychological outcomes were examined. One-way ANOVA was used to determine the differences between orphanhood groups on child labour and responsibilities whiles bivariate Pearson correlation was used to investigate the association between domestic violence and child maltreatment and psychological outcomes. Associations between socio-demographic factors and child labour and responsibilities were also determined using t-tests, ANOVA and chi-squared. The next step then investigated the potential mediating effect of child labour and responsibilities on the significant association between orphanhood groups and psychological outcomes after controlling for socio-demographic factors. Multivariate Linear Regressions were conducted on each of the psychological outcomes to develop adjusted models that accounted for socio-demographic factors and child labour and responsibilities. Child labour and responsibilities has three subscales: caring responsibilities, household chores and paid labour, and so the analyses employed backward elimination to achieve parsimonious models by identifying and eliminating factors that were not contributing significantly to the models on each of the psychological outcomes. In this case all the three subscales were retained. Finally, the coefficients of these models (that controlled for both socio-demographic factors and child labour and responsibilities) were compared to the models that controlled for only socio-demographic factors. Any significant reductions in the coefficients between these models were suggestive of potential mediating effect of child labour and responsibilities (Cluver 2007 PhD thesis) on the association between orphanhood groups and psychological outcomes. Finally, Sobel tests were conducted to formally investigate any suggested mediation effects.

Question 8: Are there any interaction effects between identified risk and protective factors? Do these factors combine to produce a cumulative, additive effect on the mental health of children affected by HIV/AIDS?

As positive results regarding the mediating effects of key contextual factors on the associations between orphanhood groups and psychological outcomes are expected, the final analyses examined the cumulative and interactive effects of these factors. Although several psychological outcomes were examined in this thesis, these final analyses examined only the key mental health variables of concern to the children, namely delinquency, self esteem, RAD and depression. First principal component analysis (PCA) was conducted on the SDQ subscales which yielded good factor loads of between .78 and .83 with a moderate Cronbach alpha of between .55 and .64. This permitted any of the subscales to be randomly selected for analyses. However, depression (emotional subscale)

was chosen because the previous analyses indicated that it is of more concern among the children than any other subscale. Additionally the subscale has the best inter-informant correlation.

It was then decided to use log-linear analyses over other pattern seeking analyses tools because it allows for simultaneous, cumulative and mutual relationships among variables to be identified. Log-linear analysis does not assume a particular direction of causality. Additionally, it can be used without predetermined models or pre-specified hypothesis. Finally backward elimination can be employed in log-linear analyses to yield parsimonious models.

In log-linear analysis, however, continuous variables cannot be used and so, in conducting the analyses, all four psychological outcomes were recoded dichotomously, generally using the recommended clinical cut-off points (abnormal), where available. Concerning RAD definitive clinical cut-offs for use in the general population are not yet established for the RPQ, therefore, in discussion with the author, it was decided to use the mean RPQ score across all the groups as a cut-off. Similarly, mean scores on the delinquency and self-esteem scales were used as cut-offs. Several risk factors were inputted into log-linear analysis. Multivariate logistic regression was therefore used where all the potential risks factors (18 variables) were entered as independent variables and each psychological outcome as the dependent variable controlling for age and gender. Backward elimination identified stigma, neglect, physical abuse, caring responsibilities, orphanhood, psychological abuse and paid labour as significant variables. These identified variables were re-coded as dichotomous variables for the log-linear analyses. Mean scores on each of these variables were used as the cut-off for the dichotomous recoding. For example stigma was re-coded as “less stigma” and “more stigma” meaning less than or more than the mean scores respectively. Log-linear analyses with hierarchical modelling with backward selection yielded several models with sound fits. However, the discussion focused on only those interactions that involved the mental health outcome under consideration.

Finally chi-square analysis was used to examine the associations between the variables within the identified interactions. These same steps were followed to analyze each of the dependent variables separately as well (RAD, delinquency, depression and self-esteem).

CHAPTER FOUR – SOCIO-DEMOGRAPHIC FINDINGS

What is the basic demographic composition of the sample? Are there differences between groups on demographic factors?

Age of young children

ANOVA shows significant differences [$F(287, 3) = 21.131; p < .001$] in the group mean ages of the four groups. These differences, assessed by multiple comparisons using bonferroni, show that non-orphaned children were younger than AIDS-orphaned ($t = 2.254, p < .001$), other-orphans ($t = 1.560, p < .001$) and children living with HIV/AIDS-infected parents ($t = 3.310, p < .001$). Similarly, children living with HIV/AIDS-infected parents were older than AIDS-orphaned children ($t = 1.056, p < .05$) and other-orphans ($t = 1.750, p < .001$), with no other differences between groups. Age was therefore controlled for in all the analyses. There was, however, no difference between boys and girls on age.

Gender

Overall, the sample consisted of 148 girls (50.9%) and 143 boys (49.1%). There were no significant differences between the orphanhood groups on gender and there were approximately equal numbers of boys and girls recruited from both rural and urban areas.

Age first bereaved

Other-orphaned children (Mean = 8.81, SD = 3.456) were older than AIDS-orphaned (Mean = 6.27, SD = 4.339) at the time of first bereavement [$t(df = 134) = 2.751; p < .01$]. Four AIDS-orphans and one other-orphan could not tell how old they were when their parents died.

Type of parental lost

Among the AIDS-orphaned children, 33.8% were maternally bereaved, 37.8% paternally bereaved with 28.4% losing both parents (double orphans). Within the other-orphaned group, 34.3% were maternal orphans, 41.8% paternal orphans and 23.9% double orphans.

Changes in residence

There are significant differences between the orphanhood groups on children's movement/changes in residence [$F(3, 287) = 23.844, p < .001$]. Other-orphaned children have moved between homes more than children living with HIV/AIDS-infected parents ($t = 1.370, p < .001$) and non-orphaned children ($t = 1.740$). Similarly, AIDS-orphans have also moved between homes more than children living with HIV/AIDS-infected parents ($t = 1.037$) and non-orphaned children ($t = 1.407$), both at $p < .001$ with no other differences between groups. Overall, 62% of all children had moved between 2 or more times (55% of non-orphans, 53% of AIDS-orphans, 85% of other-orphans and 56% of HIV/AIDS-infected parents).

Ethnicity

Sixty-three percent of all children are of the Dangme/Krobo ethnic background (63% of non-orphans, 60% of AIDS-orphans, 73% of other-orphans and 56% of sick children). There were 8% of Akan/Twi ethnicity, 11% of Ewe, 10% of Northerners and 8% of others.

Household size

The entire sample had a mean household size of 4.32 ($SD = 1.171$) with significant differences between the groups. Non-orphaned children are living in households larger than AIDS-orphans ($t = 1.250, p < .001$), other-orphans ($t = 0.711, p < .001$) and children living with HIV/AIDS-infected parents ($t = 1.020, p < .001$). Other-orphaned children live in household size larger than AIDS-orphaned children ($t = 0.539, p < .01$) with no other differences between groups. The average number of children per household was 1.84 ($SD = 1.173$); Non-orphaned families have significantly lower children per household than AIDS-orphans ($t = 0.736, p < .001$), other orphans ($t = 1.014, p < .001$) and households with HIV/AIDS-infection ($t = 1.230, p < .001$). Similarly, children in HIV/AIDS-infected families live with more other children than AIDS-orphans ($t = 0.494, p < .01$). About 41% of the children (46% of non-orphans, 37.8% of AIDS-orphans, 40.3% of other-orphans and 38% of those living with HIV/AIDS-infected parents) reported that their parents or caregivers owned their dwelling place and 17.5% did not know the ownership status of their homes. There were no differences between the groups on dwelling ownership/type (rented or owned).

Parental unemployment

Children's reports indicated that the majority of parents and caregivers (62%) worked mainly in farming, driving, trading or as artisans (carpentry, masonry, bead making). Eleven percent of parents worked in the formal sector (employment which offer regular wages and hours, which carry with them employment rights, and on which income tax is paid) whilst approximately 13% of them were unemployed. The proportion of households with unemployed parents was higher among children living with HIV/AIDS-infected parents (38%) than AIDS-orphans (9.5%), other-orphans (9%) and non-orphaned children (7%). From the children's self reports about 10% of other-orphaned children (representing 2.4% of the entire sample) did not know their parents occupation.

Religion

In the sampled about 56% of the children (69% of non-orphans, 49% of AIDS-orphans, 45% of other-orphans and 56% of those living with HIV/AIDS-infected parents) indicated that they were Christians, 11% Islam, 20.3% Traditional/African beliefs and 12.7% belonging to other faiths. The orphanhood groups differed significantly on religion [$\chi = 36.271$, $p < .001$] and so it was controlled for in subsequent analyses.

Education

The majority of the children sampled (81.8%) were currently attending school. Approximately 28% of children living with HIV/AIDS-infected parents, 16% of other-orphans, 26% of AIDS-orphans and 9% of non-orphaned children were not in school (See graph below). About 75% had attained primary or junior secondary level education and 12.7% vocational or technical education. Concerning parental/caregiver educational level, approximately 58% of them had no more than senior secondary level education. Interestingly, from the children's self reports 16.5% (9% of non-orphans, 28.4% of AIDS-orphans, 22.4% of other-orphans and 6% of children living with HIV/AIDS-infected parents) did not know the educational attainment of their parents and caregivers.

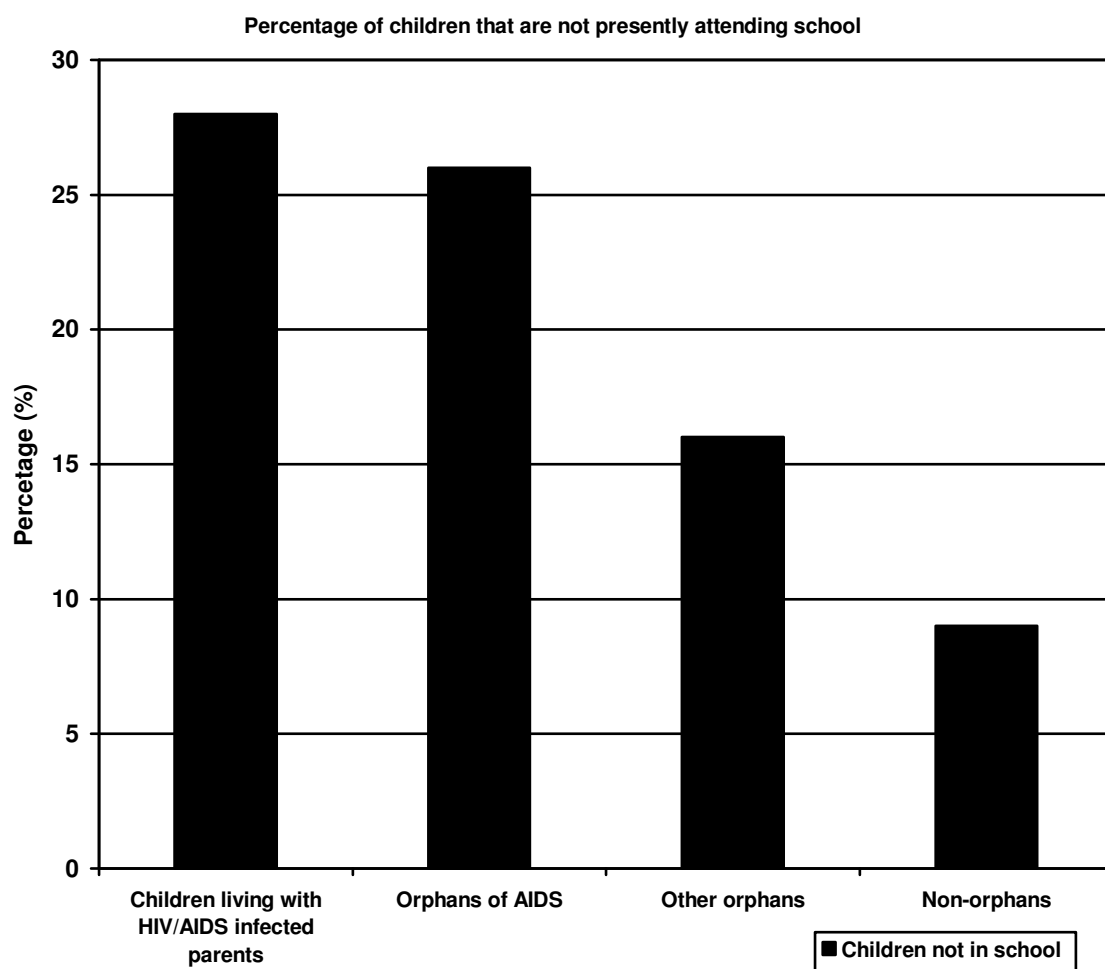


Table 4.1: Characteristics of the entire sample of participants

Number of Children: n = 291		Number of carers: n = 286	
Age:		Age bereaved:	
Mean (SD)	13.03 (2.866)	Mean (SD)	7.48 (4.131)
Gender:		Child currently attending school:	
Girls	148 (50.9%)	Yes	238 (81.8%)
Boys	143 (49.1%)	No	53 (18.2%)
Ethnicity:		Carer education:	
Dangme/Krobo	182 (63.2%)	Primary	111 (38.1%)
Akan	23 (7.9%)	Secondary	98 (33.7%)
Ewe	32 (11%)	Tertiary	33 (11.3%)
North	28 (9.6%)	Unknown	49 (16.8%)
Others	24 (8.2%)		
Household size: Mean (SD)	4.32 (1.171)	Carer occupation	
No. of changes in residence:		Unemployed	39 (13.4%)
Mean (SD)	2.17 (1.660)	Unskilled manual	115 (39.5%)
No. of siblings:		Skilled manual	78 (26.8%)
Mean (SD)	1.84 (1.173)	Prof. (non mgt)	35 (12%)
Place of residence:		Prof (mgt)	17 (5.8%)
Rural	137 (43.6%)	Unknown	7 (2.4%)
Urban	164 (56.4%)		
Main Carer:		Religion of child	
Mother	33 (11.3%)	Catholic/Ortho	69 (23.7%)
Father	37 (12.7%)	Pentecost/Charis.	94 (32.3%)
Both Parents	119 (40.9%)	Islam	32 (11%)
Queen mother	33 (11.3%)	Traditional	59 (20.3%)
Relative	58 (19.9%)	Others	37 (12.7%)
Others	11 (3.8%)		
Educational level:		Parent lost:	
Primary	111 (38.1%)	Mother	48 (16.5%)
Junior Secondary	106 (36.4%)	Father	56 (19.2%)
Senior Secondary	27 (9.3%)	Both	37 (12.7%)
Tertiary	10 (3.4%)	None	150 (51.5%)
Others	37 (8.2%)		

Table 4.2: Differences between orphanhood groups on demographic factors

	Non-orphaned and vulnerable children (n = 100)	AIDS-orphaned vulnerable children (n = 74)	Other-orphans (n = 67)	Children with HIV/AIDS infected parent/caregiver (n = 50)	P value (t- test/chi- square)
Age	11.53 (2.683)	13.78 (2.624)	13.09 (2.673)	14.84 (2.324)	F = 21.131 ^c
Gender: Girls	52	50	50.7	48	n. s.
Boys	48	50	49.3	52	
Ethnicity: Dangme/Krobo	63.0%	59.5%	73.1%	56.0%	X = 40.051 ^c
Household size	4.98 (0.995)	3.73 (0.969)	4.27 (1.226)	3.96 (1.068)	F = 22.604 ^c
No. of changes in residence	1.35 (1.336)	2.76 (1.524)	3.09 (1.685)	1.72 (1.471)	F = 23.844 ^c
No. of siblings	1.21 (0.946)	1.95 (0.935)	2.22 (1.277)	2.44 (1.198)	F = 19.807 ^c
Location where child lives: urban	50.0%	60.8%	59.7%	58.0%	n. s.
Age child first bereaved		6.27 (4.339)	8.81 (3.456)		
Parental educational level: > junior secondary					
Parental unemployment	7.0%	9.5%	9.0%	38.0%	X = 39.695 ^c
Parental Loss: Mother	-	33.8%	34.3%	-	n. s.
Father	-	37.8%	41.8%	-	
Both	-	28.4%	23.9%	-	
Religion: Christianity	69.0%	48.7%	44.8%	56.0%	X = 36.271 ^c

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

CHAPTER FIVE – SOCIO-DEMOGRAPHICS, ORPHANHOOD AND MENTAL HEALTH

Question 2: Do children orphaned by AIDS experience more mental health problems than children orphaned by non-AIDS causes, children living with HIV/AIDS-infected parents and non-orphaned children?

- How do socio-demographic factors relate to the psychological functioning of OVC?
- Are certain types of mental health problems experienced more than others?
- How do AIDS-orphaned, other-orphans, children living with HIV/AIDS-infected parents and non-orphaned children compare to norms of proportions of children in the clinical range for psychological problems?
- Do reports of young people differ from those of their parents or caregivers?

5.1 Association between socio-demographic factors and psychological outcomes

The relationships between the various socio-demographic factors and the continuous psychological outcomes were examined using t-tests, Pearson bivariate correlations for continuous socio-demographic variables, chi-squared and ANOVA for categorical variables. The outcomes of these analyses are shown on Table 3. Age was positively associated with scores on all the psychological variables ($p < .001$) except for pro-social behaviours where the correlation was negative ($p < .001$). This implies that psychological problems appeared to increase with age while prosocial behaviour decreased with age. Similarly, smaller household size was correlated with higher emotional problems, delinquency, conduct problems, peer problems, hyperactivity and reactive attachment disorders (RAD). Interestingly it was associated with higher self-esteem but not pro-social behaviours. Gender was associated with only emotional problems where female children scored themselves more than males ($p < .001$). There were no significant differences between paternal, maternal or double orphans on all the contextual variables and mental

health outcomes except for exposure to community violence [$F(2, 138) = 3.449, p < .05$] where maternal orphans showed higher scores compared to paternal orphans ($t = 5.77, p < .05$). Single orphans reported significantly higher prosocial behaviours than double orphans ($t = 2.021, p < .05$). The sample is probably too small to identify more differences on gender, gender of the parent who has died, and single versus double orphans on the variables investigated. The type of orphan a child is (maternal, paternal or double) was not associated with any of the psychological outcomes measured. Children who are presently out of school reported more emotional and RAD than those in school ($p < .05$). Furthermore, the age at which the child was bereaved is positively correlated with emotional problems, conduct problems, peer problems, hyperactivity and RAD.

Unadjusted regression and ANOVA analyses indicated a strong association between orphanhood and psychological outcomes, and significant group differences. It was therefore decided to adjust for socio-demographic factors in a follow up analyses.

5.2 OVC's Mental Health outcomes when controlling for relevant socio-demographic factors

Delinquency

As presented in Table 4, a General Linear Model analysis that controlled for relevant socio-demographic co-factors (age, household size and number of changes within residence) showed a significant effect between the four orphanhood groups on delinquency [$F(3, 287) = 3.829, p < .01$]. A follow up post-hoc, pair-wise multiple comparisons using bonferroni test that children orphaned by AIDS scored significantly higher for delinquency problems than both children orphaned by other causes ($t = 1.130, p < .01$) and comparison children ($t = 1.149, p < .05$). Children orphaned by AIDS did not, however, have higher scores than children for delinquency than living with HIV/AIDS-infected parents [Table 4]. Children living with HIV/AIDS-infected parents also scored statistically higher problems than both orphans of other causes ($t = 1.144, p < .05$) and comparison children ($t = 1.163, p < .05$) with no other group differences found. Two Multiple Linear Regression models [Tables 6A and 6B] were constructed to assess the associations between each of the vulnerability situations compared with comparison children on all the various psychological outcomes. When controlling for age, household size and number of changes in residence in an adjusted model, orphanhood by AIDS and living with an HIV/AIDS-infected parent were each significantly associated with higher delinquency problems

[Table 5B]. Orphanhood by other causes was moderately related to higher delinquency problems in the unadjusted model but this association was eliminated in the adjusted model.

Self Esteem and Future Orientation

In a GLM analysis controlling for age, household size and number of changes in residence among the entire sample, the results indicated a multivariate significance for group difference on self esteem and future orientation [$F(3, 287) = 4.607, p < .01$]. A subsequent post-hoc pair-wise comparison showed that children orphaned by AIDS and children living with HIV/AIDS both reported lower self esteem and future orientation that differed significantly from those reported by both other orphans and comparison children [Table 4]. No other group differences were significant. In a multivariate regression analysis, orphanhood by AIDS was associated with low self esteem in an unadjusted model but this association remained only moderately ($p < .05$) after adjusting for age, household size and number of changes in residence. However, orphanhood by other causes was only moderately associated with low self esteem ($p < .01$) in the unadjusted model, but the association was completely eliminated in the adjusted model. Finally, living with an HIV/AIDS-infected parent was significantly associated ($p < .001$) in the unadjusted model, the association remained only marginally ($p < .05$) in the adjusted model for self esteem after controlling for relevant socio-demographic co-factors [Table 4].

Table 3: Associations between socio-demographic factors and psychological outcomes¹

Source	Delinquency	p	Self esteem	p	Emotional problems	P	Conduct problems	p	Peer problems	p
Age	.338	.001	.320	.001	.474	.001	.726	.001	.717	.001
Gender										
Female (M, SD)	5.36 (2.78)	n. s.	8.35 (3.30)	n. s.	6.59 (1.97)	.001	3.20 (1.48)	n. s.	5.24 (2.220)	n. s.
Male (M, SD)	5.78 (2.66)		8.73 (3.08)		5.63 (1.73)		3.44 (1.56)		5.60 (2.16)	
Changes in residence	.163	.01	.167	.01	.234	.001	.137	.05	.150	.01
No. of children at home	-.126	n. s.	-.201	.05	.079	n. s.	-.006	n. s.	-.091	n. s.
Presently being in school										
No	5.79 (2.65)	n. s.	8.91 (3.05)	n. s.	6.43 (1.93)	.05	3.35 (1.54)	n. s.	5.59 (2.21)	n. s.
Yes	5.46 (2.76)		8.35 (3.26)		5.96 (1.89)		3.3 (1.52)		5.33 (2.18)	
Type of orphan ²										
Maternal	5.90 (2.55)	n. s.	9.08 (3.01)	n. s.	7.02 (1.30)	n. s.	3.25 (1.45)	n. s.	6.00 (1.68)	n. s.
Paternal	5.77 (2.66)		9.09 (2.93)		6.93 (1.43)		3.57 (1.59)		5.71 (1.70)	
Double	6.16 (2.98)		9.06 (2.59)		7.11 (1.39)		3.68 (1.53)		5.84 (1.40)	
Age at first bereavement ²	-.058	n. s.	.014	n. s.	.168	.05	.334	.001	.262	.01
Household size	-.140	.05	-.251	.001	-.251	.001	-.201	.001	-.218	.001

¹The p-values (p) are those associated with independent sample t-test, ANOVA or bivariate associations.

²Includes only orphaned children

Table 3 Continuation: Associations between socio-demographic factors and psychological outcomes¹

Source	Hyperactivity	p	Total difficulties	p	Prosocial behaviour	p	Total impact	p	Total RAD	p
Age	.437	.001	.842	.001	-.226	.001	.560	.001	.278	.001
Gender										
Female (M, SD)	4.39 (1.61)	n. s.	19.41 (5.15)	n. s.	8.45 (1.26)	n. s.	4.22 (3.02)	n. s.	15.96 (4.39)	n. s.
Male (M, SD)	4.13 (1.56)		18.80 (5.01)		8.31 (1.22)		3.78 (3.23)		15.14 (4.36)	
Changes in residence	.138	.05	.237	.001	0.06	n. s.	.168	.01	.310	.001
No. of children at home	.083	n. s.	.016	n. s.	.017	n. s.	-.106	n. s.	.016	n. s.
Presently being in school										
No	4.41 (1.53)	n. s.	19.78 (4.97)	n. s.	8.38 (1.23)	n. s.	4.02 (3.24)	n. s.	16.67 (4.50)	.01
Yes	4.19 (1.62)		18.78 (5.11)		8.39 (1.26)		3.99 (3.08)		15.03 (4.24)	
Type of orphan ²										
Maternal	4.44 (1.56)	n. s.	20.71 (3.59)	n. s.	8.60 (1.09)	n. s.	4.21 (3.04)	n. s.	17.40 (4.23)	n. s.
Paternal	5.07 (1.48)		21.29 (3.88)		8.50 (1.06)		4.89 (2.88)		17.43 (3.62)	
Double	4.78 (1.40)		21.41 (3.95)		8.08 (1.53)		4.86 (2.78)		17.22 (4.67)	
Age at first bereavement ²	.324	.001	.446	.001	-.158	n. s.	.222	.01	.080	n. s.
Household size	-.134	.05	-.291	.001	0.85	n. s.	-.260	.001	-.214	.001

¹The p-values (p) are those associated with independent sample t-test, ANOVA or bivariate associations.

²Includes only orphaned children

SDQ Total Difficulties (emotional, peer, conduct and hyperactivity problems)

As reported in Table 4, significant group differences were found on total difficulties after controlling for age, household size, number of changes in residence and number of siblings at home [$F(3, 287) = 36.497, p < .001$]. These differences, post-hoc comparison using Bonferroni showed that children orphaned by AIDS had higher scores than children living with HIV/AIDS-infected parents ($p < .01$), orphans of other causes ($p < .05$) and comparison children ($p < .001$). Subsequently, orphans of other causes ($p < .001$) and children living with HIV/AIDS-infected parents ($p < .001$) had significantly higher total difficulties scores than comparison children. Multivariate regression analyses indicate that orphanhood by AIDS, orphanhood by other causes and living with HIV/AIDS-infected parents were all, independently significantly associated with total difficulties in both an unadjusted model and adjusted model that controlled for age, household size, number of changes in residence and number of siblings at home (Table 4).

Applying recommended SDQ self-reports clinical cut-off for overall psychological distress in the sample, 72% of children living with HIV/AIDS-infected parents, 76% of children orphaned by AIDS, 49% of children orphaned by other causes, and 28% of non-orphaned children met the criteria for “likely psychiatric diagnosis”.

Interestingly, informants’ (parent/carer) ratings for overall clinical abnormality were even higher; approximately 96% for OVC and 39% for non-OVC (Chart 5.1).

Chart 5.1: Comparing groups on proportions of children with clinical-range scores for total difficulties (children self report)

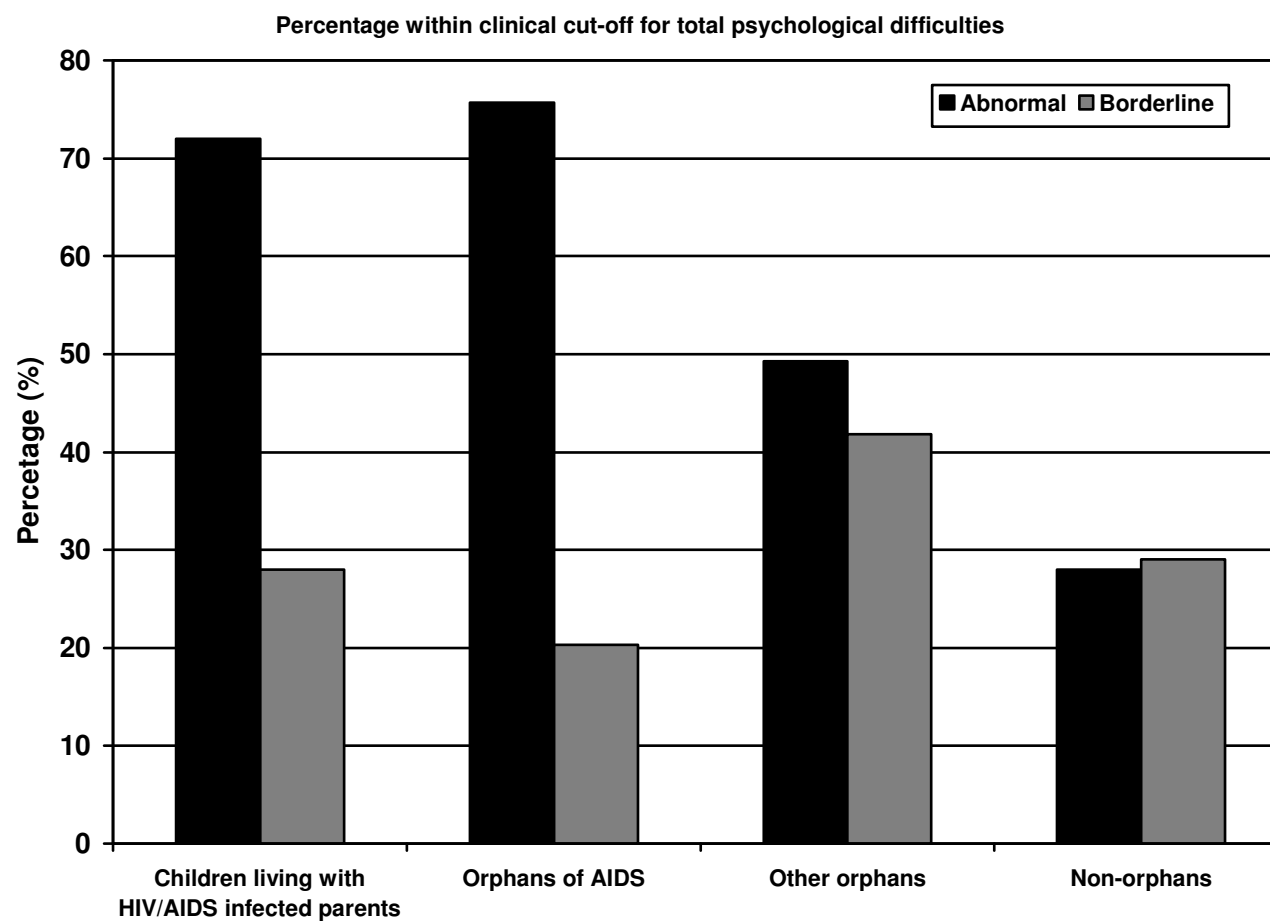


Table 4: Young people's self-report: Adjusted Mean (99% Confidence Interval) of Psychosocial Measures among Four Groups of Children

Source	Comparison group of children (n = 100) [1]	Orphaned and vulnerable children			Post hoc comparisons
		AIDS-orphaned children(n = 74) [2]	Other-orphans (n = 67) [3]	Children with HIV/AIDS-infected parents (n = 50) [4]	
Delinquency ¹	5.074 (4.505-5.643)	6.223 (5.611-6.835)	5.093 (4.462-5.724)	6.237 (5.494–6.980)	(4>1) ^a , (4>3) ^a , (2>1) ^b , (2>3) ^b
Self esteem ¹	7.754 (7.096-8.413)	9.296 (8.588-10.004)	8.148 (7.418-8.878)	9.495 (8.635-10.354)	(4>1) ^b , (4>3) ^a , (2>1) ^b , (2>3) ^a
Emotional problems ²	4.861 (4.518-5.204)	6.875 (6.537-7.213)	6.912 (6.564-7.261)	6.396 (5.957-6.818)	(4>1) ^c , (3>1) ^c , (2>1) ^c
Conduct problems ³	3.396 (3.133-3.659)	3.302 (3.042-3.561)	4.248 (2.979-3.516)	3.270 (2.946-3.593)	n/a
Peer problems ³	4.751 (4.382-5.119)	5.977 (5.613-6.495)	5.337 (4.960-5.714)	6.041 (5.588-6.495)	(4>3) ^a , (4>1) ^c , (3>1) ^a , (2>3) ^b , (2>1) ^c
Hyperactivity ³	3.601 (3.259-3.943)	4.877 (4.539-5.215)	4.606 (4.256-4.956)	4.208 (3.787-4.629)	(2>4) ^b , (2>1) ^c , (4>1) ^a , (3>1) ^c
Prosocial behaviour ⁴	8.256 (8.003-8.509)	8.488 (8.206-8.769)	8.454 (8.162-8.747)	8.397 (8.045-8.750)	n/a
Total difficulties ³	16.679 (16.14-17.22)	21.004 (20.47-21.54)	20.103 (19.55-20.66)	19.857 (19.19-20.52)	(4>1) ^c , (3>1) ^c , (2>4) ^b , (2>3) ^a , (2>1) ^c
Total impact ¹	3.717 (3.140-4.295)	4.181 (3.560-4.801)	4.325 (3.685-4.965)	3.863 (3.109-4.616)	n/a

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

Table 5: PARENTS AND CAREGIVERS' REPORTS: Estimated/Adjusted Mean (99% Confidence Interval) of Psychosocial Measures among Four Groups

Source	Non-orphaned and vulnerable children (n = 100) [1]	Orphaned and vulnerable children			Post hoc comparisons
		AIDS-orphaned children (n = 74) [2]	Other-orphans (n = 67) [3]	Children with HIV/AIDS-infected parents (n = 50) [4]	
Emotional problems ²	3.787 (3.422-4.152)	6.005 (5.643-6.368)	5.924 (5.551-6.297)	6.467 (5.997-6.936)	(4>1) ^c , (3>1) ^c , (2>1) ^c
Conduct problems ³	4.293 (3.934-4.652)	6.382 (6.025-6.739)	5.800 (5.431-6.169)	6.351 (5.889-6.813)	(4>1) ^c , (2>1) ^c , (3>1) ^c
Peer problems ³	3.560 (3.124-3.997)	5.827 (5.387-6.267)	6.021 (5.565-6.478)	5.653 (5.093-6.212)	(4>1) ^b , (2>1) ^c , (3>1) ^b
Hyperactivity ³	3.750 (3.394-4.107)	4.425 (4.051-4.799)	4.254 (3.850-4.658)	4.388 (3.895-4.882)	(4>1) ^a , (2>1) ^a
Prosocial behaviour ⁴	7.432 (7.246-7.617)	7.525 (7.318-7.732)	7.423 (7.208-7.639)	7.391 (7.120-7.663)	n/a
Total difficulties ³	15.280 (14.44-16.12)	22.705 (21.87-23.54)	21.994 (21.14-22.85)	23.004 (21.92-24.09)	(4>1) ^c , (2>1) ^c , ((3>1) ^c
Total impact ¹	4.290 (3.600-4.980)	6.270 (5.468-7.072)	6.701 (5.859-7.544)	6.756 (5.727-7.784)	(4>1) ^c , (2>1) ^c , ((3>1) ^c
Disinhibited RAD ⁵	6.292 (5.698-6.886)	9.487 (8.898-10.075)	9.356 (8.750-9.962)	9.494 (8.729-10.258)	(4>1) ^c , (2>1) ^c , ((3>1) ^c
Inhibited RAD ⁵	6.585 (6.101-7.069)	7.791 (6.638-7.976)	7.435 (6.892-7.979)	7.307 (6.638-7.976)	(2>1) ^b , ((3>1) ^a
Total RAD ⁵	12.882 (11.95-13.81)	17.290 (16.37-18.21)	16.803 (15.85-17.75)	16.767 (15.57-17.96)	(4>1) ^c , (2>1) ^c , ((3>1) ^c

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

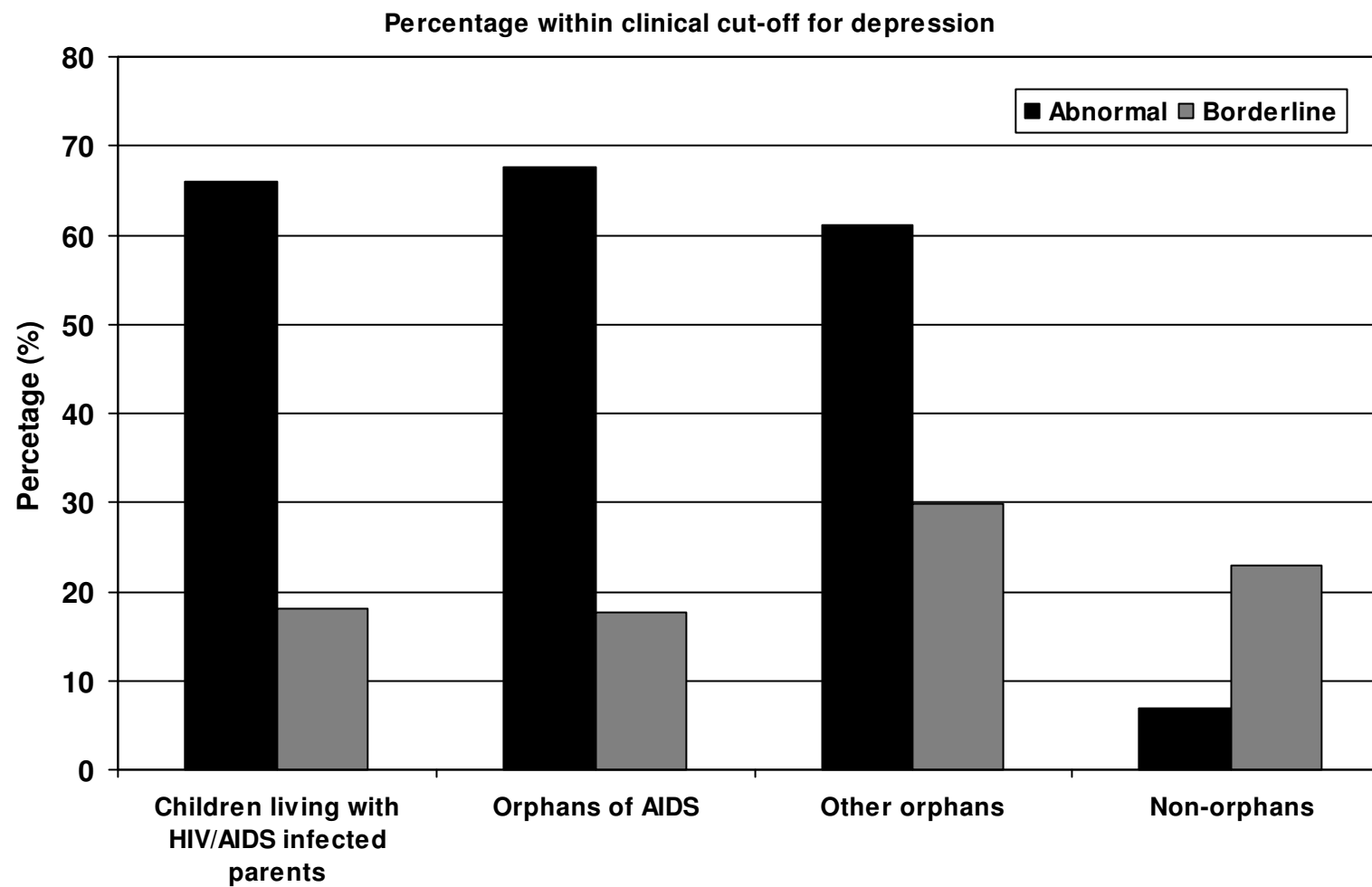
⁴ Adjusted model controls for age

⁵Adjusted model controls for age, household size, no. of changes in residence, presently in school;

Depression (Emotional Problems)

Compared with comparison children, children orphaned by AIDS, orphans of other causes and children living with HIV/AIDS-infected parents scored significantly higher on emotional problems [$F(3, 287) = 3.287, p < .001$]. Table 4 depicts the findings of the post hoc comparisons based on estimated marginal means controlling for age, gender, household size, number of changes in residence, educational level and number of children living at home in a GLM. The comparison children reported significantly lower scores for emotional problems than AIDS orphan ($t = 2.014, p < .001$), other orphans ($t = 2.051, p < .001$) and children living with HIV/AIDS-infected parents ($t = 1.536, p < .001$) [Table 4]. There were no other group differences. Similar findings were reported by informants [Table 5]. In Multiple Linear Regressions, both self-reports and informant ratings indicated that orphanhood by AIDS and living with an HIV/AIDS-infected parent were each significantly positively related to emotional problems in an unadjusted model [Table 6A & 7], and these associations remained even after controlling for age, gender, household size, number of changes in residence, educational level and number of children living at home [Table 6B & 8]. Orphanhood by other causes was also significantly associated with emotional problems in both the unadjusted and adjusted models. The proportion of likely clinical cases in each of the four groups indicates that approximately 66%, 68%, 61% and 7% of children living with HIV/AIDS-infected parents, AIDS-orphaned, other-orphans, and non-orphaned children respectively met the clinical criteria for internalizing distress and depression (Chart 5.2).

Chart 5.2: Comparing groups on proportions of children with clinical-range scores for depression (children self reports)



Conduct Problems

There was significant group difference on conduct problems [$F(3,287) = 10.107, p < .001$]. In this unadjusted analysis, compared with comparison children, children orphaned by AIDS ($p < .001$), orphans of other causes ($p < .05$) and children living with HIV/AIDS-infected parents ($p < .01$) scored significantly higher conduct problems. Children living with HIV/AIDS-infected parents scored significantly higher problems than orphans of other causes ($t = 0.681, p < .05$). However in a adjusted model that controlled for age, household size, number of changes in residence and number of children at home self reports of conduct problems between the groups could not reach significance [$F(3, 287) = 0.189, p = n. s.$]. In a Multiple Linear Regression, youth self-reports shows that orphanhood by other causes was moderately associated with conduct problems in the unadjusted model [Table 6A] but this association was eliminated in the adjusted model that controlled for age, household size, number of changes in residence and number of children at home [Table 6B]. Similarly, orphanhood by AIDS and living with an HIV/AIDS-infected parent were independently, significantly related to conduct problems in the unadjusted model but these associations were completely eliminated in the adjusted model (Table 6B). However, concerning the informants' reports, AIDS-orphanhood, orphans of other causes and living with an HIV/AIDS-infected parent were each significantly associated with conduct problems in both unadjusted [Table 7] and adjusted model [Table 8].

Using the recommended cut-off of 5 on the SDQ self-report conduct subscale as indicative of abnormality, 38% of children living with HIV/AIDS-infected parents, 22% of AIDS-orphaned, 22% of other-orphans, and 10% of non-OVC were likely cases of conduct disorder. The full clinical range of the sample in each group on conduct problems is presented in Chart 5.3.

Chart 5.3: Comparing groups on proportions of children with clinical-range scores for conduct problems (children self report)

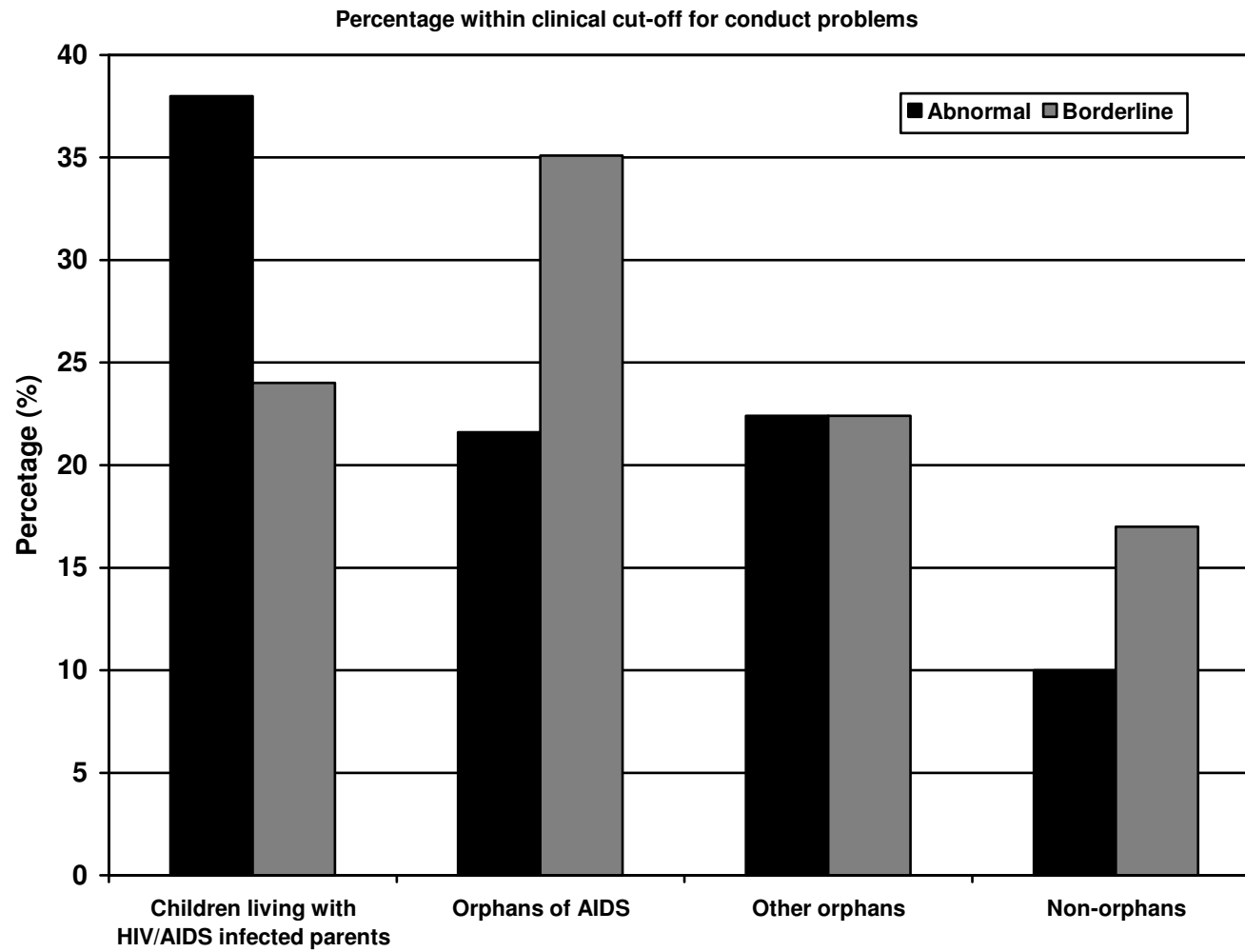


Table 6A: (MODEL 1): Child self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, without controlling for socio-demographic cofactors

Source	Delinquency	Self esteem	Emotional problems	Conduct problems	Peer problems	Hyperactivity	Total impact	Prosocial behaviour
	Mod. 1	Mod. 1	Mod 1	Mod 1	Mod 1	Mod1	Mod1	Mod1
Orphaned by AIDS	.345 ^c	.391 ^c	.604 ^c	.328 ^c	.471 ^c	.493 ^c	.348 ^c	-.006
Orphaned by other causes	.126 ^a	.172 ^b	.609 ^c	.177 ^b	.252 ^c	.387 ^c	.295 ^c	.011
Living with HIV/AIDS infected parent	.348 ^c	.390 ^c	.552 ^c	.391 ^c	.518 ^c	.367 ^c	.353 ^c	-.082
R-Square	.095	.130	.238	.094	.228	.111	.091	.003
R ² Change								
Adjusted R	.092	.127	.235	.091	.225	.108	.088	-.001

^a Denotes significance at the 0.05 level, ^b denotes significance at the 0.01 level, ^c denotes significance at the .001 level

Table 6B: (MODEL 2): Child self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors

Source	Delinquency ¹	Self esteem ¹	Depression ²	Conduct problems ³	Peer problems ³	Hyperactivity ³	Total impact ¹	Prosocial behaviour ⁴
	Mod. 2	Mod. 2	Mod 2	Mod 2	Mod 2	Mod2	Mod2	Mod2
Orphaned by AIDS	.278 ^b	.242 ^b	.394 ^c	-.016	.265 ^c	.430 ^c	-.010	.058
Orphaned by other causes	-.055	.009	.495 ^c	-.067	.037	.413 ^c	.066	.086
Living with HIV/AIDS infected parent	.249 ^b	.215 ^a	.321 ^c	-.036	.164 ^a	.361 ^c	-.020	.063
R-Square	.157	.185	.421	.533	.555	.224	.343	.053
R ² Change	.062	.055	.184	.439	.327	.114	.252	.051
Adjusted R	.145	.174	.407	.525	.547	.211	.334	.047
F - Change	7.006 ^c	6.394 ^c	14.972 ^c	66.944 ^c	52.461 ^c	10.426 ^c	36.598 ^c	15.404 ^c

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

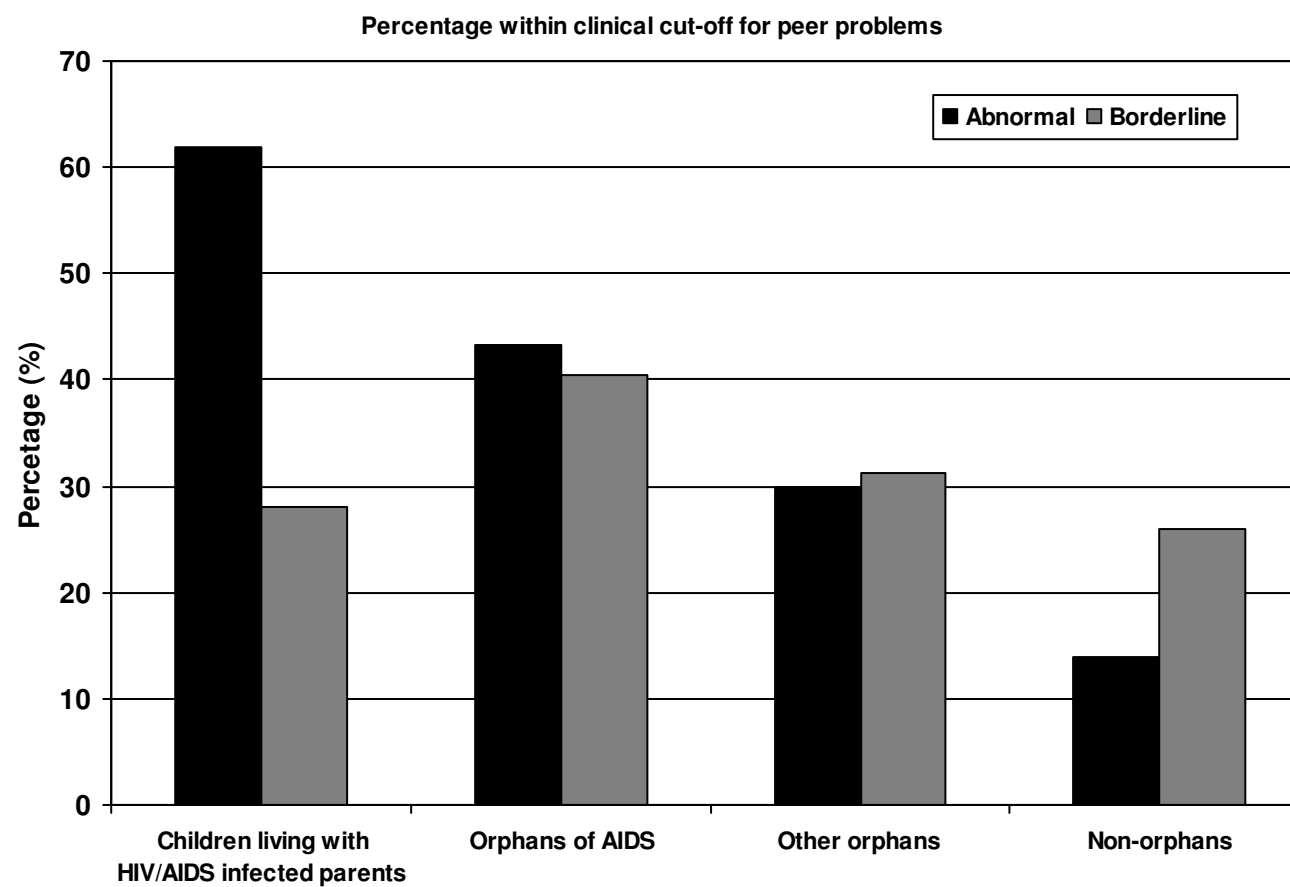
Peer Problems

After controlling for age, household size, number of changes in residence and number of children at home the four orphanhood groups differed significantly on peer problems [$F(3,287) = 7.655, p < .001$]. In a post-hoc pair-wise analysis, compared with comparison children, children orphaned by AIDS ($t = 1.227, p < .001$), orphans of other causes ($t = 0.586, p < .05$) and children living with HIV/AIDS-infected parents all scored significantly higher peer problems [Table 4]. Subsequently, both children orphaned by AIDS ($t = 0.640, p < .01$) and children living with HIV/AIDS-infected parents reported higher peer problems that differed significantly from orphans of other causes. In a Regression analysis, orphanhood by AIDS was significantly correlated with peer problems in the unadjusted model [Table 6A] and this relationship was maintained after controlling for age, household size, number of changes in residence and number of children at home in the adjusted model [Table 6B]. Orphanhood by other causes was significantly associated with peer problems in the unadjusted model but this relationship was completely eliminated in the adjusted model for self-reports [Table 7] but not for informant ratings [Table 8]. Finally, living with an HIV/AIDS-infected parent was significantly associated with peer problems in the adjusted model for informant reports [Table 8] but was only moderate when youth self reports were considered in the adjusted model ($p < .05$). Using the SDQ cut-off of 6 and above on the peer problems subscale, 62% of children living with HIV/AIDS-infected parents, 43% of AIDS-orphaned, 30% of other-orphans, and 14% of non-orphaned children met the abnormal clinical criteria. Chart 5.4 presents the complete pictorial proportions of clinical range caseness.

Hyperactivity

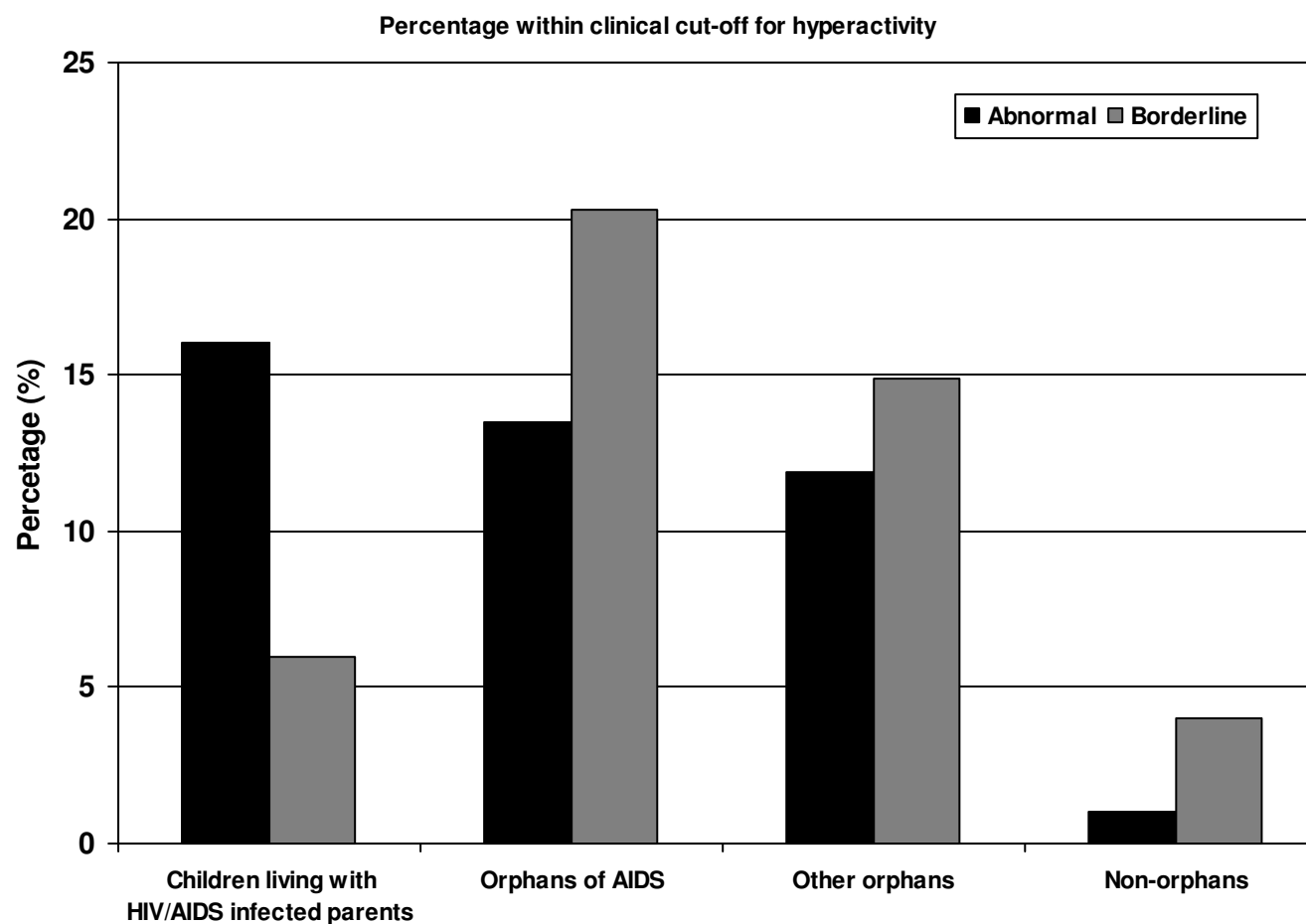
In a GLM, membership of an orphanhood group demonstrated a significant effect on hyperactivity [$F(3,287) = 8.415, p < .001$] after controlling for age, household size, number of changes in residence and number of children at home.

Chart 5.4: Comparing groups on proportions of children with clinical-range scores for peer problems (children self reports)



Post-hoc pair-wise comparison show that children orphaned by AIDS ($t = 1.276$, $p < .001$), orphans of other causes ($t = 1.005$, $p < .001$) and children living with HIV/AIDS-infected parents, all reported significantly higher hyperactivity problems than comparison children [Table 4]. Another significant pair-wise observation was that children orphaned by AIDS scored higher on hyperactivity than children living with HIV/AIDS-infected parents ($t = 0.609$, $p < .01$). In a related Linear Regression, orphanhood by AIDS, orphanhood by other causes and living with an HIV/AIDS-infected parent were independently, significantly associated with hyperactivity in both unadjusted, and adjusted that controlled for age, household size, number of changes in residence and number of children at home as indicated by youth self-reports (Table 6A & 6B). Informant scores when analysed showed that the significant association between living with HIV/AIDS infected parent and higher peer problems were completely eliminated in the adjusted model [Table 8]. Applying recommended SDQ clinical cut-off, 16% of children living with HIV/AIDS-infected parents, 14% of AIDS-orphaned, 12% of other-orphans, and 1% of non-orphaned children met the abnormal clinical criteria. The full picture of the clinical cut-off consideration is presented in Chart 5.5 for children's self-reports.

Chart 5.5: Comparing groups on proportions of children with clinical-range scores for hyperactivity (children self-reports)



Impact of psychological distress as indicated by informants

Significant group differences were found on young peoples' self reported total impact burden [$F(3, 287) = 11.888, p < .001$] with a follow up multiple group pair-wise comparisons indicating that children orphaned by AIDS ($t = 2.261, p < .001$), other orphans ($t = 1.843, p < .001$), and children living with HIV/AIDS-infected parents ($t = 2.390, p < .001$) all scored significantly higher than comparison children. No other group pair-wise differences were observed. However, in a GLM that controlled for age, household size and number of changes in residence no significant difference was found [$F(3, 287) = 0.701, p = n. s.$]. In a related Linear Regression, orphanhood by AIDS, orphanhood by other causes, and living with an HIV/AIDS-infected parent were all significantly associated with self reported total impact burden in the unadjusted model, but all these associations were completely eliminated in adjusted model that controlled for age, household size and number of changes in residence.

Prosocial Behaviours

There were no significant differences between the groups on self-reported prosocial and helping out behaviours in both uncontrolled GLM analysis or one that controlled for age [$F(3, 287) = 0.556, p = n. s.$].

Gender

The present study was underpowered to identify gender differences (see power calculations on page 70). However, significant gender differences were found on depression, peer problems and disinhibited reactive attachment disorder. Among the OVC female children are more likely than their male peers to score higher depression symptoms ($t = 8.758, p < .001$) and disinhibited reactive attachment disorder ($t = 2.004, p < .05$). On the other hand, male children scored significantly higher on peer problems than female OVC ($t = 2.906, p < .01$). No further gender differences were identified on the other mental health outcomes or the contextual variables examined.

Table 7: (MODEL 1) Parents and Caregivers' Reports: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, without controlling for socio-demographic cofactors

Source	Total RAD	Total Difficulties	Emotional problems	Conduct problems	Peer problems	Hyperactivity	Total impact	Prosocial behaviour
Orphaned by AIDS	.559 ^c	.705 ^c	.573 ^c	.496 ^c	.513 ^c	.264 ^c	.268 ^c	-.015
Orphaned by other causes	.576 ^c	.681 ^c	.598 ^c	.398 ^c	.529 ^c	.241 ^c	.359 ^c	-.016
Living with HIV/AIDS infected parent	.499 ^c	.687 ^c	.569 ^c	.431 ^c	.512 ^c	.219 ^b	.336 ^c	-.125
R-Square	.161	.332	.250	.154	.157	.037	.053	.005
Adjusted R	.158	.329	.248	.151	.154	.034	.050	.002
F	54.388 ^c	140.881	94.822 ^c	51.623 ^c	52.823 ^c	11.059 ^c	15.964 ^c	1.430

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

Table 8 (MODEL 2): Parents and Caregivers' Reports: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, controlling for relevant socio-demographic cofactors

Source	Total RAD ⁵	Total Difficulties ³	Emotional problems ²	Conduct problems ³	Peer problem ³	Hyperactivity ³	Total impact ¹	Prosocial behaviour ⁴
Orphaned by AIDS	.363 ^c	.646 ^c	.497 ^c	.464 ^c	.446 ^c	.120	.180 ^a	.041
Orphaned by other causes	.396 ^c	.635 ^c	.513 ^c	.368 ^c	.429 ^c	.230 ^b	.355 ^c	-.010
Living with HIV/AIDS infected parent	.326 ^c	.665 ^c	.503 ^c	.416 ^c	.470 ^c	.203 ^b	.326 ^c	.001
R-Square	.241	.367	.284	.167	.184	.054	.083	.022
R ² Change	.080	.035	.034	.013	.027	.016	.029	.017
Adjusted R	.225	.358	.266	.152	.170	.037	.070	.015
F – Change	5.918 ^c	5.171	2.196 ^a	1.082	2.341 ^a	3.193 ^b	3.008 ^a	4.805 ^a

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

⁵Adjusted model controls for age, household size, no. of changes in residence, presently in school.

Symptoms of Reactive Attachment Disorder (Total RAD)

As reported by informants, orphanhood by AIDS and orphanhood by other causes were individually associated with higher symptom scores for Reactive Attachment Disorder in both the unadjusted model and the adjusted model that controlled for age, household size, number of changes in residence and the present educational status of the child. Similarly, living with an HIV/AIDS infected parent was also associated with total RAD in both the unadjusted or adjusted models.

5.3 Cross-informant agreements

The inter-informant correlations for the SDQ scores in present sample were low, ranging from .040 to .378 [Table 10]. Correlations between children's self-reports and caregivers' account on total difficulties, emotional problems and hyperactivity were significant at alpha levels of $p < .01$, $p < .01$ and $p < .001$ respectively. Correlations between self-report and informants on the subscales of conduct problems, peer problems as well as the impact of burden did not, however, reach statistical significance.

Another interesting finding in the present analyses was that caregivers and parents of children (informants) reported significantly higher problems compared with self-reports for total psychological difficulties ($t = 3.216$, $p = .001$), conduct problems ($t = 17.717$, $p = .001$) and impact ($t = 6.390$, $p = .001$) [Table 9]. In addition caregivers also reported lower prosocial behaviours (indicating more problems) for the children ($t = 10.563$, $p = .001$). However, adolescents themselves reported more problems with emotions (symptoms of depression) ($t = 6.327$, $p = .001$) and peer problems, the values for which were significantly different from those reported by their informants. No significant difference was found on hyperactivity between children self-reports and informant scores.

Table 9: Comparisons of Scale scores across respondents using Paired Sample Statistics (n = 286)

Source	Children self report	Informant report	t	p value
Emotional problems				
Mean	6.07	5.28	6.327	.001
SD	1.901	1.785		
Conduct problems				
Mean	3.28	5.51	-17.717	.001
SD	1.496	1.624		
Peer problems				
Mean	5.38	5.05	1.961	.05
SD	2.192	2.045		
Hyperactivity				
Mean	4.23	4.14	0.700	n. s.
SD	1.570	1.621		
Total difficulties				
Mean	18.97	19.99	-3.216	.001
SD	5.001	4.609		
Prosocial behaviours				
Mean	8.39	7.45	10.563	.001
SD	1.251	0.900		
Impact				
Mean	3.97	5.76	-6.390	.001
SD	3.139	3.653		

Table 10: Cross-informant correlations (Pearson) for SDQ scores for children and adolescents in the sample

Source (n = 186)	Inter-informant correlation (Self x informant)	Cronbach alpha
Emotional problems	.344 ^c	.512
Conduct problems	.073	.136
Peer problems	.087	.160
Hyperactivity	.194 ^b	.325
Total difficulties	.378 ^c	.548
Prosocial behaviours	.040	.077
Impact	.040	.077

^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

The findings in the context of the international literature

Overall, children's self reports and relevant informant accounts indicate that, compared with children who were not experiencing HIV/AIDS in their families, children orphaned by AIDS and children living with HIV/AIDS-affected parents had higher levels of psychological symptoms. These associations were mostly unattenuated when relevant socio-demographic factors such as gender, household size, age, being out of school and number of changes in residence were controlled.

Both AIDS orphaned children and children living with HIV/AIDS-infected parents had significantly higher scores than other groups for delinquency. This finding is consistent with other investigations where children affected by AIDS were found to exhibit higher risk behaviours compared with other children (Funkquist, Eriksson, & Muula, 2007; He & Ji, 2007; Cluver, Gardner & Operario 2007; Lee, Detels, Rotheram-Borus, Duan, & Lord, 2007; Nyamukapa et al., 2008, Nyamukapa et al 2010, Ziaoyi et al. 2009, Cluver & Gardner 2007, Atwine et. al 2005, Dowdney 2000, Poulter 1996).

The findings regarding the significant association between conduct problems and orphanhood reported by informants as well as the generally high proportions meeting abnormal clinical criteria among the entire sample echoes consistency with findings from a number of studies (Atwine et. al 2005, Poulter 1996, Kaggwa & Hindin 2010) that found higher conduct problems among children affected by AIDS. However, other researchers (Cluver & Gardner, 2007; Cluver, Gardner & Operario 2007) reported lower than expected clinical proportions of conduct problems among orphans and vulnerable children living in the context of high crime and violent areas of South Africa. The Cluver et al (2007) study was, however, based on children's self report and if the present study had solely relied on self-report the interpretation would have been the same. The conduct problems found in the present study as reported by informants are worrying when the low crime and non-violent context within which the present sample was drawn is considered.

Concerning peer problems, both self-reports and informant accounts indicated that children orphaned by AIDS, orphans of other causes and children living with HIV/AIDS-infected parents all scored significantly higher compared with comparison children. Additionally, both children orphaned by AIDS and children living with HIV/AIDS-infected parents

reported higher peer problems compared to orphans of other causes. These findings are similar to what were observed by earlier investigators (Delva et al 2005; Forehand et al., 1998). The analyses also showed that children orphaned by AIDS, orphans of other causes and children living with HIV/AIDS-infected parents, all reported significantly higher hyperactivity problems than comparison children. However, children orphaned by AIDS scored higher on hyperactivity than children living with HIV/AIDS-infected parents. The findings on hyperactivity noted in the present study support earlier investigations in other African countries and elsewhere (Rotheram-Borus et al., 2005; Funkquist et al., 2007; Lee et al., 2007; He & Ji, 2007; Nyamukapa et al., 2008).

The analyses on emotional problems that measured depression indicates that, the comparison children scored significantly lower emotional problems than children orphaned by AIDS, other orphans and children living with HIV/AIDS-infected parents. Children's self-reports in the present study also showed that children orphaned by AIDS and children living with HIV/AIDS both reported lower self esteem and future orientation that differed significantly from those reported by both other orphans and comparison children. These results support a growing global literature, largely quantitative self-reports and qualitative, that children orphaned suffer heightened internalizing problems such as depression, fear, suicide ideation, anxiety, anger, and hopelessness than children who do not experience AIDS in their families (Rotheram-Borus et al., 2005; Woodring 2005; Ziaoyi et al. 2009; Cluver, Gardner & Operario 2007; Li et al. 2008; Kidman et al. 2010; Strode & Barrett-Grant, 2001; Bauman et al., 2006). However, the present study is the first to use multi-informant techniques within an epidemiological framework to demonstrate that both children orphaned by AIDS and those living with HIV/AIDS-infected parents suffer higher internalizing problems compared to other children. These higher psychological problems exist even after controlling socio-demographic factors.

Implications of the findings

Depressive symptoms, peer problems, delinquency, self esteem and future orientation, as reported by children were all higher amongst both AIDS orphaned children and those living with HIV/AIDS infected parents than other orphaned children and non-OVC. This suggests that children living with HIV/AIDS infected parents, who face the potential of losing their parents and children orphaned by AIDS are at statistically equal, heightened risk of psychological difficulties compared to orphans of other causes. Clearly, being affected by the HIV/AIDS pandemic (whether orphaned or not) is more traumatic and

devastating for children than losing a parent to non-AIDS causes (Zhao et al 2010). Whilst children living with HIV/AIDS infected parents are under-investigated (Li et al 2008), the present findings showed that negative psychological symptoms arise before the death of HIV/AIDS infected parents and persist after the death of the parent (Cluver and Gardner 2007). It is not surprising that among various categories of children affected by AIDS, recent studies (Deininger et al. 2003, Muntangadura 2001, Kidman et al. 2010) identified those living with sick parents to be at the greatest risk for adverse health outcomes. In the present study both children orphaned by AIDS and orphans from other causes had more reactive attachment disorder (RAD) symptoms compared to other groups. The fact that RAD has mostly been found in institutionalised children suggests, speculatively that these children might be living under conditions similar to those of orphanages, perhaps being neglected and abused.

One implication of the present findings is that efforts aimed at improving the psychological wellbeing of AIDS-affected children should be a holistic approach that is applicable to all children affected by AIDS and not the usual “selective action” targeted at only AIDS-orphaned children (Meintjes & Giese 2006). Many have argued that formulating interventions for only AIDS-orphaned children places a tag on these children. Consequently, such interventions are not only recipes for discrimination and stigmatisation of these children but also highlight the danger of failed efforts for other vulnerable children affected by the HIV/AIDS pandemic in our society (Meintjes & Giese 2006, Delva et al. 2009).

The present study reported none to low inter-informant agreement on those scales in which scores were available from both the youth and informants. Just as noticed in the present study, consistently low cross-informant agreements between children or adolescents and adults, ranging from .07 to .24 on levels of problems were found in previous literature (Arnold & Jacobowitz, 1993; Younstrom, Loeber, & Stouthamer-Loeber, 2000).

The non-significant correlations between adult reports and children self-reports on conduct problems, peer problems, prosocial behaviours and impact of distress plausibly indicate that children’s self-reports are not providing the same data as adult informants, and therefore both perspectives are important (Achenbach, McConaughy, and Howell 1987). Taken together, the low and non-significant cross-informant correlations found in the present study suggest that emotional and behavioural problems probably exists as

situation-specific variables that may not be easily compared across different informants even within the same setting.

In this study, the informants rated children higher on scales assessing externalizing problems compared to youths themselves, whereas youths reported higher internalizing symptoms about themselves than informants did about them. This finding should be taken with caution as it points to a two-fold interpretation. It is either that the children in the present study were less able to identify their individual behavioural problems and deficits that were rightly identified by informants or that the informants exaggerated these symptoms in the children (Synhorst et al 2005). **Consequently, an important implication for health service workers and researchers is that, none should place more value on one information source compared to another but rather see both self-reports and informant reports as complementary sources offering vitally differing perspectives of psychological symptoms within the same setting (Myers & Winters, 2002).**

The clinical cut-offs applied in the present study indicated very high proportions of likely psychiatric disorders in both externalising and internalising domains. Although it may be contested that the recommended clinical cut-offs were not validated for the population context, the observed proportions are far-above expectations. Goodman et al (2003), demonstrated that these clinical cut-offs perform very well in most cultures. These indicate that there is likely to be a high prevalence of psychiatric disorders among OVC within the study area. It is interesting that none of these children was receiving psychological intervention at the time this study was conducted. However, since the clinical cut-offs lack validation in Ghana, the findings should be seen not as conclusive evidence but rather as a tentative, useful indication of psychological symptom levels among OVC in a differing cultural context (Cluver, Gardner & Operario 2007).

Limitations

The first limitation of this study is that all the data reported in this present study were based on self-reporting by both children and their parents or caregivers. With self-reported data, the shortcomings are related to self-selection, recall bias, and social desirability effect. These elements are always present when assessing the behaviours and attitudes associated with sensitive topics including HIV/AIDS.

The second limitation is related to the nature of cross-sectional study designs. The direction of any causation is problematical in cross-sectional associations. The cross-sectional design did not allow for any conclusions to be drawn regarding causal relationships because exposure (contextual factors and HIV/AIDS-related exposures) and event (mental health outcomes) were measured at the same time. Because data were collected at one point in time, the direction of causation is not implicated in this study. Third, the study population included only samples from one district in Ghana. It did not consider children affected by HIV/AIDS in the other districts. The samples might not be representative of all children affected by HIV/AIDS in other areas of Ghana, moreso when the participants were recruited from the district with highest HIV prevalence in Ghana. The findings of this study, therefore, may not be generalisable to other settings. Future research need to recruit samples from the other districts. Finally, the findings should be interpreted cautiously as assessments of mental health outcomes were not diagnostic but pencil and paper measures. These measurement tools do not identify specific mental disorders but symptoms of psychological illnesses. Hence the levels of mental health outcomes obtained in this study herein do not indicate clinical diagnosis of specific mental disorders.

CHAPTER SIX – SOCIOECONOMIC STATUS AND MENTAL HEALTH

Question 3: What family and community variables (socioeconomic status) are mediating any differences in mental health problems experienced by the different groups of children?

- 3a) Do children orphaned by AIDS come from lower socioeconomic status compared to other children?
- 3b) Do socioeconomic indicators mediate differences in mental health problems among OVC?

6.1 The Socioeconomic Indicators used in the study:

Traditional Socioeconomic Measure (parental education and occupation): The youth's responses to the highest level of their parent's or care-giver's education were coded (0–3): illiterate, basic education, secondary education and tertiary education based on the Ghanaian educational system of classification (Doku et al. 2009). Parental occupational status was coded 0-5 according to the occupational classification in the Ghanaian civil service (Head of Civil Service 2000): 5, chief in rank; 4, professional and managerial; 3, professional non managerial; 2, skilled manual; 1, unskilled manual and 0, unemployed. Parental SES was then computed by summing up the scores for parental education and occupation of the parent/caregiver to produce a composite scale (0 –8).

Material Affluence Indicators: Based on the Material Affluence Scale (MAS) suggested by Doku et al (2009), the answers (1=yes, 0 –no) by respondents to the availability and/or ownership of basic household assets and characteristics of assets and other related items such as car, house, tv, radio, number of rooms in the house etc were summed to yield one's MAS score.

Perceived Socioeconomic Status: Youth perceived SES was assessed using the MacArthur Subjective SES ladder scale (Adler et al 2000; Singh-Manoux et al 2003; Ostrove et al 2000). The ladder comprised of 10 geographical rungs (socioeconomic levels). The youth were asked to place themselves on the rung where they considered themselves to stand (in terms of money, jobs and good schooling) relative to other people in the Manya Krobo Districts. A copy of the scale is included in the Appendix.

Perceived family prestige and respect: Youth perceived social position/prestige was assessed using the Community version of the MacArthur Subjective ladder scale. The ladder comprised of 10 geographical rungs. The youth were asked to place themselves on the rung where they thought their families stand in terms of respect, prestige and good standing relative to other people in the Manya Krobo Districts.

6.2 Association between OVC and socioeconomic indicators (Table 11)

Traditional Socioeconomic Measure: Overall, an ANOVA analysis indicates that there was no significant difference between the four groups on parental SES provided by the youth [$F(3, 287) = 1.958, p = n. s.$]. However, an exploratory Fisher's LSD post hoc analysis indicated that non-OVC were living with parents who had slightly higher SES than children living with HIV/AIDS-infected parents ($p < .05$) and other orphans ($p < .05$).

Material Affluence Scale/Indicators (MAS): One-Way ANOVA analysis indicated significant group differences on household SES as reported by the children [$F(3, 287) = 3.512, p < .05$]. A subsequent follow-up t-test comparison showed that other orphaned children reported significantly lower scores than non-OVC ($t = 0.490, p < .01$). Children living with HIV/AIDS-infected parents also reported lower SES than non-OVC ($t = 0.569, p < .01$).

Perceived Socioeconomic Status: Significant group differences on youth's self-reported perceived socioeconomic status were observed using ANOVA. The t-test comparisons indicated that non-OVC reported significantly higher perceived SES than children living with HIV/AIDS-infected parents ($t = 0.840, p < .01$), who also reported higher perceived SES than AIDS orphaned children ($t = 1.701, p < .001$) and other orphaned children ($t = 1.272, p < .001$).

Perceived family prestige and respect: children orphaned by AIDS reported coming from families with lower social position than non-OVC ($t = 1.557, p < .001$) and other orphaned children ($t = 0.812, p < .05$). Children living with HIV/AIDS-infected parents also reported lower social position than non-OVC ($t = 1.200, p < .01$) but not AIDS orphaned children ($p = n. s.$).

6.3 Association between the socioeconomic indicators and psychological well being (Table 12)

As can be seen in Table 12, children's SES assessed using the traditional measures of parental education and occupation, was not significantly associated with delinquency, self-esteem, SDQ total difficulties or prosocial behaviours. Subsequently, no association was found on the SES with any SDQ subscale. SES showed an inverse association with reactive attachment disorder symptoms but this did not reach significance ($t = -.084$, $p = n.s.$). Thus the traditional SES based on parental education and occupation could not predict any of the psychological outcomes measured in the present study.

The MAS was associated with three of the mental health outcomes. Bivariate correlation analysis showed that lower MAS scores were associated with lower self-esteem ($p < .05$), and higher scores on emotional problems ($p < .01$) and SDQ total difficulties ($p < .05$).

Additionally, lower perceived SES (using the MacArthur Subjective Ladder) was associated with more SDQ total difficulties ($p < .001$), higher SDQ impact ($p < .001$), more RAD ($p < .001$), and reduced self-esteem ($p < .05$). Examining the SDQ subscales showed that more depressive symptoms ($p < .001$), more conduct problems ($p < .001$) and higher hyperactivity problems ($p < .001$) are related to lower perceived SES.

Finally, children's report of their families' social positions (prestige and respect) revealed significant associations with some of the psychological outcomes. Particularly, lower perceived social position was linked to more RAD ($p < .05$), more SDQ total difficulties ($p < .001$), and lower self-esteem ($p < .01$). SDQ subscale scores were similar to the total difficulties result except for prosocial behaviours and conduct problems that were not significant.

Among the four indicators of socioeconomic status, the MacArthur Subjective Ladder scale of perceived SES was the most sensitive in identifying significant group differences (Table 11) and showed significant relationships with several of the psychological variables measured in the present study (Table 12). Perceived SES was therefore analysed in subsequent computations to examine the mediating role of socioeconomic factors on the association between orphanhood and psychological outcomes.

Table 11: Young people's self-report: Estimated Mean (99% Confidence Interval) of Psychosocial Measures among Four Groups of Children

Source	Comparison group of children (n = 100) [1]	Orphaned and vulnerable children			F
		AIDS-orphaned children(n = 74) [2]	Other-orphans (n = 67) [3]	Children with HIV/AIDS-infected parents (n = 50) [4]	
Perceived SES	5.50 (2.44)	2.96 (1.24)	3.39 (1.19)	4.66 (1.88)	33.249 ^c
Perceived Family Respect	6.76 (1.97)	5.20 (2.51)	6.01 (2.22)	5.56 (2.43)	7.501 ^c
Material Affluence Scale	3.18 (0.98)	3.06 (1.24)	2.69 (1.21)	2.62 (1.18)	3.512 ^a
Traditional SES	3.24 (1.53)	2.92 (1.59)	2.75 (1.35)	2.72 (1.55)	1.958

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

Table 12: Associations between socio-demographic factors and psychological outcomes¹

Source	Delinquency	p	Self esteem	p	Emotional problems	P	Conduct problems	p	Peer problems	P
Perceived SES	-.086	n. s.	-.113	.05	-.266	.001	-.078	n. s.	-.193	.001
Perceived Family Respect	-.087	n. s.	-.155	.01	-.139	.01	-.102	n. s.	-.153	.01
Material Affluence Scale	-.046	n. s.	-.129	.05	-.188	.01	-.063	n. s.	-.096	n. s.
Traditional SES	.006	n. s.	-.080	n. s.	-.068	n. s.	-.038	n. s.	-.008	n. s.

¹The p-values (p) are those associated with bivariate associations. ²Includes only orphaned children

Table 12 Continuation: Associations between various Socioeconomic Measures used and psychological outcomes¹

Source	Hyperactivity	p	Total difficulties	p	Prosocial behaviour	P	Total impact	p	Total RAD	P
Perceived SES	-.187	.001	-.265	.001	-.013	n. s.	-.182	.001	-.291	.001
Perceived Family Respect	-.135	.05	-.191	.001	.003	n. s.	-.091	n. s.	-.118	.05
Material Affluence Scale	-.128	n. s.	-.165	.05	-.078	n. s.	-.058	n. s.	-.119	n. s.
Traditional SES	.035	n. s.	-.029	n. s.	-.044	n. s.	.031	n. s.	-.084	n. s.

¹The p-values (p) are those associated with bivariate associations. ²Includes only orphaned children

6.4 Mediating effects of perceived socioeconomic status on associations between orphanhood and mental health outcomes (Table 13 - 15)

Table 6B, described earlier, multivariate models demonstrated the association between orphanhood and each mental health outcome after controlling for relevant demographic co-factors. In table 14, the analyses adjusted for perceived socioeconomic status and relevant demographic co-factors to examine the association between orphanhood and each mental health outcome. Where there was a significant change in the association when socioeconomic status was controlled for a Sobel test was performed to explore the mediation effect of socioeconomic status on each mental health outcome among the orphanhood groups. Thus the write up that follows make references to Tables 6B & 7B as unadjusted models and Tables 14 & 15 as the adjusted model.

Delinquency

Controlling for age, household size and number of changes in residence in a regression model, orphanhood by AIDS was significantly associated with more delinquency problems [Table 6B] and this association remained but weakened when perceived socioeconomic status was accounted for in the adjusted model ($p < .05$) [Table 14]. Living with HIV/AIDS-infected parents was also significantly related to more delinquency problems [Table 6B] but this relationship was completely eliminated when perceived socioeconomic status was accounted for [Table 14]. Orphanhood by other causes was not associated with delinquency problems in either the model that controlled for only socio-demographic factors or the adjusted model that accounted for both socio-demographic factors and perceived SES. A GLM analysis using adjusted means indicated a significant group differences [$F(3, 283) = 3.919, p < .01$] where a subsequent post t tests indicated that AIDS orphaned children and children living with HIV/AIDS-infected parents both exhibited significantly more delinquency symptoms than other orphans and non-OVC.

Table 13: Young people's self-report (SES): Adjusted Mean (99% Confidence Interval) of Psychosocial Measures among Four Groups of Children

Source	Comparison group of children (n = 100) [1]	Orphaned and vulnerable children			Post hoc comparisons
		AIDS-orphaned children(n = 74) [2]	Other-orphans (n = 67) [3]	Children with HIV/AIDS-infected parents (n = 50) [4]	
Delinquency ¹	5.004 (4.393-5.616)	6.294 (5.642-6.946)	5.130 (4.485-5.775)	6.223 (5.474-6.972)	(4>3) ^a , (4>1) ^a , (2>3) ^b , (2>1) ^b
Self esteem ¹	7.767 (7.061-8.473)	9.283 (8.530-10.036)	8.179 (7.434-8.924)	9.447 (8.581-10.313)	(4>3) ^a , (4>1) ^b , (2>3) ^a , (2>1) ^b
Emotional problems ²	4.820 (4.443-5.197)	6.943 (6.583-7.304)	6.942 (6.580-7.304)	6.390 (5.965-6.816)	(4>1) ^c , (2>4) ^a , (2>1) ^c , (3>1) ^c
Conduct problems ³	3.365 (3.089-3.641)	3.334 (3.059-3.609)	3.271 (2.998-3.545)	3.252 (2.926-3.578)	N/A
Peer problems ³	4.804 (4.416-5.192)	5.920 (5.535-6.306)	5.310 (4.926-6.306)	6.055 (5.598-6.512)	(4>3) ^a , (4>1) ^c , (2>3) ^a , (2>1) ^c
Hyperactivity ³	3.598 (3.238-3.958)	4.880 (4.521-5.238)	4.614 (4.257-4.971)	4.199 (3.774-4.625)	(4>1) ^a , (2>4) ^a , (2>1) ^c , (3>1) ^c
Prosocial behaviour ⁴	8.271 (7.996-8.547)	8.472 (8.170-8.775)	8.447 (8.146-8.748)	8.399 (8.043-8.756)	N/A
Total difficulties ³	16.662 (16.09-17.23)	21.021 (20.46-21.59)	20.124 (19.56-20.69)	19.838 (19.17-20.51)	(4>1) ^c , (2>4) ^b , (2>3) ^a , (2>1) ^c , (3>1) ^c
Total impact ¹	3.792 (3.172-4.412)	4.105 (3.444-4.766)	4.272 (3.618-4.926)	3.895 (3.135-4.656)	N/A

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

Self esteem

A GLM analysis [Table 5] that adjusted for age, household size, number of changes in residence and perceived SES showed a significant between groups difference [$F(3, 283) = 4.656, p < .01$]. A follow-up multiple comparison indicated that AIDS orphaned children exhibited lower self-esteem as compared to non-OVC ($p < .001$) and orphaned children of other causes ($p < .05$). Similarly, children living with HIV/AIDS-infected parents shown lower self-esteem than both non-OVC ($p < .001$) and other orphaned children ($p < .05$) [Table 13].

Orphanhood by AIDS was associated ($p < .01$) with lower self esteem after adjusting for age, household size and number of changes in residence and this association remained but weakened ($p < .05$) when perceived SES was included. However, orphanhood by other causes was not associated with self esteem in either the unadjusted and adjusted models [Tables 6B & 14]. Finally, living with an HIV/AIDS-infected parent was associated ($p < .01$) with lower self-esteem in the model that controlled for only socio-demographic factors, but this association was eliminated in a subsequent model after controlling for HIV/AIDS related stigma and relevant socio-demographic cofactors [Table 21].

Total Difficulties

Parental report indicated that, overall, OVC experience significantly more psychological difficulties than non-OVC after controlling for relevant socio-demographic factors and perceived SES [$F(3, 244) = 50.690, p < .001$]. The analysis of children's self-ratings confirmed this and also showed that among the OVC, AIDS orphaned children experience more psychological distress than both other orphaned children ($t = 0.912, p < .01$) and children living with HIV/AIDS-infected parents ($t = 1.194, p < .01$). Regression analyses of children's self-reports indicated that orphanhood by AIDS, orphanhood by other causes and living with HIV/AIDS-infected parents were all independently significantly associated with more psychological difficulties in a model that controlled for age, household size, number of changes in residence and number of siblings at home [Table 6B]. When perceived SES was accounted for in the regression model, the individual associations between orphanhood types and more SDQ total psychological difficulties as reported by the children were completely eliminated except for orphanhood by AIDS where it remained significant ($p < .001$) [Table 14].

Conduct Problems

Controlling for age, household size, number of changes in residence and number of children at home, AIDS orphanhood was not associated with children's self-reports of conduct problems [Table 6B], and there was still no association when perceived SES was included [Table 14]. Similarly, orphanhood by other causes and living with an HIV/AIDS-infected parent were not also related to conduct problems in both the model that controlled for only socio-demographic factors [Table 6B] and the model that also accounted for socio-demographic factors and perceived SES [Table 14]. Carers' ratings however, showed a different picture. In Table 7B, discussed earlier, carers' reports indicated that controlling for socio-demographic factors orphanhood by AIDS, orphanhood by other causes and living with an HIV/AIDS-infected parent were all individually related to more conduct problems in children. When perceived SES was accounted for in the regression model, these individual associations between orphanhood types and more conduct problems as reported by the caregivers were completely eliminated except for orphanhood by AIDS where it remained significant ($p < .001$) [Table 15].

Depression

In Regression analyses, children's self-reports indicated that orphanhood by other causes was significantly associated with more symptoms of depression after controlling for socio-demographic factors [Table 6B], and this association remained after controlling for perceived SES in an adjusted model [Table 14]. Orphanhood by AIDS was also significantly associated with more depression in the unadjusted model [Table 6B], and this association remained significant but reduced ($p < .01$) in the adjusted model that accounted for socio-demographic factors and perceived SES [Table 14]. Finally, living with HIV/AIDS-infected parents was significantly associated with more symptoms of depression in the model [Table 6B] that controlled for socio-demographic factors but this association was completely eliminated in the model that controlled for both socio-demographic factors and perceived SES [Table 14]. However, analysis of the caregivers' reports after accounting for socio-demographic factors and perceived SES indicated that orphanhood by other causes and living with HIV/AIDS-infected parents but not orphanhood by AIDS were significantly associated with symptoms of depression [Table 15].

Peer Problems

Controlling for age, household size, number of changes in residence and number of children at home in a regression model [Table 6B], children's self-reports indicated that orphanhood by AIDS was significantly associated with more peer problem, and this relationship was maintained but weakened after controlling for perceived SES [Table 14]. Orphanhood by other causes was not associated with peer problems in either the model that controlled for socio-demographic factors [Table 6B] or the model that accounted for socio-demographic factors and perceived SES [Table 14]. Living with an HIV/AIDS-infected parent was associated with more peer problems in the model that controlled for socio-demographic factors [Table 6B] and this association remained when perceived SES was included in the adjusted model [Table 14]. In a parallel dimension, as presented earlier in Table 7B, caregivers' reports indicated that controlling for socio-demographic factors, orphanhood by AIDS, orphanhood by other causes and living with an HIV/AIDS-infected parent were all individually related to more peer problems in children ($p < .001$). However, when perceived SES was accounted for in an adjusted regression model, these individual associations between orphanhood types and more peer problems as reported by the caregivers remained significant but weakened except for orphanhood by AIDS where it was completely eliminated [Table 14].

Hyperactivity

Controlling for age, household size, number of changes in residence and number of children at home, children's self-reported scores indicate that orphanhood by AIDS was significantly associated with more hyperactivity, and this remained but reduced in an adjusted model that controlled for perceived SES [Table 14]. Living with an HIV/AIDS-infected parent was associated with more hyperactivity in a model that controlled for socio-demographic factors but this association was eliminated when perceived SES was accounted for in an adjusted model [Table 14]. Furthermore, orphanhood by other causes was associated with more hyperactivity in the model that controlled for only socio-demographic factors [Table 6B], and this association remained significant when perceived SES was included [Table 14]. However, analysis of the caregivers' reports after accounting for socio-demographic factors and perceived SES indicated that the individual associations between living with HIV/AIDS-infected parents as well as orphanhood by other causes with more hyperactivity were completely eliminated [Table 15].

Prosocial behaviours

There were no significant differences between the groups on self-reported prosocial and helping out behaviours in a GLM analysis. Similarly, both children's self-reports and caregivers' ratings indicate that there were no individual significant associations found between orphanhood by AIDS, orphanhood by other causes and living with an HIV/AIDS-infected parent with helping out behaviours in either unadjusted (controlled only for age) [Tables 6B & 7B] or the adjusted model that included perceived SES [Tables 14 & 15].

Reactive Attachment Disorders (RAD)

Orphanhood by AIDS and orphanhood by other causes were individually associated ($p < .001$) with more reactive attachment disorder symptoms in a regression model that controlled for age, household size, number of changes in residence and present educational status of the child. When perceived SES was accounted for in an adjusted regression model, these individual associations between orphanhood by AIDS and orphanhood by other causes with more reactive attachment disorders symptoms remained significant but weakened ($p < .05$) [Table 15]. Living with an HIV/AIDS-infected parent was associated with more reactive attachment disorder symptoms in the model that controlled for only socio-demographic factors but the association was completely eliminated in the model that controlled for both socio-demographic factors and perceived SES [Table 15].

Diagram 4: Mediation model for Socioeconomic-related factors and orphanhood by AIDS based on Sobel tests

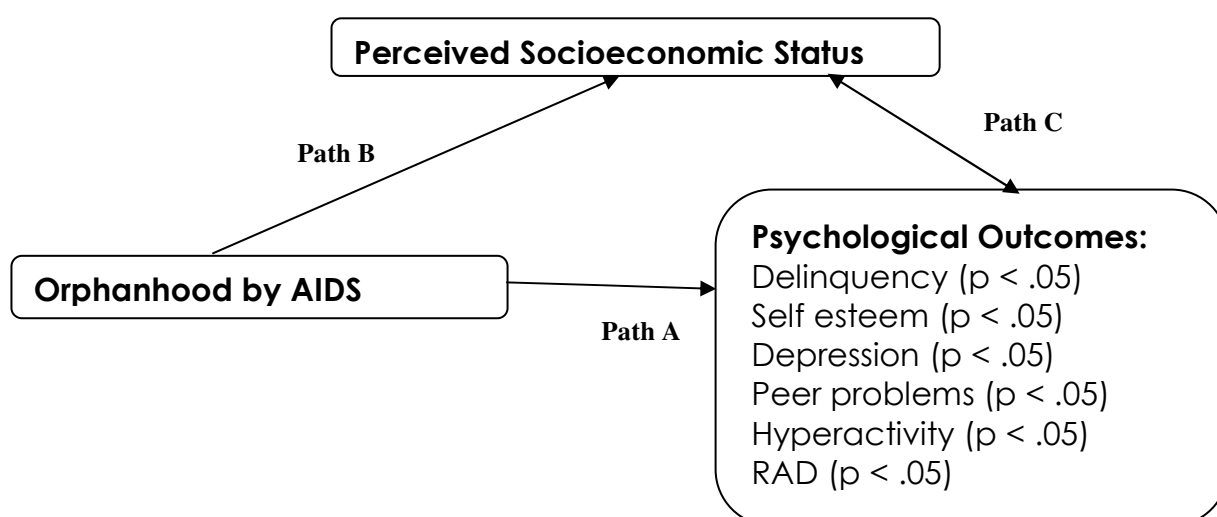


Diagram 5: Mediation model for Socioeconomic-related factors and orphanhood by other causes based on Sobel tests

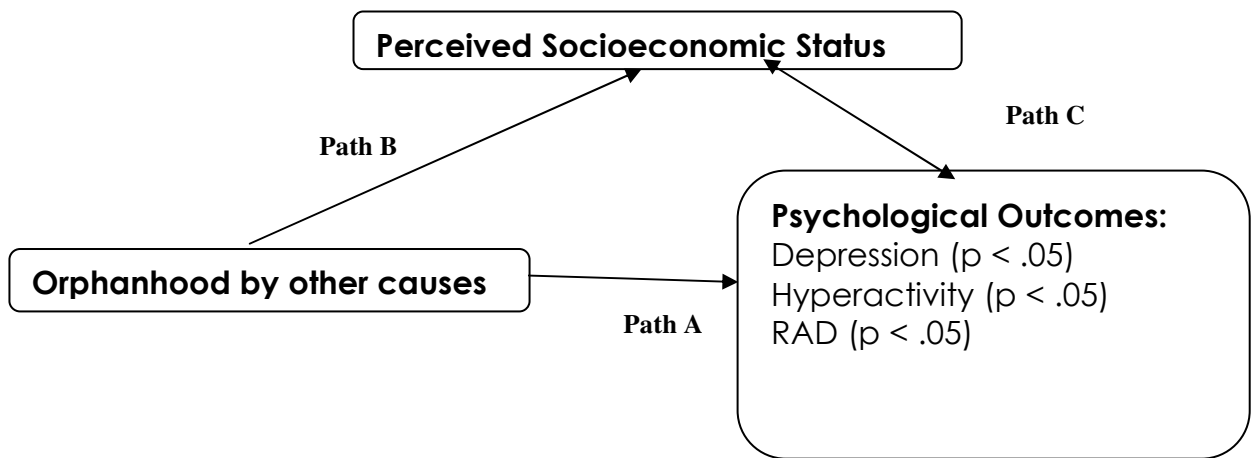


Diagram 6: Mediation model for Socioeconomic-related factors and living with HIV/AIDS-infected parent(s) based on Sobel tests

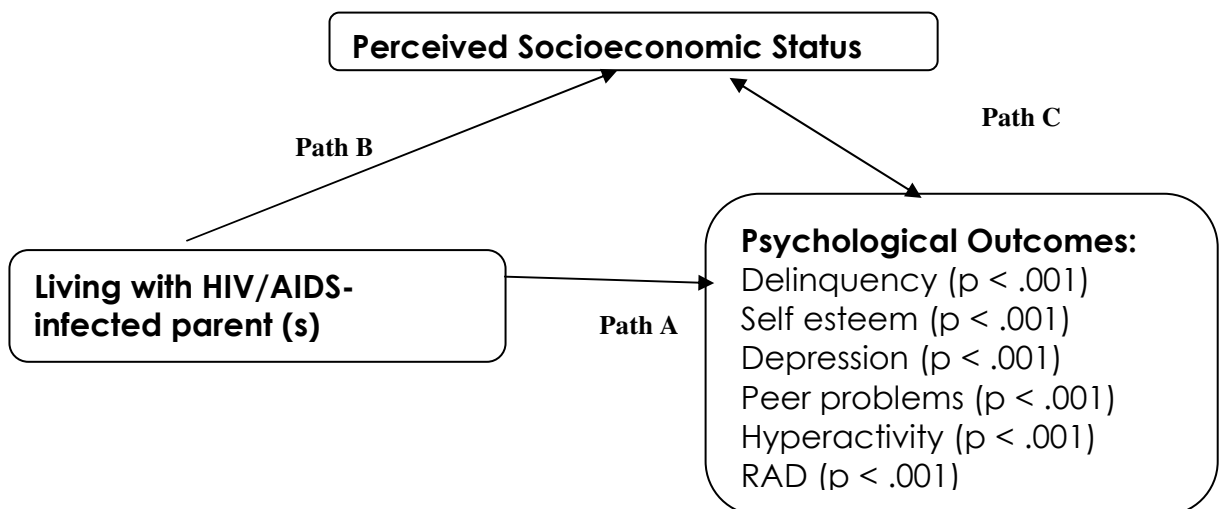


Table 14: (MODEL 2): Child self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors and Perceived SES

Source	Delinquency ¹	Self esteem ¹	Total difficulties ³	Emotional problems ²	Conduct problems ³	Peer problems ³	Hyperactivity ³	Total impact ¹	Prosocial behaviour ⁴
Orphaned by AIDS	.132 ^a	.119 ^a	.269 ^c	.150 ^b	.021	.131 ^b	.170 ^b	.050	.032
Orphaned by other causes	-.112	-.086	.093	.194 ^c	-.021	.086	.068 ^c	.126 ^a	.021
Living with HIV/AIDS infected parent	.097	.125 ^a	.047	.077	-.023	.143 ^a	-.055	-.148 ^a	.004
R-Square	.157	.185	.791	.428	.534	.558	.230	.347	.055
R ² Change	.001	.001	.004	.007	.002	.002	.006	.004	.001
Adjusted R	.142	.171	.786	.411	.525	.548	.214	.335	.045
F – Change	10.635 ^c	12.967 ^c	178.000 ^c	26.343 ^c	54.346 ^c	59.657 ^c	14.137 ^c	30.246 ^c	5.526 ^c

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

Table 15 (MODEL 2): Informants' Reports: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, controlling for relevant socio-demographic cofactors and Perceived SES

Source	Total RAD ⁵	Total Difficulties ³	Emotional problems ²	Conduct problems ³	Peer problems ³	Hyperactivity ³	Total impact	Prosocial behaviour
Orphaned by AIDS	.129 ^a	.045	.074	.210 ^c	.067	.077	.036	.054
Orphaned by other causes	.136 ^a	.183 ^c	.143 ^b	.057	.164 ^b	.018	.090	-.014
Living with HIV/AIDS infected parent	-.013	.147 ^a	.182 ^b	.108	.135 ^a	.023	.030	.030
R-Square	.253	.372	.286	.167	.195	.055	.157	.022
R ² Change	.092	.040	.036	.013	.038	.017	.074	.001
Adjusted R	.234	.361	.266	.149	.177	.034	.142	.011
F – Change	5.705 ^c	4.493 ^c	1.994 ^b	0.865	2.614 ^a	1.017	6.332 ^c	0.217

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

⁵Adjusted model controls for age, household size, no. of changes in residence, presently in school.

SUMMARY OF FINDINGS

Psychological Outcomes	Association of Being orphaned by AIDS	Effect Remaining when Socioeconomic Status is controlled
Delinquency	Significant	Effect Remains but Reduced
Self-esteem	Significant	Effect Remains but Reduced
Depression	Significant	Effect Remains but Reduced
Conduct Problems	Significant	Effect Remains
Peer Problems	Significant	Effect Remains but Reduced
Hyperactivity	Significant	Effect Remains but Reduced
Reactive Attachment Disorder	Significant	Effect Remains but Reduced
Psychological Outcomes	Association of Living with HIV–infected Parent	Effect Remaining when Socioeconomic Status is controlled
Delinquency	Significant	Effect Eliminated
Self-esteem	Significant	Effect Eliminated
Depression	Significant	Effect Eliminated
Conduct Problems	Significant	Effect Remains
Peer Problems	Significant	Effect Remains but Reduced
Hyperactivity	Significant	Effect Eliminated
Reactive Attachment Disorder	Significant	Effect Eliminated
Psychological Outcomes	Association of being orphaned by other causes	Effect Remaining when Socioeconomic Status is controlled
Delinquency	No Effect	
Self-esteem	No effect	
Depression	Significant	Effect Remains but Reduced
Conduct Problems	No Effect	
Peer Problems	No effect	
Hyperactivity	Significant	Effect Remains but Reduced
Reactive Attachment Disorder	Significant	Effect Remains but Reduced

Findings in the Context of the International Literature

The limited literature on the relationship between socioeconomic status and psychological wellbeing among OVC suffers several methodological weaknesses and presents inconsistent findings. Some studies conducted in Africa found that AIDS-orphaned children live in poorer households and consequently experience heightened psychological distress (Nyamukapa et al 2006, Chatterji et al 2005, Bhargava 2005, Deininger et al 2001, Konde-Lule et al 1996). Others such as Atwine et al (2005) and Ainsworth & Filmer (2002) failed to find neither differences between orphans and non-orphans on SES nor any association between psychological problems and socioeconomic status. The above studies all used the conventional SES. The present study could not find any such evidence that children orphaned by AIDS or OVC in general are worse off in terms of socioeconomic status as measured by conventional means (parental education and occupation).

However, considerably more children orphaned by AIDS and children living with HIV/AIDS-infected parents identified themselves within the lower hierarchy of perceived socioeconomic status. What is evident is that differential perceived SES but not objective SES exists among the various groups in the present study. Secondly, perceived SES is a more sensitive predictor of adolescent psychological outcomes than the traditional objective SES that uses parental educational levels and occupation. These findings regarding psychological outcomes support earlier general works that examined adolescent perceived socioeconomic status (Goodman et al 2005, Piko and Fitzpatrick 2001). Speculatively, one can say that children's socioeconomic status is not rigidly tied to only their parents' education level and occupational grades. Adolescents perceived SES probably captures other dimensions than the conventional SES, and may reflect even the psychological meanings and cognitive appraisals that they attach to their circumstances (Frojd et al 2006). The measure of perceived SES used in this study offered all adolescents a single comparison reference (the Manya Krobo District) within which they located their socioeconomic standing.

Overall, when perceived SES was controlled, the significant differences between the orphanhood groups on the various psychological outcomes were either significantly reduced or completely eliminated. Earlier studies failed to account for SES (for exceptions see review in Cluver, Gardner & Operario 2007) which brings to question the high levels

of psychological problems that were often reported among AIDS orphaned children. The present findings suggest that the psychological difficulties that OVC experienced might have been exaggerated and wrongly, wholly attributed to orphanhood or AIDS orphanhood in the limited, scattered available literature. The key finding of the present analysis is thus: the demonstration that among OVC, perceived SES could explain psychological distress above and beyond the impact of orphanhood or AIDS orphanhood, and did eliminate or reduce associations between orphanhood status and psychological problems. The present finding, thus supports growing evidence in the general health literature that young peoples' self-perception (rather than material or parental educational status) predicts psychological functioning directly or indirectly through various mechanisms (Rutter 2003, Bray 2004).

Contextual Interpretation of Findings and Policy Implications

In the earlier section (research question 2), it was established that AIDS orphaned children and children living with HIV/AIDS-infected parents experience more psychological difficulties than both other orphans and non-OVC. The present analyses identified that perceived socioeconomic status mediates orphanhood status and the experience of psychological problems.

The findings when taken together suggest that perceived SES is one of the routes through which the effect of being an AIDS orphan or living with HIV/AIDS-infected parent affects psychological status. Perceived SES when controlled eliminated differences between children living with HIV/AIDS-infected parents and other groups on psychological symptoms of delinquency, hyperactivity, depression. Perceived SES also reduced the significant association between AIDS-orphanhood compared to other groups on symptoms of self-esteem, delinquency, peer problems, depression and hyperactivity. Similarly, perceived socioeconomic status when controlled for, eliminate the association with reactive attachment disorders among children living with HIV/AIDS-infected parents and significantly reduced it among children orphaned by AIDS and other orphans. Clearly, the present findings open the pathways of redress of psychological distress among children affected by HIV/AIDS via socio-economic relief programs such as food security, receipt of welfare grants access to school and employment in the household. Such a policy intervention would enhance children living economic conditions that would influence the way they conceive, perceive and interpret their socioeconomic situation.

The implication of the present findings is that if enhancing positive self-perception of one's situations is the focus of intervention strategies for OVC, such strategies will be beneficial when they are aimed at children before they are orphaned. However, psychological distress would be significantly reduced (not eliminated) if the intervention begins after children are orphaned.

It is widely acknowledged that many of the commonly used measures of SES are limited in terms of their compositional and contextual coverage. There is also the difficulty in the collection of such SES data especially among OVC. This is the first study to demonstrate a robust association between perceived SES and psychological outcomes among OVC.

The overall findings suggest robustly that the association between being affected by HIV/AIDS and psychological difficulties is not mediated by SES as measured conventionally. Clearly this reflects the importance and urgency of understanding influences at the individual, societal and community levels in formulating interventions to reduce the psychological distress among OVC.

Limitations Specific to this Analysis

Contrary to earlier assumptions that perceived SES and traditional SES are congruent or at least interrelated, the present findings suggest otherwise (Piko & Fitzpatrick 2001). A shortcoming of the traditional parental occupation and education as makers of SES is that they are becoming past deciders. This is because when HIV/AIDS enter the home, irrespective of one's occupation or education, if you are too ill to work you may be unemployed or at best underemployed. Perhaps, time of unemployment prior to illness or death could be explored as a possible helpful factor or indicator of SES. The MAS could be faulted concerning its scoring of all types of assets and belongings on equal level. This has drawbacks on the scales sensitivity, accuracy and applicability in adolescent health research. The reader should clearly also bear in mind the limitation of perceived SES being used as a proxy for poverty-related factors when drawing conclusions drawn from this study. The lesson however is that understanding the dynamic of perceived SES among OVC is a step closer to understanding the determinants of more objective indicators of psychological wellbeing. Measurement of perceived SES, as used in the present study may work well for societies with pronounced, more visible inequalities and divides but may be less useful in societies with less visible and less sensitive social hierarchies.

CHAPTER SEVEN – STIGMA, DISCRIMINATION AND SOCIAL EXCLUSION, MENTAL HEALTH

Question 4: What community variables (stigma and discrimination) are mediating any differences in mental health problems experienced by the different groups of children?

- 4b) Are AIDS orphaned children more stigmatized than other children?
- 4a) Do HIV/AIDS related stigma, discrimination and social exclusion mediate differences in mental health problems among OVC?

7.1 Differences between OVC groups on Stigma and traumas [Table 18]

One particular item asked about the general perception of stigma against children affected by HIV/AIDS: do you feel that people in this community reject children who have AIDS or whose caregivers have AIDS? Overall perception of rejection of HIV/AIDS families was very high (83%) but showed no group differences. This suggests that all the children, both OVC and non-OVC, acknowledge the existence of stigmatization, discrimination and social exclusion of families affected by HIV/AIDS.

Significant group differences were however observed on the children's self-reported experience of stigma and social exclusion [$F(3, 287) = 23.326, p < .001$]. A subsequent post hoc multiple comparison [Table 18] indicated that AIDS orphaned children reported significantly more stigma and social exclusion than both other orphaned children ($t = 0.731, p < .001$) and non-OVC ($t = 1.476, p < .001$). Similarly children living with HIV/AIDS-infected parents also reported experiencing significantly more stigma and social exclusion than both other orphaned children ($t = 0.815, p < .001$) and non-OVC ($t = 1.560, p < .001$). Other orphaned children reported significantly more stigma than non-OVC. Experience of community traumas as measured by being attacked or witnessing an attack outside the home were generally low and showed no significant group differences.

7.2 Association between stigma and community traumas, and psychological outcomes [Table 19]

Bivariate correlations using Pearson r [Table 19] indicate that experiencing more stigma was significantly associated ($p < .001$) with higher scores on delinquency, total difficulties,

peer problems, conduct problems and symptoms of depression but not hyperactivity scores ($p = n. s.$). Self-reported account of experiencing more stigma and social exclusion was also associated with more reactive attachment disorder symptoms and lower self-esteem and prosocial behaviours. Experiencing more community trauma was significantly associated with higher scores on peer problems ($p < .001$) and lower scores on hyperactivity ($p < .05$). The associations between self-reported community traumas with all other psychological outcomes were not significant. In preliminary regression analyses accounting for both stigma and community traumas, it was found that community traumas did not contribute significantly to the models. Community traumas were therefore dropped by backward elimination in the final models except for the models on peer problems and hyperactivity.

7.3 Mediating effect of HIV/AIDS related stigma, discrimination and social exclusion and socioeconomic status on associations between orphanhood and mental health outcomes (Table 13 - 15)

Delinquency

When controlling for age, household size and number of changes in residence in an adjusted model, orphanhood by AIDS and living with an HIV/AIDS-infected parent were each significantly associated ($p < .01$) with higher delinquency problems [Table 6B]. These associations were completely eliminated when stigma, discrimination and social exclusion was accounted for in a subsequent regression model [Table 21]. Orphanhood by other causes was not associated with delinquency problems in either the model that controlled for only socio-demographic factors or the adjusted model that accounted for both socio-demographic factors and HIV/AIDS related stigma, discrimination and social exclusion [Tables 6B and 21]. In a GLM that accounted for stigma and discrimination and the demographic variables, the earlier significant orphanhood group differences that were noted when only demographic factors were controlled were completely eliminated [$F(3, 286) = 1.503, p = n. s.$]. This model accounted for 22% of the variance in delinquent behaviours with only two significant predictors: stigma and discrimination ($\beta = .452, p < .001$) and age ($\beta = .180, p < .01$).

Table 18: Young people's self-report: Orphanhood or Groups differences on Stigma and Community trauma

Source	Comparison group of children (n = 100) [1]	Orphaned and vulnerable children			F
		AIDS-orphaned children(n = 74) [2]	Other-orphans (n = 67) [3]	Children with HIV/AIDS- infected parents (n = 50) [4]	
Rejection of HIV/AIDS families (%)	84.0	90.5	77.6	88.0	5.045
Stigma (Mean, SD)	2.24 (1.46)	3.72 (1.22)	2.99 (1.54)	3.80 (0.95)	23.326 ^c
Comm. Unconcern (%)	78.0	83.8	65.7	60.0	13.668 ^c
Isolated (%)	47.0	77.0	61.2	82.0	25.228 ^c
Rather hurt than help (%)	44.0	71.6	59.7	64.0	14.508 ^c
Speak badly about	41.0	66.2	62.7	78.0	22.779 ^c
Make fun off	32.0	73.0	49.3	78.0	42.442 ^c
Community Trauma (Mean, SD)	1.57 (1.07)	1.76 (1.23)	1.78 (1.11)	2.00 (1.03)	1.725
Being attacked (%)	49.0	59.5	55.2	64.0	3.645
Witnessed attacked (%)	72.0	66.2	74.6	82.0	3.907

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

Table 19: Associations between Stigma and community traumas and psychological outcomes using Pearson r

Source	Stigma	p	Community traumas	p
Delinquency	.391	.001	.090	n. s.
Self Esteem	.374	.001	-.002	
SDQ Scale:				
Total Difficulties	.440	.001	.067	n. s.
Emotional problems	.240	.001	.032	n. s.
Conduct problems	.275	.001	.045	n. s.
Peer Problems	.548	.001	.186	.001
Hyperactivity	.097	n. s.	-.125	.05
Prosocial behaviours	-.147	.01	.001	n. s.
Impact	.191	.001	.003	n. s.
RPQ:				
RAD	.294	.001	.043	n. s.
Inhibited Problems	.211	.001	-.037	n. s.
Disinhibited Problems	.283	.001	.096	n. s.

Self esteem

Controlling for age, household size and number of changes in residence among the entire sample, the results indicated significant effects for group differences on self esteem and future orientation [$F(3, 287) = 4.607, p < .01$]. In a model that included stigma and discrimination, the model explained 23% of the variance in self-reported levels of self esteem and the significant differences between the groups were eliminated [$F(3, 186) = 2.047, p = n. s.$]. There were two significant predictors in this model: age ($\beta = .164, p < .05$) and stigma and discrimination ($\beta = .446, p < .001$).

In a complementary regression analysis, orphanhood by AIDS was associated ($p < .01$) with lower self esteem after adjusting for age, household size and number of changes in residence [Table 6B] but this association was eliminated when HIV/AIDS-related stigma and discrimination was included [Table 21]. However, orphanhood by other causes was not associated with self esteem in either the unadjusted model and adjusted model that controlled for stigma [Tables 6B & 21]. Finally, living with an HIV/AIDS-infected parent was associated ($p < .01$) with lower self-esteem in the model that controlled for only socio-demographic factors, but this association was eliminated in a subsequent model after controlling for HIV/AIDS related stigma and relevant socio-demographic cofactors [Table 21].

Conduct Problems

Controlling for age, household size, number of changes in residence and number of children at home, AIDS orphanhood was not associated with children's self-reports of conduct problems [Table 6B], and there was still no association when HIV/AIDS related stigma was included [Table 21]. Similarly, orphanhood by other causes and living with an HIV/AIDS-infected parent were not also associated with conduct problems in both the model that controlled for only socio-demographic factors [Table 6B] and the one that also accounted for both HIV/AIDS related stigma and socio-demographic factors [Table 21].

Carers' ratings however, showed a different picture. As represented in Table 7B, carers' reports indicated that controlling for socio-demographic factors, orphanhood by AIDS, orphanhood by other causes and living with an HIV/AIDS-infected parent were all individually significantly associated with more conduct problems in children. In the adjusted models controlling for HIV/AIDS related stigma and discrimination, these

individual associations between orphanhood types and more conduct problems as reported by the caregivers were completely eliminated except for orphanhood by AIDS where it remained significant ($p < .001$) [Table 22].

Peer Problems

Controlling for age, household size, number of changes in residence and number of children at home in regression models [Table 6B], children's self-reports indicate that orphanhood by AIDS was significantly associated with more peer problems, but this relationship was completely eliminated after controlling for HIV/AIDS related stigma and discrimination [Table 21]. Orphanhood by other causes was not associated with peer problems in both the model that controlled for only socio-demographic factors [Table 6B] and the model that accounted for socio-demographic factors and stigma [Table 21]. Living with an HIV/AIDS-infected parent was associated with more peer problems in the model that controlled for socio-demographic factors [Table 6B] but this association was eliminated when experience of stigma was included in the adjusted model [Table 21]. The multivariate model has only two significant predictors: age ($\beta = .435$, $p < .001$) and stigma ($\beta = .398$, $p < .001$).

The caregivers' reports as presented in Table 7B, however, indicated that controlling for only socio-demographic factors, orphanhood by AIDS, orphanhood by other causes and living with an HIV/AIDS-infected parent were all individually related to more peer problems in children ($p < .001$). In a subsequent model in which experience of stigma was accounted for, the association between orphanhood by AIDS and more peer problems as well as the relationship between living with HIV/AIDS-infected parent and more peer problems as reported by the caregivers were completely eliminated [Table 22]. However, the association between orphanhood by other causes and more peer problems was reduced but remained significant ($p < .01$) [Table 22].

Depression

In Regressions analyses, living with HIV/AIDS-infected parent was significantly associated with more symptoms of depression in the model [Table 6B] that controlled for socio-demographic factors but this association was completely eliminated in the model that controlled for both socio-demographic factors and experience of stigma [Table 21]. Orphanhood by AIDS was also significantly associated with more depression in the model

that controlled for only socio-demographic factors [Table 6B], and this association remained significant but reduced ($p < .01$) in the model that accounted for socio-demographic factors and HIV/AIDS related stigma [Table 21]. Finally, children's self-reports indicated that orphanhood by other causes was significantly associated with more symptoms of depression in a regression model that controlled for socio-demographic factors [Table 6B], and this association remained after controlling for HIV/AIDS related stigma [Table 21]. The overall multivariate model explains 51% of the total variance in self-reported depressive symptoms with only three significant predictors: age ($p < .001$) gender ($\beta = .890$, $p < .001$) and orphanhood group ($\beta = .187$, $p < .001$).

As represented in Table 7B, carers' reports indicated that when controlling for only socio-demographic factors, orphanhood by AIDS, orphanhood by other causes and living with an HIV/AIDS-infected parent were each individually significantly associated with more conduct problems in children. However, after accounting for both socio-demographic factors and stigma, orphanhood by other causes and living with HIV/AIDS-infected parents but not orphanhood by AIDS were each significantly associated with symptoms of depression, although reduced [Table 22].

Hyperactivity

When controlling for age, household size, number of changes in residence and number of children at home, children's self-reported scores indicate that orphanhood by AIDS was significantly associated with more hyperactivity [Table 6B], and this remained but reduced in an adjusted model that controlled for HIV/AIDS related stigma [Table 21]. Living with an HIV/AIDS-infected parent was associated with more hyperactivity in a model that controlled for only socio-demographic factors [Table 6B] but this association was completely eliminated when HIV/AIDS related stigma was also accounted for in an adjusted model [Table 21]. Furthermore, orphanhood by other causes was associated with more hyperactivity in the model that controlled for only socio-demographic factors [Table 6B], and this association was retained when HIV/AIDS related stigma was included [Table 21].

However, analysis of the caregivers' reports, after accounting for both socio-demographic factors and HIV/AIDS related stigma, indicated that the individual significant associations [Table 7B] between living with HIV/AIDS-infected parents and orphanhood by other causes with more hyperactivity were completely eliminated [Table 22].

Table 20: Young people's self-report (STIGMA AND DISCRIMINATION): Estimated Mean (99% Confidence Interval) of Psychosocial Measures among Four Groups of Children

Source	Comparison group of children (n = 100) [1]	Orphaned and vulnerable children			Post hoc comparisons
		AIDS-orphaned children(n = 74) [2]	Other-orphans (n = 67) [3]	Children with HIV/AIDS-infected parents (n = 50) [4]	
Delinquency ¹	5.382 (4.815-5.948)	5.932 (5.327-6.537)	5.146 (4.535-5.756)	5.982 (5.255-6.709)	N/A
Self esteem ¹	8.058 (7.396-8.720)	9.009 (8.302-9.716)	8.200 (7.487-8.913)	9.243 (8.394-10.093)	N/A
Emotional problems ²	4.862 (4.500-5.225)	6.911 (6.559-7.264)	6.928 (6.571-7.285)	6.405 (5.978-6.833)	(4>1) ^c , (2>1) ^c , (3>1) ^c
Conduct problems ³	3.412 (3.142-3.682)	3.287 (3.021-3.553)	3.249 (2.980-3.519)	3.257 (2.928-3.585)	N/A
Peer problems ³	5.048 (4.699-5.397)	5.711 (5.367-6.054)	5.371 (5.024-5.718)	5.795 (5.372-6.218)	(4>1) ^a , (2>1) ^a
Hyperactivity ³	3.481 (3.134-3.829)	4.984 (4.642-5.325)	4.593 (4.247-4.938)	4.307 (3.886-4.728)	(4>1) ^b , (2>4) ^b , (2>1) ^c , (3>1) ^c
Prosocial behaviour ⁴	8.198 (7.937-8.458)	8.543 (8.256-8.831)	8.443 (8.151-8.735)	8.447 (8.091-8.803)	N/A
Total difficulties ³	16.828 (16.28-17.38)	20.871 (20.33-21.41)	20.120 (19.57-20.67)	19.734 (19.07-20.40)	(4>1) ^c , (2>4) ^b , (2>3) ^a , (2>1) ^c , (3>1) ^c
Total impact ¹	3.655 (3.060-4.249)	4.240 (3.605-4.875)	4.314 (3.674-4.955)	3.914 (3.152-4.677)	N/A

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

Table 21: (MODEL 2): Young people's self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors and Stigma

Source	Delinquency ¹	Self esteem ¹	Total difficulties ³	Emotional problems ²	Conduct problems ³	Peer problems ³	Hyperactivity ³	Total impact ¹	Prosocial behaviour ⁴
Orphaned by AIDS	.076	.071	.266 ^c	.168 ^b	-.001	.080	.206 ^b	.032	.067
Orphaned by other causes	-.101	-.072	.135 ^a	.214 ^c	-.028	-.049	.076 ^c	.060	.028
Living with HIV/AIDS infected parent	.058	.087	-.018	-.028	-.015	.076	-.063	-.025	.009
R-Square	.214	.228	.793	.421	.533	.625	.235	.343	.064
R ² Change	.058	.043	.007	.033	.001	.069	.011	.001	.011
Adjusted R	.200	.215	.789	.405	.523	.617	.219	.332	.054
F - Change	20.909 ^c	16.024 ^c	9.303 ^c	0.033	0.281	52.367 ^c	3.922 ^a	0.225	3.302

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

Table 22 (MODEL 2): INFORMANTS REPORTS: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, controlling for relevant socio-demographic cofactors and Perceived SES

Source	RAD ⁵	Total Difficulties ³	Emotional problems ²	Conduct problems ³	Peer problems ³	Hyperactivity ³	Total impact ¹	Prosocial behaviour ⁴
Orphaned by AIDS	.174 ^b	.178 ^b	.101	.197 ^c	.101	.088	.028	.038
Orphaned by other causes	.153 ^b	.173 ^b	.157 ^b	.068	.175 ^b	.021	.133 ^a	.011
Living with HIV/AIDS infected parent	-.027	.138 ^a	.151 ^b	.055	.099	.025	.089	-.046

^a Denotes significance at the 0.05 level, ^b denotes significance at the 0.01 level, ^c denotes significance at the .001 level

¹ Adjusted model controls for age, household size, no. of changes in residence;

² Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

³ Adjusted model controls for age, household size, no. of changes in residence, no. of children at home, presently in school;

⁴ Adjusted model controls for age, gender, household size, no. of changes in residence, no. of children at home, presently in school;

⁵ Adjusted model controls for age;

Total Difficulties

Regression analyses of children's self-reports indicates that orphanhood by AIDS, orphanhood by other causes and living with HIV/AIDS-infected parents were all, independently significantly associated with more psychological difficulties in a model that controlled for age, household size, number of changes in residence and number of siblings at home [Table 6B]. When HIV/AIDS related stigma was accounted for in subsequent models, the significant associations between orphanhood types and more SDQ total psychological difficulties as reported by the children were completely eliminated for living with HIV/AIDS-infected parent but remained significant for orphanhood by AIDS and orphanhood by other causes [Table 21].

The carers' reports, however, indicate that orphanhood by AIDS, orphanhood by other causes and living with HIV/AIDS-infected parents were all individually significantly associated with more psychological difficulties in children even after controlling for socio-demographic factors and HIV/AIDS related stigma.

Total Impact

Orphanhood by AIDS, orphanhood by other causes, and living with an HIV/AIDS-infected parent were all individually not associated with total impact burden in both the model that controlled for only socio-demographic factors [Tables 6B & 7B] and in the model that controlled for both socio-demographic factors and HIV/AIDS related stigma [Tables 21 & 22]. This was the same for both the children's self-reports [Table 21] and carers reports [Table 22].

Prosocial Behaviours

There were no significant differences between the groups on self-reported prosocial and helping out behaviours in a GLM analysis that controlled for both HIV/AIDS related stigma and socio-demographic factors [$F(3, 186) = 1.026, p = n. s.$]. Similarly, both children's self-reports and caregivers' ratings indicate that there were no associations found between orphanhood by AIDS, orphanhood by other causes and living with an HIV/AIDS-infected parent with helping out behaviours in either of the models that

controlled for only socio-demographic factors [Table 6B & 7B] and the models that controlled for HIV/AIDS related stigma and socio-demographic factors [Tables 21 & 22].

Reactive Attachment Disorders

Orphanhood by AIDS was associated ($p < .001$) with more reactive attachment disorder symptoms in a regression model that controlled for age, household size, number of changes in residence and present educational status of children [Table 7B]. When HIV/AIDS related stigma was included, the association remained significant but was weakened ($p < .01$) [Table 22]. Living with an HIV/AIDS-infected parent was also significantly associated with more reactive attachment disorder symptoms in a model that controlled for only socio-demographic factors [Table 7B], but this association was completely eliminated when HIV/AIDS related stigma was included [Table 22]. Finally, orphanhood by other causes was significantly associated ($p < .001$) with more reactive attachment disorder symptoms in the model that controlled for socio-demographic factors, and the association remained significant but weakened ($p < .01$) when HIV/AIDS related stigma was accounted for [Table 22].

Diagram 7: Mediation model for HIV/AIDS-related Stigma and orphanhood by AIDS based on Sobel tests

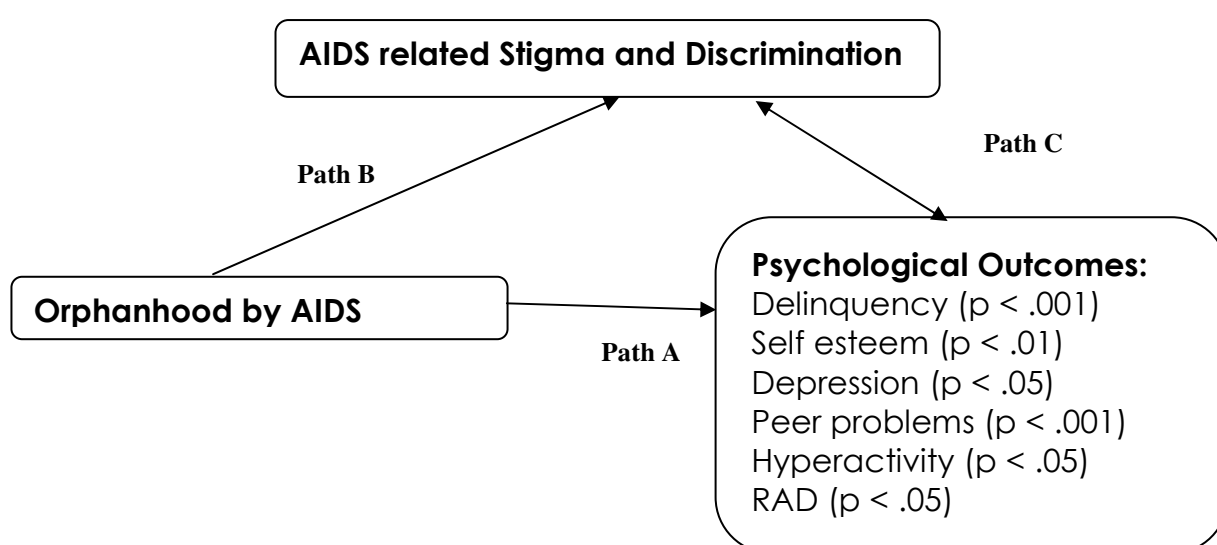


Diagram 8: Mediation model for HIV/AIDS-related Stigma and orphanhood by other causes based on Sobel tests

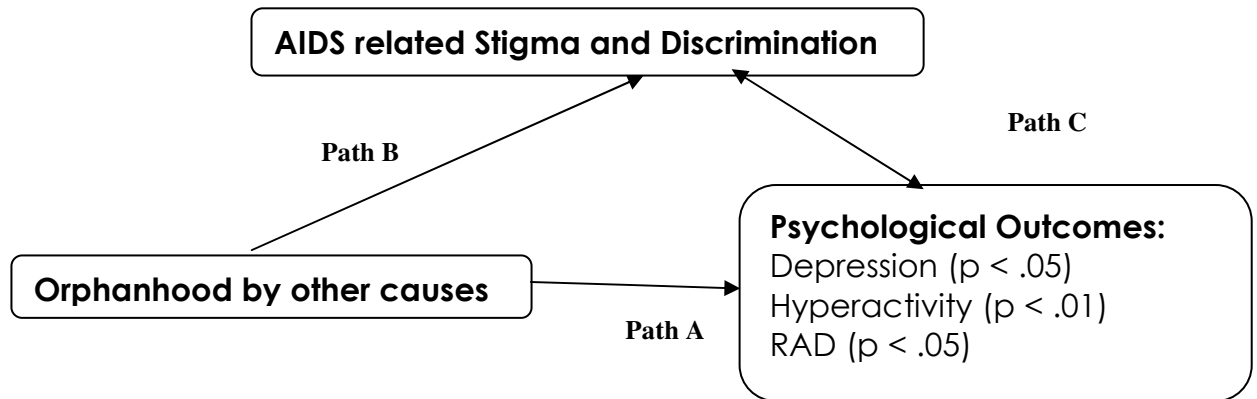
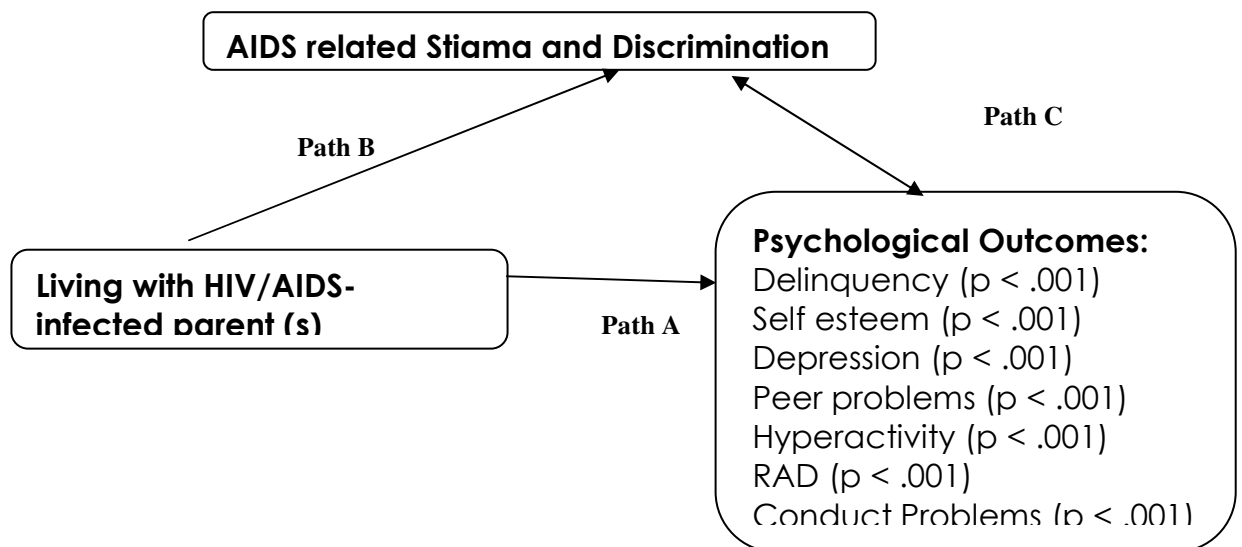


Diagram 9: Mediation model for HIV/AIDS-related Stigma and living with HIV/AIDS-infected parent(s) based on Sobel tests



SUMMARY OF FINDINGS

Psychological Outcomes	Association with being orphaned by AIDS	Association Remaining when HIV/AIDS related Stigma is controlled
Delinquency	Significant	Effect Eliminated
Self-esteem	Significant	Effect Eliminated
Depression	Significant	Effect Remains but Reduced
Conduct Problems	Significant	Effect Remains
Peer Problems	Significant	Effect Eliminated
Hyperactivity	Significant	Effect Remains but Reduced
Reactive Attachment Disorder	Significant	Effect Remains but Reduced
Psychological Outcomes	Association with living with HIV–infected Parent	Association Remaining when HIV/AIDS related Stigma is controlled
Delinquency	Significant	Effect Eliminated
Self-esteem	Significant	Effect Eliminated
Depression	Significant	Effect Eliminated
Conduct Problems	Significant	Effect Eliminated
Peer Problems	Significant	Effect Eliminated
Hyperactivity	Significant	Effect Eliminated
Reactive Attachment Disorder	Significant	Effect Eliminated
Psychological Outcomes	Association with being orphaned by other causes	Association Remaining when HIV/AIDS related Stigma is controlled
Delinquency	No Effect	
Self-esteem	No effect	
Depression	Significant	Effect Remains
Conduct Problems	No Effect	
Peer Problems	No effect	
Hyperactivity	Significant	Effect Remains
Reactive Attachment Disorder	Significant	Effect Remains but Reduced

Findings in the Context of the International Literature

The findings of the present study provide the first quantitative examination of stigma and discrimination among OVC in Ghana where HIV/AIDS is of moderate prevalence (2.1%). It noted that there were significantly high levels (approximately 83%) of perception of stigma, discrimination and social exclusion against HIV/AIDS households among the entire sample of children and carers. Secondly, it also found that both AIDS orphaned children and children living with HIV/AIDS-infected parent experience significantly higher levels of stigma and discrimination compared to other children. The present finding that AIDS orphaned children experience higher levels of stigma than orphaned children of other causes and non-OVC supports prior investigations (Cluver, Gardner & Operario 2009). The current study adds to the existing literature on children affected by HIV/AIDS in that it has demonstrated that the so called parental “HIV/AIDS courtesy stigma” (Cluver 2007 PhD thesis) also affects children living with HIV/AIDS-infected parents. UNICEF 2010 noted that the number of children who are living in families affected by HIV/AIDS will continue to increase. HIV/AIDS is a stigmatizing illness not only for the infected individuals but for all those who are associated with them (Mill 2003). Similar to children orphaned by AIDS, children living with HIV/AIDS-infected individuals experience substantial discrimination and social exclusion. Subsequently, this may impact these children’s access to vital health, psychological, social support and educational services. In the end, it is the health and wellbeing of both children orphaned by AIDS and children living with HIV/AIDS-infected parents that would be compromised.

The levels of stigma (both perceived and experienced) reported in the present study are significantly higher than those reported in prior research in South Africa and other countries with matured HIV/AIDS epidemics. One reason for this could be that HIV/AIDS is a more stigmatizing illness in areas with lower HIV/AIDS prevalence than areas with high HIV/AIDS prevalence such as South Africa, Zimbabwe etc.

The findings of the present study are worrying when the results are compared to studies conducted in China which also has low HIV/AIDS prevalence. The levels of stigma reported in this study are considerably higher than those reported for Chinese children orphaned by AIDS (Zhao et al 2007). Various plausible reasons could account for the striking differences. Firstly in China, HIV transmission occurs primarily through

unhygienic blood/plasma collections, a mean of transmission that has no stigma attached to it (Zhao et al 2007; Ji et al 2007). However, in Ghana, heterosexual intercourse is the main medium of HIV contraction (GAC, 2009). Ayranci (2005) noted that where sex is the main mode of HIV infection, it is widely seen as a consequence of sexual immorality and those who have HIV/AIDS are blamed for the disease. Many in Ghana still view those infected as prostitutes or as promiscuous (Mill 2003). Thus in Ghana, stigma related to sexual immorality due to cultural values against prostitution and promiscuity coupled with the fear of HIV/AIDS may underscore the high HIV/AIDS stigma reported in the present study (Ulasi et al. 2009). Thus the study suggests that HIV/AIDS related stigma varies across regional and cultural contexts, and could be influenced by the prevalence of HIV/AIDS, the epidemic's maturity, mode of HIV infection and the distribution of HIV/AIDS cases. These same factors would, subsequently, impact the effect, extent, nature and consequences of HIV/AIDS related stigma and discrimination (Herek 2002). Thus, while HIV/AIDS remains a societal taboo in most communities (Bunting 2001) and continues to be the number one stigmatised illness of all times (Weitz 1991), the present study, when compared to the international literature, demonstrates that it's effect, level and nature varies across settings.

Contextual Interpretation of Findings and Policy Implications

It was established that AIDS orphaned children and children living with HIV/AIDS-infected parents experience more psychological distress than both other orphans and non-OVC. The present analyses identified that HIV/AIDS related stigma, discrimination and social exclusion strongly mediate the association between orphanhood status and psychological problems.

The analyses indicate that, when controlled for the experience of stigma, the strong associations between children living with HIV/AIDS-infected parents and psychological symptoms of delinquency, hyperactivity, depression, self esteem, peer problems, reactive attachment disorder were eliminated. Among AIDS orphaned children, accounting for HIV/AIDS stigma eliminated associations with psychological outcomes of delinquency, peer problems and self esteem and significantly reduced association with symptoms of depression, hyperactivity and reactive attachment disorders. Similarly, controlling for stigma eliminated significant associations with symptoms of low self-esteem, delinquency and peer problems whilst associations with depression and hyperactivity were retained

among other orphans. These findings provide strong evidence that stigma is an important mediating factor in mental health outcomes for children affected by HIV/AIDS in Ghana.

A policy implication is that intervention programmes that focus on reducing HIV/AIDS related stigma, discrimination and social exclusion may be effective in alleviating or significantly reducing psychological difficulties and symptoms among children affected by the HIV/AIDS pandemic. Concerned NGOs, district assemblies and communities need to develop policies and promote practices that will create an accepting and supportive environment for children and families affected by HIV/AIDS pandemic. The evidence further suggests that such stigma reduction strategies should aim at children before and not after they are orphaned to achieve optimal results in alleviating psychological distress.

Specific limitations

There are some specific limitations of this study/analysis. First, the data suffers from reporting bias since it was based on participants' subjective reports. However, this was mitigated by collecting data from both children and carers. Second, the samples in the present study might not be representative of all OVC in other areas of Ghana. Finally, Cluver, Gardner & Operario (2008) suggested that assessing stigma among children could suffer risks of method overlap where more depressed, traumatised and delinquent children may feel more isolated, and hence perceive more stigma than other children: in other words perception of stigma and discrimination may be influenced by psychological difficulties. If this was the case, one would expect that compared with OVC, comparison children (non-OVC) should report both lower perception and lower experience of stigma. There was lack of evidence for this relationship. Conversely, in the present study all the children expressed very high perception of the existence of HIV/AIDS related stigma (83%) but only children affected by HIV/AIDS reported elevated levels of experiencing HIV/AIDS related stigma and discrimination (other orphans and non-OVC did not). This suggests that children's poor mental health status did not bias their report of HIV/AIDS related stigma.

CHAPTER EIGHT – SOCIAL SUPPORT AND MENT HEALTH

Question 4: What family and community level variables (Social Support) are mediating any differences in mental health problems experienced by the different groups of children?

- 4a) Do children orphaned by AIDS receive/perceive lower levels of social support compared to other children?
- 4b) Does perceived social support mediate differences in mental health problems among OVC?

8.1 Differences between OVC groups on Perceived Social Support (PSS) [Table 24]

Overall levels of total perceived social support were high among the sample, and showed significant group differences [$F(3, 287) = 53.688, p < .001$]. A follow up post hoc multiple comparison indicate that the level of perceived social support was highest among the non-OVC, lowest in the children living with HIV/AIDS-infected parents, and both AIDS orphaned children and those children orphaned by other causes were in the middle.

Concerning the subscales of the perceived social support scale, there were no statistical significant differences in support from friends [$F(3, 287) = 1.406, p = n. s.$] and support from others [$F(3, 287) = 1.964, p = n. s.$] among the four orphanhood groups. However, at significance level of $p = .05$, it was found that AIDS orphaned children have lower perceived social support from significant others than non-OVC ($0.626, p = .049$).

Examining the family subscale of the PSS scale, significant group differences were observed in a one-way ANOVA analysis. Post hoc comparison revealed that non-OVC comparison children reported higher levels of support from family than children orphaned by AIDS ($t = 4.638, p < .001$), who also reported higher social support from friends than both children orphaned by other causes ($t = 0.972, p < .01$) and those living with HIV/AIDS-infected parents ($t = 0.922, p < .01$).

8.2 Association between Perceived Social Support and Psychological Outcomes

[Table 25]

The psychosocial adjustments were correlated across the PSS scale and its subscales using the Pearson r . All the psychosocial outcomes except prosocial behaviours were significantly correlated with total perceived social support, with higher levels of perceived social support associated with lower levels of psychosocial distress. More precisely, children who reported higher levels of social support show less symptoms of delinquency, depression, peer problems, conduct problems, reactive attachment disorders, hyperactivity, and a higher level of self-esteem. Similar observations were found on the family subscale of the PSS.

However, support from the friends and significant other subscales showed a different pattern, where higher scores on the subscales were only associated with lower symptoms of delinquency and peer problems, and higher self-esteem.

Older age was found to be associated with lower perceived social support ($r = -.228$, $p < .001$). There was no difference observed according to gender ($t = 0.605$, $p = n. s.$). Lower perceived social support was also associated with living in smaller households ($r = .206$, $p < .001$), having more siblings ($r = -.228$, $p < .001$) and not currently attending school ($t = 2.100$, $p < .05$).

8.3 Mediating effects of Perceived Social Support on associations between orphanhood and mental health outcomes [Tables 26 & 27]

Delinquency

When controlling for age, household size and number of changes in residence in an adjusted model, orphanhood by AIDS and living with an HIV/AIDS-infected parent were each significantly associated ($p < .01$) with greater delinquency problems [Table 6B]. These associations were completely eliminated when perceived social support was accounted for in a subsequent regression model [Table 26]. Orphanhood by other causes was not associated with delinquency problems in either the model that controlled for only socio-demographic factors or the adjusted model that accounted for both socio-demographic factors and perceived social support [Tables 6B and 26].

Self esteem

In a regression analysis, orphanhood by AIDS was associated ($p < .01$) with lower self esteem after adjusting for age, household size and number of changes in residence [Table 6B] but this association was eliminated when perceived social support was included [Table 26]. However, orphanhood by other causes was not associated with self esteem in either the unadjusted model or the adjusted model that controlled for perceived social support [Tables 6B & 26]. Finally, living with an HIV/AIDS-infected parent was associated ($p < .01$) with lower self-esteem in the model that controlled for only socio-demographic factors, but this association was eliminated in a subsequent model after controlling for perceived social support and relevant socio-demographic cofactors [Table 26].

Conduct Problems

Controlling for age, household size, number of changes in residence and number of children at home, AIDS orphanhood was not associated with children's self-reports of conduct problems [Table 6B], and there was still no association when perceived social support was included [Table 26]. Similarly, orphanhood by other causes and living with an HIV/AIDS-infected parent were not also associated with conduct problems in either the model that controlled for only socio-demographic factors [Table 6B] or the one that also accounted for both perceived social support and socio-demographic factors [Table 26].

Peer Problems

Controlling for age, household size, number of changes in residence and number of children at home in regression models [Table 6B], children's self-reports indicate that orphanhood by AIDS was significantly associated with more peer problems, and this relationship remained but was weakened after controlling for perceived social support [Table 26]. Orphanhood by other causes was not associated with peer problems in either the model that controlled for only socio-demographic factors [Table 6B] or the model that accounted for socio-demographic factors and perceived social support [Table 26]. Living with an HIV/AIDS-infected parent was associated with more peer problems in the model that controlled for socio-demographic factors [Table 6B] but this association was eliminated when perceived social support was included in the adjusted model [Table 26].

Depression

In Regression analysis, living with HIV/AIDS-infected parents was significantly associated with more symptoms of depression in the model [Table 6B] that controlled for socio-demographic factors but this association was completely eliminated in the model that

controlled for both socio-demographic factors and experience of perceived social support [Table 26]. Orphanhood by AIDS was also significantly associated with more depression in the model that controlled for only socio-demographic factors [Table 6B], and this association remained significant but was reduced in the model that accounted for socio-demographic factors and perceived social support [Table 26]. Finally, children's self-reports indicated that orphanhood by other causes was significantly associated with more symptoms of depression in a regression model that controlled for socio-demographic factors [Table 6B], and this association remained after controlling for perceived social support [Table 26].

Hyperactivity

When controlling for age, household size, number of changes in residence and number of children at home, children's self-reported scores indicate that orphanhood by AIDS was significantly associated with more hyperactivity [Table 6B], and this remained but was reduced in an adjusted model that controlled for perceived social support [Table 26]. Living with an HIV/AIDS-infected parent was associated with more hyperactivity in a model that controlled for only socio-demographic factors [Table 6B] but this association was completely eliminated when perceived social support was also accounted for in an adjusted model [Table 26]. Furthermore, orphanhood by other causes was associated with more hyperactivity in the model that controlled for only socio-demographic factors [Table 6B], but this association was completely eliminated when perceived social support was included [Table 26].

Total Difficulties

Regression analyses of children's self-reports indicates that orphanhood by AIDS, orphanhood by other causes and living with HIV/AIDS-infected parents were all, independently significantly associated with more psychological difficulties in a model that controlled for age, household size, number of changes in residence and number of siblings at home [Table 6B]. When perceived social support was accounted for in subsequent models, the significant associations between orphanhood types and more SDQ total psychological difficulties as reported by the children were completely eliminated for living with HIV/AIDS-infected parent and orphanhood by other causes but remained significant for orphanhood by AIDS [Table 26].

Total Impact

Orphanhood by AIDS, orphanhood by other causes, and living with an HIV/AIDS-infected parent were all individually not associated with self reported total impact burden in either the model that controlled for only socio-demographic factors [Tables 6B & 7B] or the one that controlled for both socio-demographic factors and perceived social support [Tables 25 & 26].

Prosocial Behaviours

There were no significant differences between the groups on self-reported prosocial and helping out behaviours in a GLM analysis that controlled for both perceived social support and socio-demographic factors. Children's self-reports indicated that there were no associations found between orphanhood by AIDS, orphanhood by other causes and living with an HIV/AIDS-infected parent with helping out behaviours in either the models that controlled for only socio-demographic factors [Table 6B & 7B] or the models that controlled for perceived social support and socio-demographic factors [Table 26].

Reactive Attachment Disorder Symptoms

Orphanhood by AIDS was associated ($p < .001$) with more reactive attachment disorder symptoms in a regression model that controlled for age, household size, number of changes in residence and present educational status of children [Table 7B]. When perceived social support was included, the association remained significant but was weakened [Table 27]. Living with an HIV/AIDS-infected parent was also significantly associated with more reactive attachment disorder symptoms in a model that controlled for only socio-demographic factors [Table 7B], but this association was completely eliminated when perceived social support was included [Table 27]. Finally, orphanhood by other causes was significantly associated ($p < .001$) with more reactive attachment disorders in the model that controlled for socio-demographic factors, but the association was completely eliminated when perceived social support was accounted for [Table 27].

Table 24: Young people's self-report: Group differences on Social Support

Source	Comparison group of children (n = 100) [1]	Orphaned and vulnerable children			F
		AIDS-orphaned children(n = 74) [2]	Other-orphans (n = 67) [3]	Children with HIV/AIDS- infected parents (n = 50) [4]	
PSS Scale (Total Support)	38.18 (4.71)	33.00 (3.24)	32.15 (3.45)	31.26 (3.29)	53.685 ^c
FAMILY	12.76 (2.31)	8.12 (1.78)	7.15 (1.73)	7.20 (1.67)	160.226 ^c
FRIENDS	12.78 (2.47)	12.86 (2.18)	12.46 (2.52)	12.06 (2.39)	1.406
OTHER	12.64 (2.18)	12.01 (1.81)	12.54 (1.93)	12.00 (2.37)	1.964

^c Denotes significance at the .001 level

Table 25: Associations between perceived social support and psychological outcomes¹

Source	PSS SCALE	FRIENDS	FAMILY	OTHER
Delinquency	-.317 ^c	-.153 ^b	-.277 ^c	-.133 ^a
Self Esteem	-.345 ^c	-.164 ^b	-.309 ^c	-.135 ^a
SDQ Scale:				
Total Difficulties	-.378 ^c	-.066	-.488 ^c	-.052
Emotional problems	-.338 ^c	-.021	-.472 ^c	-.034
Conduct problems	-.152 ^b	-.013	-.225 ^c	.007
Peer Problems	-.385 ^c	-.140 ^a	-.383 ^c	-.142 ^a
Hyperactivity	-.125 ^a	.021	-.246 ^c	.062
Prosocial behaviours	-.015	.081	-.044	.012
Impact	-.217 ^c	.029	-.291 ^c	-.089
RAD				
RAD	-.316 ^c	-.066	-.434 ^c	-.014
Inhibited Problems	-.193 ^b	-.036	-.264 ^c	.002
Disinhibited Problems	-.331 ^c	-.072	-.457 ^c	.022

^a Denotes significance at the 0.05 level, ^b denotes significance at the 0.01 level, ^c denotes significance at the .001 level

Table 26: (MODEL 2): Children self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors and social support

Source	Delinquency ¹	Self esteem ¹	Total difficulties ³	Emotional problems ²	Conduct problems ³	Peer problems ³	Hyperactivity ³	Total impact ¹	Prosocial behaviour ⁴
Orphaned by AIDS	.113	.103	.296 ^c	.172 ^b	.006	.140 ^a	.190 ^b	.022	.038
Orphaned by other causes	-.070	.004	.158 ^b	.171 ^b	-.022	-.047	.085	.044	.014
Living with HIV/AIDS infected parent	.038	.061	-.047	-.065	-.005	.063	-.071	-.047	-.020
R-Square	.188	.217	.792	.430	.533	.579	.228	.347	.056
R ² Change	.031	.032	.006	.009	.001	.024	.004	.004	.003
Adjusted R	.174	.203	.788	.414	.523	.570	.212	.335	.046
F - Change	10.964 ^c	11.523 ^c	7.698 ^c	4.453 ^a	0.198	15.988 ^c	1.411	1.564	0.813

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

Table 27 (Informants Reports): Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, controlling for relevant socio-demographic cofactors and Perceived Social Support

Source	RAD ⁵	Total Difficulties ³	Emotional problems ²	Conduct problems ³	Peer problems ³	Hyperactivity ³
Orphaned by AIDS	.165 ^b	.193 ^c	.096	.198 ^c	.096	.080
Orphaned by other causes	.109	.128 ^a	.113	.032	.134 ^b	.015
Living with HIV/AIDS infected parent	-.061	.123 ^a	.137 ^a	.075	.117 ^a	.012
R-Square	.264	.373	.287	.167	.189	.054
R ² Change	.015	.002	.003	.001	.005	.001
Adjusted R	.243	.354	.267	.149	.172	.034
F – Change	5.783 ^a	0.877	1.132	0.022	1.691	0.068

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

⁵Adjusted model controls for age, household size, no. of changes in residence, presently in school.

SUMMARY OF FINDINGS

Psychological Outcomes	Association of being orphaned by AIDS	Association remaining when Perceived Social Support is controlled
Delinquency	Significant	Effect Eliminated
Self-esteem	Significant	Effect Eliminated
Depression	Significant	Effect Remains but Reduced
Conduct Problems	Significant	Effect Remains
Peer Problems	Significant	Effect Eliminated
Hyperactivity	Significant	Effect Remains
Reactive Attachment Disorder	Significant	Effect Remains but Reduced
Psychological Outcomes	Association of Living with HIV-infected Parent	Association remaining when Perceived Social Support is controlled
Delinquency	Significant	Effect Eliminated
Self-esteem	Significant	Effect Eliminated
Depression	Significant	Effect Eliminated
Conduct Problems	Significant	Effect Eliminated
Peer Problems	Significant	Effect Eliminated
Hyperactivity	Significant	Effect Eliminated
Reactive Attachment Disorder	Significant	Effect Eliminated
Psychological Outcomes	Association of being orphaned by other causes	Association remaining when Perceived Social Support is controlled
Delinquency	No Effect	
Self-esteem	No effect	
Depression	Significant	Remains but Reduced
Conduct Problems	No Effect	
Peer Problems	No effect	
Hyperactivity	Significant	Effect Eliminated
Reactive Attachment Disorder	Significant	Effect Eliminated

Earlier findings from the present study indicate that children affected by AIDS are vulnerable to adverse mental health outcomes and represent an underserved population. In order to design an effective response, it is crucial to understand which resilience variables are most protective for adverse health outcomes among these children. The present analyses examine the possibility of perceived social support functioning as a resilience factor that could offer psychological protection to children affected by HIV/AIDS. Connor & Zhang (2006) suggested that understanding perceived social support (PSS) as a contextual resilience factor would be important in developing appropriate interventions for OVC to alleviate identified psychological distress whose risk factors may have high individual and cultural variability.

In the present study higher levels of total perceived social support showed significant associations with lower psychological difficulties and higher self esteem among the children suggesting that children's PSS could be a crucial predictor for their psychological health. This echoes a recent study conducted in China (Hong et al., 2010) in which PSS was positively associated with the psychological wellbeing of children affected by HIV.

The present analyses also found significant differences between the orphanhood groups on perceived social support from the family but not from friends and significant others. Concerning support from the family, children living with HIV/AIDS-infected parents and other orphans reported the least perceived social support. Comparison children reported higher perceived social support from the family than children orphaned by AIDS. That is, whilst the family may be the main source of emotional support for comparison children that may not be the case for children affected by HIV/AIDS. Our findings suggest a weakening of the traditional support system provided by families where households are affected by HIV/AIDS in the Manya Krobo district. The fact that children affected by HIV/AIDS reported high household sizes yet lower social support from the family suggests that the family members are there but are simply not supportive rather than a notion of a diminished family in the presence of HIV/AIDS.

It is particularly interesting that children living with HIV/AIDS-infected parents reported lower perceived social support than children orphaned by AIDS. Several factors could account for this situation. First, it might be that parents-infected with HIV/AIDS are preoccupied with their own situation (HIV/AIDS infection and attendance stress) to the

extent that it compromises their ability to provide quality child care, yet other support systems have not come into play because the parents are still alive and in a care-giving role. Okawa et al. (2011) suggested that when a parent is infected with HIV/AIDS, it becomes difficult for him/her to provide adequate care for children. Similarly, as infected parents progress with the HIV/AIDS in severity, they may become too ill to be available for support. The present study did not capture ART among infected parents but it will be interesting to have future research comparing those not receiving ART with those receiving ART which would control for HIV in the family but compare well versus ill parents.

Second, when a parent is infected with HIV/AIDS, other family members may shift the available support to the sick parent to the detriment of the child, thus further limiting the support available to the child. Third, it is also possible that most children when orphaned by AIDS are well cared for by the surviving parent, extended family or others, whereas in the case of children living with HIV/AIDS-infected parents, parental sickness more severely reduces and limits the availability and quality of support for children (Kidman et al 2010). Fourthly, living with HIV/AIDS-infected parents' places care responsibilities on children and this may affect their social support network. Thus, children living with HIV/AIDS-infected parents may assume care-giving responsibilities for their parents and young siblings, restricting their opportunity to find support from elsewhere (e.g. school). This might not be the case with AIDS orphaned children (Bauman et al 2006). Fifth, in Ghana, the limited existing interventions from the government and non-governmental organisations for children affected by HIV/AIDS exclude children living with HIV/AIDS-infected parents. Just as in many other countries affected by the HIV/AIDS pandemic, AIDS orphanhood is often the primary criterion used by organisations for eligibility for HIV/AIDS interventions for children. This could account for the finding that children orphaned by AIDS reported higher perceived social support than those living with HIV/AIDS-infected parents. Finally, as reported earlier, children living with HIV/AIDS-infected parents experience more stigma, discrimination and social exclusion than other children – even those whose parents have died from AIDS. This could limit their available social network and affect their ability to seek and receive support from their family, friends and the community at large. Supporting this speculation, a recent study in China showed that high levels of AIDS related stigma were related to lower perceived social support (Hong et al 2010). Fang et al (2009) also suggested that stigma associated with poverty and HIV/AIDS often impacts on one's available social support network.

Certain socio-demographic factors showed significant associations with perceived social support that may be important in developing developmentally and contextually appropriate interventions that would enhance social support among children affected by HIV/AIDS.

First, currently attending school is a significant predictor of higher perceived social support from friends and significant others. This indicates that keeping children in school may offer them an opportunity to generate a larger social network that might enhance their social support and emotional wellbeing. This is consistent with Wood, Chase & Aggleton's (2006) observation in Uganda that schools provide OVC with comfort and relief from distress and grief as they spend quality time with school mates and responsible teachers. Okawa et al (2011) also noted in urban Kenya that when parents have the funds to keep children affected by AIDS in school, the parents are not only paying for formal education but for the children's emotional care too. Clearly, educational institutions and opportunities are important avenues to promote the social support network of children as they offer normality and stability for OVC (Richter 2003). In Rwanda, Brown et al. (2007) demonstrated how youth mentorship conducted in schools enhanced community connectedness and social protection. The school offers a place where teachers can be mobilised and empowered to identify children affected by HIV/AIDS and offer or recommend specific psychological interventions in addition to more traditional social support.

Second, larger household size was associated with higher perceived social support. Thus living in families with larger numbers of adults seems to enhance children's perception of social support. This suggests that children affected by HIV/AIDS would receive better emotional care if they are placed in households with more adult members or relatives. Perhaps adult relatives would contribute their support, however little, to provide care and comfort. This suggests that adult family members and relatives are the closest people who could understand the psychological difficulties children affected by HIV/AIDS experience and may provide opportunities for them to connect with other relevant support networks.

Third, in the present study, living with many siblings in the same households was related to lower perceived social support. Okawa et al (2011) found that living with siblings enhances perceived social support and advocated for siblings affected by AIDS to be placed together; Gong et al (2009) indicated that children orphaned by AIDS are worse off as regards mental health when they are separated from their siblings. The present findings, however, suggest that whilst siblings may provide vital means of social network and

connection, it may not be beneficial if several siblings are placed together. One reason could be that living with many siblings places care responsibilities on each other and this may affect their social support network. It is therefore suggested that large siblings should not be placed together during HIV/AIDS parental illness or after parental death.

Finally, increased age was significantly associated with lower perceived social support. A speculative reason for this association may be that older children affected by HIV/AIDS assume the responsibilities of providing care and support for young siblings in ways that may affect the quality of support that they themselves receive (Bauman et al 2006, Robson et al 2006) and are less likely to be in school.

Thus the significant differences and associations of perceived social support across age, orphanhood types, household size, number of sibling and children's present educational status call for developmentally appropriate and context specific interventions for effective enhancement of social support.

Diagram 10: Mediation model for Social Support-related factors and orphanhood by AIDS based on Sobel tests

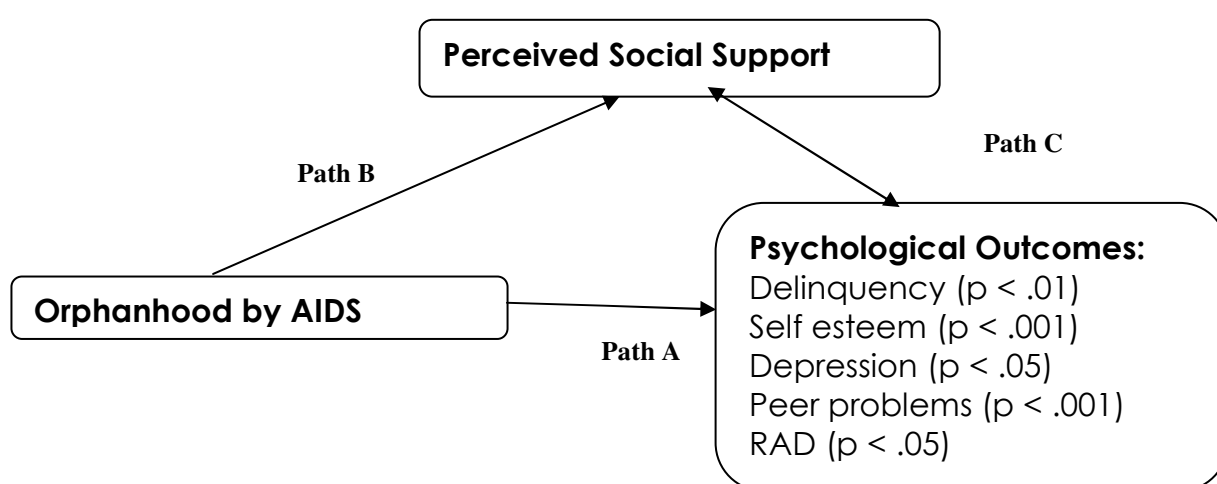


Diagram 11: Mediation model for Social Support-related factors and orphanhood by other causes based on Sobel tests

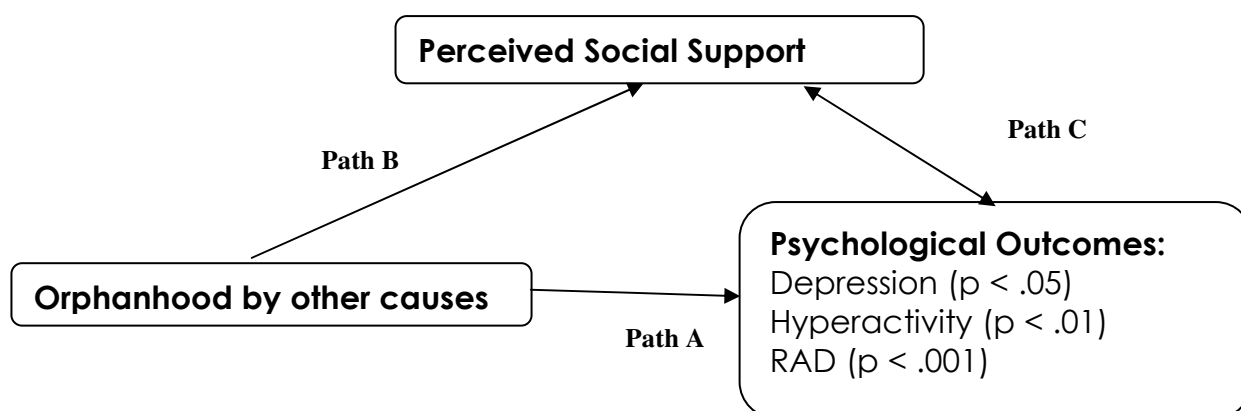
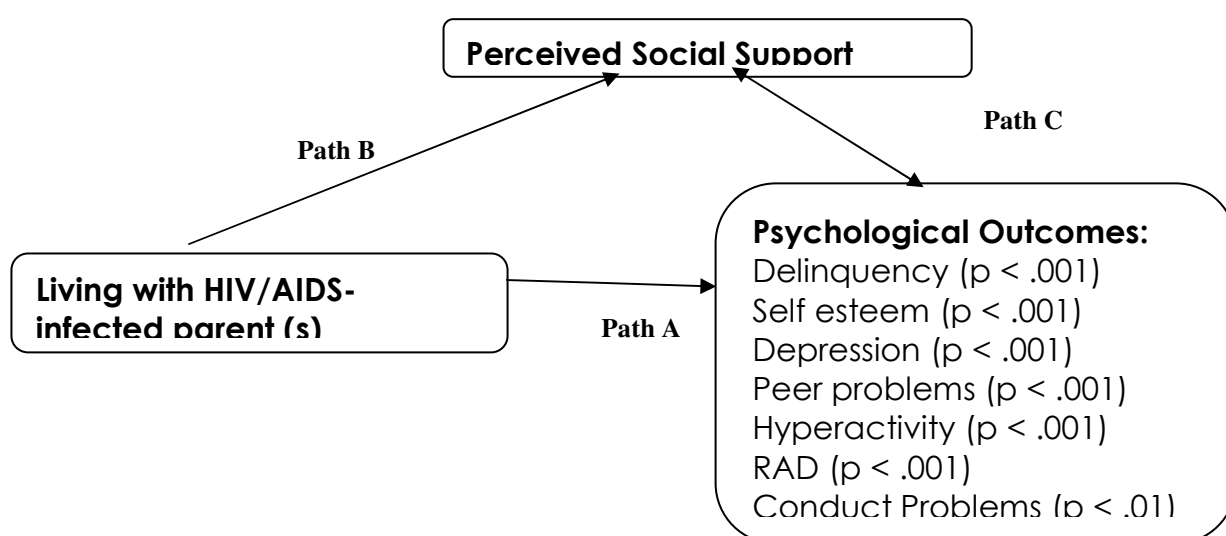


Diagram 12: Mediation model for Social Support-related factors and living with HIV/AIDS-infected parent(s) based on Sobel tests



Contextual Interpretation of Findings and Policy Implications

It was established that AIDS orphaned children and children living with HIV/AIDS-infected parents experience more psychological distress than both other orphans and non-OVC. The present analyses identified that children living with HIV/AIDS-infected parents

and other orphans reported lower perceived social support than other children, and that perceived social support strongly mediates orphanhood status and the experience of psychological distress.

The analyses indicate that controlling for perceived social support eliminated the strong associations between children living with HIV/AIDS-infected parents and psychological symptoms of delinquency, hyperactivity, depression, low self esteem, peer problems, reactive attachment disorder symptoms. Among children orphaned by AIDS, controlling for perceived social support eliminated psychological outcomes of delinquency and low self esteem, and significantly reduced symptoms of depression, peer problems, hyperactivity and reactive attachment disorder symptoms. Similarly, controlling for perceived social support eliminated symptoms of low self-esteem, delinquency, peer problems, hyperactivity, depression and reactive attachment disorder symptoms among children orphaned by causes other than AIDS. These findings provide strong evidence that social support is an important mediating factor in mental health outcomes for orphaned and vulnerable children affected by HIV/AIDS in Ghana. Of all resilience factors, Greenwood et al. (1996) claimed that social support has the greatest impact on psychological health. Whilst the pathways may not be clearly known, some suggest that social support functions as a protector and buffer to reduce distress (Decker 2007) and may enhance coping skills during stressful situations (Allgower et al 2001). Uchino (2006) even noted that among the general population, social support may boost immune-mediated process and can reduce morbidity and mortality.

The policy implication is that intervention programmes that focus on enhancing social support may be effective in alleviating psychological difficulties and symptoms among children affected by the HIV/AIDS pandemic. Concerned NGOs, district assemblies and the communities need to develop contextually and developmentally appropriate policies and promote practices that will empower the community to provide supportive environments for children and families affected by the HIV/AIDS pandemic. The evidence further suggests that such social network enhancement should aim at children before they are orphaned (and should be continued after orphanhood too) to achieve optimal results of eliminating psychological distress.

In conclusion, the present analyses demonstrated that among OVC, social support could explain psychological distress above and beyond the impact of AIDS orphanhood per se. The analyses also identified groups of children who may be most at risk for receiving little

support. The data suggests that older children who are not presently attending school and made orphaned by causes other than AIDS or are living with HIV/AIDS-infected parents, with more siblings in small households experience the least social support. More support should be provided to other orphans as well as to children living with HIV/AIDS-infected parents. Such social support enhancement intervention programs need to take into consideration age, educational status, sibling size and household size in order to provide situation specific and appropriate support to children.

Limitations

The current analysis presents several potential limitations. First, the relationship between psychosocial adjustment and perceived social support was based on cross-sectional data, which limits the causal interpretation of the findings. Longitudinal data research is needed to understand their relationship better. Second, this is the first time that the perceived social support scale (MPSS) is used in Ghana. It was not previously validated for sound psychometric properties and had relatively low reliability estimates in the current study. Furthermore, the scale could not distinguish between availability (quantity) and quality of social support. Future studies are needed to develop reliable measures of social support that are culturally and developmentally appropriate for children affected HIV/AIDS, and can assess both quantity and quality of social support available.

CHAPTER NINE – CHILD MALTREATMENT AND MENTAL HEALTH

Question 5: What family and community level variables (Domestic Violence and Child Maltreatment) are mediating any differences in mental health problems experienced by the different groups of children?

- 5a) Do children orphaned by AIDS suffer more domestic violence and maltreatment compared to other children?
- 5b) Do domestic violence and maltreatment mediate differences in mental health problems among OVC?

9.1 Differences between OVC groups on Domestic Violence and Maltreatment

ANOVA analysis indicates a significant group difference between the orphanhood groups on domestic violence [$F(3, 287) = 15.585, p < .001$]. A subsequent bonferroni-adjusted multiple comparison showed that children living with HIV/AIDS-infected parents reported more adult fighting and quarrelling in the home than both other orphan groups ($t = 0.886, p < .01$) and comparison children ($t = 1.320, p < .001$). Children orphaned by AIDS on the other hand also reported significantly more domestic violence than other orphaned children ($t = 0.698, p < .01$) and comparison children ($t = 1.132, p < .001$). No further group differences were found.

Reported levels of child maltreatment were high among the children and showed a significant between group effect [$F(3, 287) = 35.998, p < .001$]. Children living with HIV/AIDS-infected parents ($t = 3.650, p < .001$), children orphaned by AIDS ($t = 3.304, p < .001$) and orphans of other causes ($t = 2.750, p < .001$) all reported significantly more maltreatment than comparison children. The Psychological abuse subscale of the maltreatment scale exhibited the same pattern, where OVC scored higher than comparison children [$F(3, 287) = 47.019, p < .001$]. However, only children orphaned by AIDS ($t = 0.970, p < .001$) and children living with HIV/AIDS-infected parents ($t = 0.718, p < .01$) reported significantly higher levels of neglect compared with comparison children. Finally, only AIDS orphaned children reported significantly higher physical abuse compared with comparison children ($t = 0.761, p < .01$).

The inter-informant correlations for the domestic violence and maltreatment scores in the present sample were low, ranging from .011 to .191 [Table 29]. Correlations between children's self-reports and caregivers' accounts on total maltreatment, neglect, and psychological abuse were significant at alpha levels of $p < .001$, $p < .01$ and $p < .05$ respectively. Correlations on physical abuse and domestic violence of burden between self-report and informants did not reach significant levels.

Interestingly, in the present analyses caregivers and parents of children (informants) reported significantly higher levels of total maltreatment ($t = 13.036$, $p = .001$), psychological abuse ($t = 27.119$, $p = .001$) and physical abuse ($t = 8.914$, $p = .001$) compared with reports from young people themselves [Table 29]. However, the children reported more domestic violence ($t = 11.046$, $p = .001$) and neglect ($t = 4.054$, $p < .001$) than their informants.

9.2 Association between the Psychological Outcomes, and Domestic Violence and Maltreatment

Higher levels of domestic violence was significantly associated with higher scores on symptoms of delinquency, depression, conduct problems, peer problems and reactive attachment disorders, and lower scores on self esteem and prosocial behaviours [Table 30]. There was no significant relationship between domestic violence and hyperactivity. Similarly, higher reported levels of maltreatment were related to more symptoms of delinquency, depression, conduct problems, peer problems, hyperactivity and reactive attachment disorders, and lower scores on self esteem [Table 30]. Child maltreatment was not significantly related to prosocial behaviours. The subscales of maltreatment (Neglect, Physical Abuse and Psychological Abuse) exhibited a similar pattern as the reported total maltreatment scores except that the relationship between child physical abuse and reactive attachment disorder symptoms as well as the associations between neglect and delinquency and conduct symptoms were not significant [Table 30].

Concerning socio-demographic cofactors, higher child maltreatment was associated with living in smaller households ($r = -.255$, $p < .001$), having more siblings ($r = .211$, $p < .001$), frequent changes in place of residence ($r = .138$, $p < .05$) and currently not attending school ($t = 3.302$, $p < .001$). Increased age was found to be associated with more maltreatment ($r = .431$, $p < .001$). There was no difference observed on gender ($t = 0.198$, $p = n. s.$).

Table 28: Young people's self-report: Orphanhood or Groups differences on Domestic Violence and Maltreatment

Source	Comparison group of children (n = 100) [1]	Orphaned and vulnerable children			F
		AIDS-orphaned children(n = 74) [2]	Other-orphans (n = 67) [3]	Children with HIV/AIDS- infected parents (n = 50) [4]	
Domestic Violence (M, SD)	2.76 (1.27)	3.89 (1.42)	3.19 (1.44)	4.08 (1.24)	15.585 ^c
Total Maltreatment/Abuse (M, SD):	8.25 (2.52)	11.55 (2.66)	11.00 (2.46)	11.90 (2.50)	35.998 ^c
Neglect (M, SD)	3.85 (1.49)	4.57 (1.79)	4.22 (1.60)	4.82 (1.71)	4.920 ^b
Physical Abuse (M, SD)	2.32 (1.66)	3.08 (1.55)	2.63 (1.58)	2.80 (1.74)	3.242 ^a
Psychological Abuse (M, SD)	2.08 (1.30)	3.91 (1.410)	4.15 (1.45)	4.28 (1.42)	47.019 ^c

^a Denotes significance at the 0.05 level, ^b denotes significance at the 0.01 level, ^c denotes significance at the .001 level

Table 29: Comparisons of Scale scores across respondents using Paired Sample Statistics (n = 286)

Source	Children self report	Informant report	T	sig.	Inter-informant correlation r	sig.
Domestic Violence						
Mean	3.37	2.10	11.046	.001	.066	n. s.
SD	1.45	1.40				
Neglect						
Mean	4.29	3.69	4.054	.001	.140	.01
SD	1.66	2.04				
Psychological Abuse						
Mean	3.40	8.31	-27.119	.001	.121	.05
SD	1.68	2.80				
Physical Abuse						
Mean	2.67	12.14	-8.914	.001	.011	n. s.
SD	1.65	4.75				
Total Maltreatment						
Mean	10.35	24.14	-13.036	.001	.191	.001
SD	2.96	6.96				

Table 30: Bivariate Pearson r Associations between Domestic Violence and Maltreatment, and psychological outcomes¹

Source	Domestic Violence	Total Maltreatment	Neglect	Physical Abuse	Psychological Abuse
Delinquency	.432 ^c	.188 ^c	-.001	.114 ^a	.220 ^c
Self Esteem	.315 ^c	.245 ^c	.194 ^c	.126 ^a	.117 ^a
SDQ Scale:					
Total Difficulties	.373 ^c	.532 ^c	.221 ^c	.216 ^c	.509 ^c
Emotional problems	.256 ^c	.368 ^c	.120 ^a	.123 ^a	.409 ^c
Conduct problems	.345 ^c	.297 ^c	.073	.266 ^c	.191 ^c
Peer Problems	.423 ^c	.402 ^c	.231 ^c	.074	.407 ^c
Hyperactivity	-.031	.420 ^c	.171 ^b	.186 ^c	.389 ^c
Prosocial behaviours	-.167 ^b	.011	-.012	.125 ^a	-.092
Impact	.124 ^a	.261 ^c	.115 ^a	.064	.285 ^c
RAD Total	.226 ^c	.287 ^c	.175 ^b	.091	.243 ^c
RAD: Inhibited Problems	.137 ^a	.198 ^c	.135 ^a	.093	.124 ^a
RAD: Disinhibited Problems	.238 ^c	.283 ^c	.161 ^b	.066	.283 ^c

^a Denotes significance at the 0.05 level, ^b denotes significance at the 0.01 level, ^c denotes significance at the .001 level

9.3 Mediating effects of domestic violence and child maltreatment on associations between orphanhood types and mental health outcomes (Table 31 & 32)

Delinquency

When controlling for age, household size and number of changes in residence in an adjusted model, orphanhood by AIDS and living with an HIV/AIDS-infected parent were each significantly associated ($p < .01$) with higher delinquency problems [Table 6B].

These associations were completely eliminated when domestic violence and maltreatment were accounted for in a subsequent regression model [Table 31]. Orphanhood by other causes was not associated with delinquency problems in either the model that controlled for only socio-demographic factors or the adjusted model that accounted for both socio-demographic factors and domestic violence and maltreatment [Tables 6B and 31].

Self esteem

Orphanhood by AIDS was associated ($p < .01$) with lower self esteem after adjusting for age, household size and number of changes in residence [Table 6B] but this association was eliminated when domestic violence and maltreatment were included [Table 31].

However, orphanhood by other causes was not associated with self esteem in either the unadjusted model and adjusted model that controlled for domestic violence and maltreatment [Tables 6B & 31]. Finally, living with an HIV/AIDS-infected parent was associated ($p < .01$) with lower self-esteem in the model that controlled for only socio-demographic factors, but this association was eliminated in a subsequent model after controlling for domestic violence and maltreatment, and relevant socio-demographic cofactors [Table 31].

SDQ Difficulties

Regression analyses of children's self-reports indicated that orphanhood by AIDS, orphanhood by other causes and living with HIV/AIDS-infected parents were all, independently, significantly associated with more psychological difficulties in a model that controlled for age, household size, number of changes in residence and number of siblings at home [Table 6B]. When domestic violence and maltreatment were accounted for in subsequent models, the significant associations between orphanhood types and more SDQ total psychological difficulties as reported by the children were completely eliminated for living with HIV/AIDS-infected parent but remained significant for orphanhood by AIDS ($p < .001$) and orphanhood by other causes ($p < .05$) [Table 31].

Depression

In regression analyses, living with an HIV/AIDS-infected parent was significantly associated with more symptoms of depression in the model [Table 6B] that controlled for socio-demographic factors but this association was completely eliminated in the model that controlled for both socio-demographic factors and domestic violence and maltreatment [Table 31]. Orphanhood by AIDS was also significantly associated ($p < .001$) with more depression in the model that controlled for only socio-demographic factors [Table 6B], and this association remained significant but reduced ($p < .01$) in the model that accounted for socio-demographic factors and domestic violence and maltreatment [Table 31]. Finally, children's self-reports indicate that orphanhood by other causes was significantly associated with more symptoms of depression in a regression model that controlled for socio-demographic factors [Table 6B], and this association remained after controlling for domestic violence and maltreatment [Table 31].

Conduct Problems

Controlling for age, household size, number of changes in residence and number of children at home, AIDS orphanhood was not associated with children's self-reports of conduct problems [Table 6B], and there was still no association when domestic violence and maltreatment was included [Table 31]. Similarly, orphanhood by other causes and living with an HIV/AIDS-infected parent were not associated with conduct problems in either the model that controlled for only socio-demographic factors [Table 6B] or the one that also accounted for both domestic violence and maltreatment and socio-demographic factors [Table 31].

Peer Problems

Controlling for age, household size, number of changes in residence and number of children at home in regression models [Table 6B], children's self-reports indicate that orphanhood by AIDS was significantly associated with more peer problems, but this relationship was completely eliminated after controlling for domestic violence and maltreatment [Table 31]. Orphanhood by other causes was not associated with peer problems in either the model that controlled for only socio-demographic factors [Table 6B] or the model that accounted for socio-demographic factors and domestic violence and maltreatment [Table 31]. Living with an HIV/AIDS-infected parent was associated with more peer problems in the model that controlled for socio-demographic factors [Table 6B] but this association was eliminated when domestic violence and maltreatment were included in the adjusted model [Table 31].

Hyperactivity

When controlling for age, household size, number of changes in residence and number of children at home, children's self-reported scores indicate that orphanhood by AIDS was significantly associated with more hyperactivity [Table 6B], and this remained in an adjusted model that controlled for domestic violence and maltreatment [Table 31]. Living with an HIV/AIDS-infected parent was associated with more hyperactivity in a model that controlled for only socio-demographic factors [Table 6B] but this association was completely eliminated when domestic violence and maltreatment was also accounted for in an adjusted model [Table 31]. Furthermore, orphanhood by other causes was associated with more hyperactivity in the model that controlled for only socio-demographic factors [Table 6B], but this association was completely eliminated when domestic violence and maltreatment was included [Table 31].

Total Impact

Neither orphanhood by AIDS, orphanhood by other causes, nor living with an HIV/AIDS-infected parent were individually associated with self reported total impact burden in either the model that controlled for only socio-demographic factors [Tables 6B & 7B] or the one that controlled for both socio-demographic factors and domestic violence and maltreatment [Tables 31 & 32]. This was the same for both the children's self-reports [Table 31] and carers reports [Table 32].

Prosocial Behaviours

Both children's self-reports and caregivers' ratings indicate that there were no associations found between orphanhood by AIDS, orphanhood by other causes and living with an HIV/AIDS-infected parent with helping out behaviours in either the models that controlled for only socio-demographic factors [Table 6B & 7B] and the models that controlled for domestic violence and maltreatment and socio-demographic factors [Tables 21 & 32].

Reactive Attachment Disorders

Orphanhood by AIDS was associated ($p < .001$) with more reactive attachment disorders in a regression model that controlled for age, household size, number of changes in residence

and present educational status of children [Table 7B]. When domestic violence and abuse was included, the association remained significant but was weakened ($p < .05$) [Table 32]. Living with an HIV/AIDS-infected parent was also significantly associated with more reactive attachment disorder in a model that controlled for only socio-demographic factors [Table 7B], but this association was completely eliminated when domestic violence and maltreatment was included [Table 32]. Finally, orphanhood by other causes was significantly associated ($p < .001$) with more reactive attachment disorders in the model that controlled for socio-demographic factors, and the association remained but weakened ($p < .05$) when domestic violence and maltreatment was accounted for [Table 32].

Table 31: Children self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors and Domestic Abuse and Maltreatment

Source	Delinquency ¹	Self esteem ¹	Total difficulties ³	Emotional problems ²	Conduct problems ³	Peer problems ³	Hyperactivity ³	Total impact ¹	Prosocial behaviour ⁴
Orphaned by AIDS	.082	.081	.259 ^c	.153 ^b	-.013	.103	.196 ^c	.047	.042
Orphaned by other causes	-.076	-.068	.125 ^a	.216 ^c	-.004	-.044	.049	.049	.010
Living with HIV/AIDS infected parent	.029	.074	-.047	-.051	-.051	.063	-.004	-.004	-.005
R-Square	.245	.209	.798	.425	.547	.585	.307	.354	.075
R ² Change	.088	.024	.011	.004	.014	.029	.083	.011	.022
Adjusted R	.229	.193	.793	.407	.536	.574	.290	.340	.062
F - Change	16.557 ^c	4.363 ^b	8.022 ^c	1.010	4.526 ^b	9.960 ^c	16.868 ^c	2.449	3.341 ^a

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

Table 32: INFORMANTS REPORTS: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes, controlling for relevant socio-demographic cofactors, Domestic Abuse and Maltreatment

Source	RAD ⁵	Total Difficulties ³	Emotional problems ²	Conduct problems ³	Peer problems ³	Hyperactivity ³	Prosocial behaviour ⁴
Orphaned by AIDS	.146 ^a	.184 ^b	.085	.182 ^b	.107	.082	.032
Orphaned by other causes	.135 ^a	.189 ^b	.153 ^b	.034	.213 ^c	.039	-.026
Living with HIV/AIDS infected parent	.039	.175 ^b	.180 ^b	.106	.096	.052	-.043
R-Square	.267	.371	.288	.167	.202	.055	.022
R ² Change	.018	.001	.004	.001	.013	.001	.001
Adjusted R	.243	.352	.265	.143	.179	.027	.008
F – Change	3.395 ^a	0.129	0.820	0.121	2.253	0.015	0.033

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

⁵Adjusted model controls for age, household size, no. of changes in residence, presently in school.

SUMMARY OF FINDINGS

Psychological Outcomes	Association of being orphaned by AIDS	Association remaining when Domestic violence & Abuse is controlled
Delinquency	Significant	Effect Eliminated
Self-esteem	Significant	Effect Eliminated
Depression	Significant	Effect Remains but Reduced
Conduct Problems	Significant	Effect Remains but Reduced
Peer Problems	Significant	Effect Eliminated
Hyperactivity	Significant	Effect Remains
Reactive Attachment Disorder	Significant	Effect Remains but Reduced
Psychological Outcomes	Association of Living with HIV–infected Parent	Association remaining when Domestic violence & Abuse is controlled
Delinquency	Significant	Effect Eliminated
Self-esteem	Significant	Effect Eliminated
Depression	Significant	Effect Eliminated
Conduct Problems	Significant	Effect Eliminated
Peer Problems	Significant	Effect Eliminated
Hyperactivity	Significant	Effect Eliminated
Reactive Attachment Disorder	Significant	Effect Eliminated
Psychological Outcomes	Association of being orphaned by other causes	Association remaining when Domestic violence & Abuse is controlled
Delinquency	No Effect	
Self-esteem	No effect	
Depression	Significant	Effect Remains
Conduct Problems	No Effect	
Peer Problems	No effect	
Hyperactivity	Significant	Effect Eliminated
Reactive Attachment Disorder	Significant	Effect Eliminated

Dawes et al (2006b) noted that there is no reliable data on exposure to or experiencing child abuse among families affected by AIDS in developing countries due to poor reporting and recording of abuse incidences. However, there have been suggestions that domestic violence and child abuse in HIV/AIDS affected households is on the increase (Thurman & Kidman 2011). Elsewhere, several studies have documented the established link between domestic violence and child abuse, and development of high-risk behaviours and psychological problems (Jewkes et al 2010, Gilbert et al 2009, Heim & Nemeroff 2001, Albus et al 2004, Killian & Brakarsh 2004). The present analysis provided quantitative examination of domestic violence and child maltreatment as a potential risk factor contributing to heightened psychological distress among children affected by HIV/AIDS.

Evidence from the present analysis highlighted significant differences between the various orphanhood groups on reports of both domestic violence and maltreatment. Overall, children orphaned by AIDS and children living with HIV/AIDS-infected parents reported more domestic violence than other children. This is an indicator of the significant physical and emotional burdens of the HIV/AIDS illness and the strain on relationships experienced by affected families. Hunter and Williamson (2002) noted that HIV/AIDS increases the intensity and frequency of quarrelling and fighting among family members or couples. This is consistent with assertions that children who reside in families affected by HIV/AIDS are at risk of exposure to abuse (Richter 2003, Carr-Hill et al 2002, Gilborn et al 2001). Orphans from other causes also reported more domestic violence than comparison children.

Another key finding from the analysis is that maltreatment of children was significantly higher among OVC compared with comparison children. Orphans, regardless of the cause of their parental death and children living with HIV/AIDS-infected parents are at high risk of abuse (psychological and physical) and neglect by their caregivers who should be providing protection and guidance. This evidence contradicts the finding of Nyamukapa et al (2010) that child abuse was similar among both orphans of AIDS and comparison children but consistent with claims that many OVC suffer cruel and impersonal care-giving from their new caregivers (Richter 2003, Carnegie 2003). One explanation for the current evidence could be that the traditional family support system and network might have been pressurised by soaring numbers of OVC which increases the likelihood of abuse and

neglect (Pharoah 2004). In the present analysis, child maltreatment was negatively associated with household size and positively with the number of siblings living in household supports this postulation. That is, interestingly, it is larger numbers of adults in the household that is important to buffer child maltreatment. Another plausible explanation could be the high levels of HIV/AIDS related stigma, discrimination and social exclusion found among OVC. An increased incidence of child maltreatments is consistently reported among socially isolated families with inadequate community networks and ties (Killian & Brakarsh 2004). These findings are indications that there are differences in the family structures that children affected by HIV/AIDS and comparison children find themselves in.

Approximately 90% of OVC reported some form of maltreatment within the household. Eight out of ten children reported having been disciplined with a belt, stick or other hard object, 72% had been punched or slapped by adults, 65% called names and 69% had been threatened with expulsion from their homes. These prevalence rates are two to three times higher than those found among OVC in a community survey in South Africa, highlighting the worrying nature of the present finding for Ghanaian children (Thurman & Kidman 2011). However, various factors might explain this observation. First, South Africa outlawed the use of corporal punishment both in schools and households three decades ago and has consistently enacted and implemented policies to enforce it (Clarke 2002) whilst Ghana on the other hand just recently outlawed corporal punishment in schools and not in homes. Although outlawed, the existence of corporal punishment in schools is real in Ghana. Parents' and guardians' frequent use of corporal punishment and other cruel disciplinary measures in the homes is considered culturally acceptable and violates no legal act thus compromising children's right to protection from environmental and physical assaults. South Africa, with a more mature HIV/AIDS epidemic, has implemented several interventions and campaigns (economic, psychosocial, educational etc) for families affected with AIDS (Clarke 2002). These interventions, although not necessarily directly targeting domestic violence and maltreatment, may have enhanced guardians coping mechanisms and boosted children's social support networks which consequently protected OVC from being maltreated. Thirdly, many severely maltreated and neglected OVC are not captured in community surveys because, as part of South Africa's government sponsored policies, they are sent to residential care (Levine 2000). Ghana has no such residential policy for maltreated OVC and so they are found within the community. This is evident by the fact that higher levels of abuse are reported in South African orphanages and institutional care accommodating OVC than in the community (Williamson 2005). Clearly, political, legal and cultural variations in patterns of child-rearing practices

between South Africa and Ghana are real and important factors explaining the differing levels of reported maltreatment observed in the two countries.

Contrary to public health assumptions, caregivers and parents in the present study reported higher child maltreatment compared to the children's own report whilst children, however, reported higher levels of domestic violence than their guardians. This may be a reflection of parents' social and cultural acceptance of harsh child rearing practices. It could also be deduced that parents are being selective (social desirability bias) by under-reporting experiences of domestic violence because they might be victims or perpetrators of it. Evidence suggest that whilst third parties are particular likely to report household violence involving others, domestic violence between people who knew each other, particularly couples, were less likely to be reported by either the victim or the perpetrator (Baumer, Felson, and Messner 2003). Thurman & Kidman (2011) found that girls are maltreated more than boys. The present study failed to find any gender difference on maltreatment and domestic violence. Number of changes in place of residence (household migration) was significantly associated with more maltreatment. Speculatively, it may be that children who are being abused by their guardians are constantly on the move to try and escape the violence. Consistent with findings in South Africa, in the present study increased age was associated with more maltreatment (Thurman & Kidman 2011). Finally, in the present study, living with many siblings in the same households was related to higher maltreatment whilst larger household size was associated with less maltreatment. This suggests that it is better for OVC to live in households with many adults than in households with several minors. Certainly these identified significant associations between child maltreatment and relevant socio-demographic factors may be important in developing developmentally and contextually appropriate interventions that would alleviate child maltreatment among children affected by HIV/AIDS.

Diagram 13: Mediation model for Child Abuse-related factors and orphanhood by AIDS based on Sobel tests

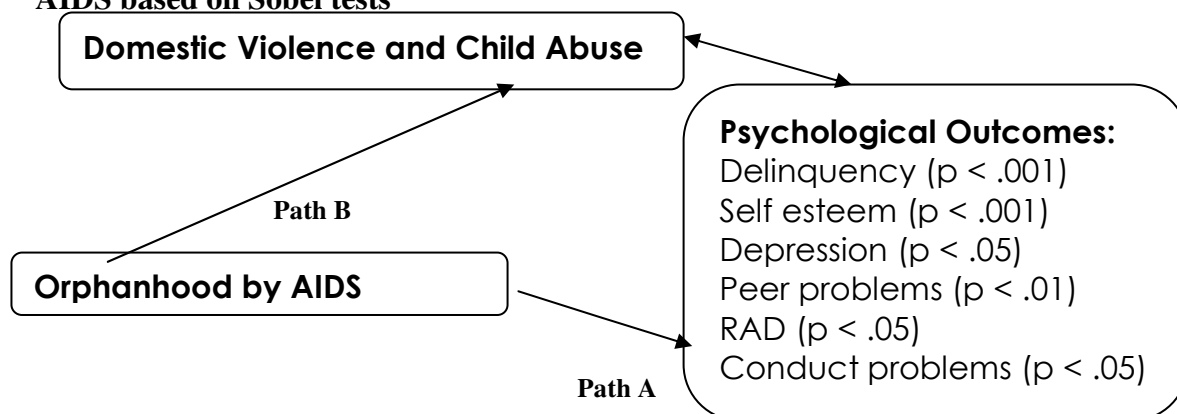


Diagram 14: Mediation model for Child Abuse-related factors and orphanhood by other causes based on Sobel tests

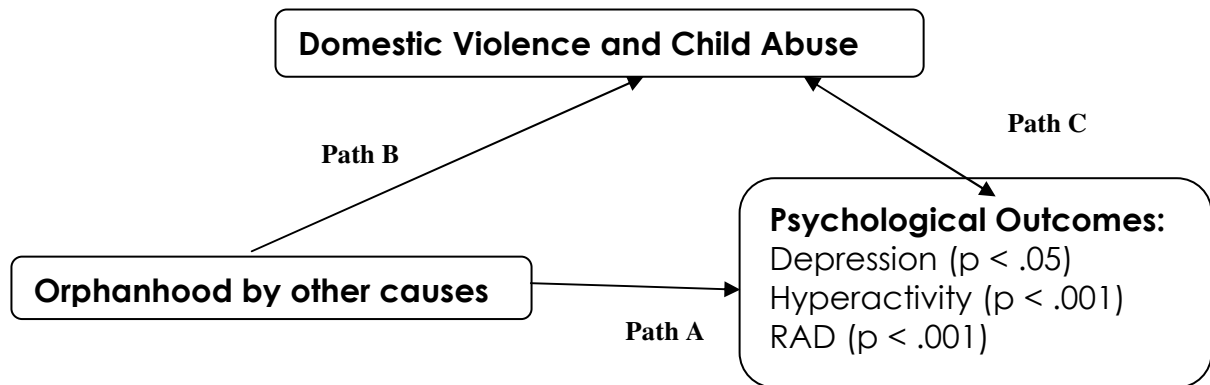
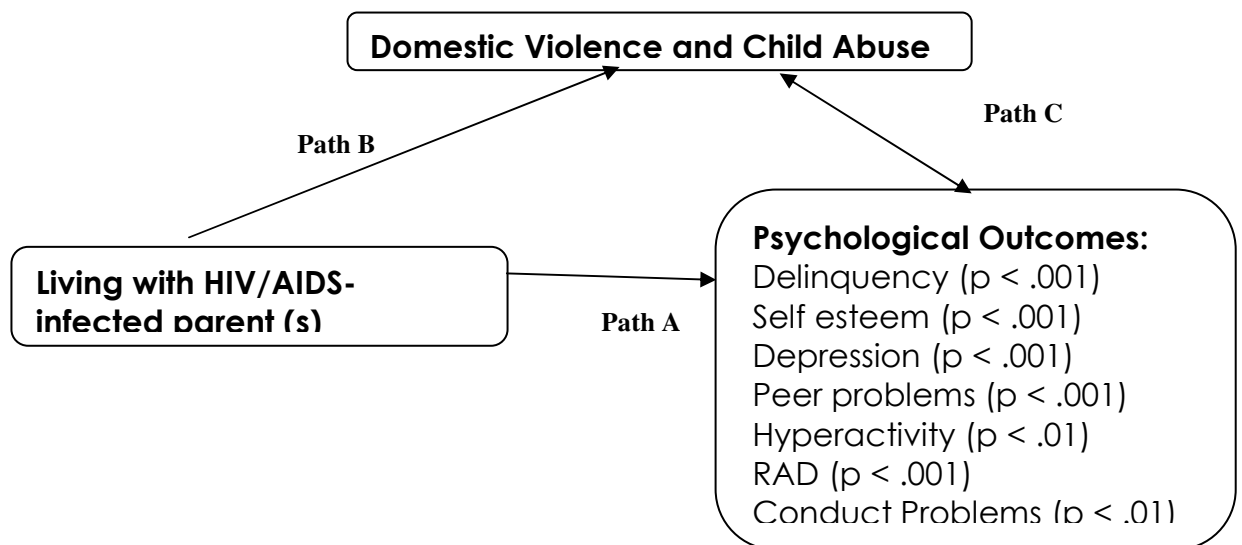


Diagram 15: Mediation model for Child Abuse-related factors and living with HIV/AIDS-infected parent(s) based on Sobel tests



Contextual Interpretation of Findings and Policy Implications

It was established that AIDS orphaned children and children living with HIV/AIDS-infected parents experience more psychological distress than both other orphans and non-OVC. The present analyses identified that domestic violence and child maltreatment strongly mediate the association between orphanhood status and psychological problems. The analyses also indicate that, when controlled for domestic violence and child maltreatment, the strong associations between children living with HIV/AIDS-infected

parents and psychological symptoms of delinquency, hyperactivity, depression, self esteem, peer problems, reactive attachment disorder were eliminated. Among AIDS orphaned children, accounting for domestic violence and child maltreatment eliminated associations with psychological outcomes of delinquency, peer problems and self esteem and significantly reduced association with symptoms of depression, hyperactivity and reactive attachment disorders. Similarly, controlling for domestic violence and child maltreatment eliminated associations with symptoms of low self-esteem, delinquency, peer problems, reactive attachment disorders and hyperactivity whilst association with depression was reduced but remained significant among other orphans.

These findings provide strong evidence that domestic violence and child maltreatment are important mediating risk factors for mental health outcomes for orphaned and vulnerable children affected by HIV/AIDS in Ghana. Thus, the key finding of the present analyses is the demonstration that among OVC, domestic violence and child maltreatment could explain psychological distress above and beyond the impact of orphanhood per se.

A policy implication is that intervention programmes that focus on reducing domestic violence and child maltreatment may be effective in alleviating or significantly reducing psychological difficulties and symptoms among children affected by the HIV/AIDS pandemic. Concerned NGOs, district assemblies and communities need to promote good parenting practices that will create an accepting and supportive environment for children affected by HIV/AIDS pandemic. The evidence further suggests that such domestic violence and child maltreatment reduction strategies should aim at children before they are orphaned and should continue thereafter to achieve optimal results in alleviating psychological distress.

Domestic violence and child maltreatment reduction is a complex and difficult public health challenge. No single study has examined the impact of domestic abuse and child maltreatment reduction strategies on children affected by HIV/AIDS. However, reviews of studies on child maltreatment reduction strategies in the general population offer some suggestions for designing effective interventions for children affected by HIV/AIDS. First, child maltreatment reduction interventions should focus on training and teaching parents and guardians positive child rearing practices. The benefits of positive child rearing practices and correction with warmth and love should be highlighted whilst the potential consequences of negative and harsh discipline measures are explained. Parents should be educated on child development, coping mechanisms, stress-and-anger management

techniques. Thurman & Kidman (2011) suggested that education will increase parents' and guardians' empathy and alleviate frustrations. Second, child maltreatment reduction interventions should provide enriched social support networks for parents and guardians. Two separate studies (Thurman et al. 2009, Nancy, John & David 2009) conducted in Kenya demonstrated that parents who took part in social support programs reported less maltreatment compared with parents who did not participate in any such program. Social support boosts self esteem and increases problem solving skills (Thurman & Kidman 2011). Third, prospective interventions should challenge social and cultural norms on harsh child discipline and negotiate for change. Plays and dramas could be organised in communities to inform people about the harmful effects and implications of cultural norms such as corporal punishments (African Theatre Series 2008). The public should also be made aware of international and legal positions and cultural norms regarding harsh child discipline, and should be encouraged to adopt more positive methods. Since the current data do not directly examine these suggestions, they should be taken with caution and their potential effectiveness evaluated in future studies.

Limitations

This analysis had some limitations. The first limitation is related to the nature of cross-sectional study designs. The direction of any causation is problematical in cross-sectional associations. The cross-sectional design did not allow for any conclusions to be drawn regarding causal relationships because exposure (contextual factors and HIV/AIDS exposures) and event (mental health outcomes) were measured at the same time. Because data were collected at one point in time, the direction of causation is not implicated in this study. For example, although there is a positive association between domestic violence and delinquency, it cannot be concluded that delinquency was the prompt for the violence or violence was the prompt for delinquency. The second limitation of this study is that all the data reported in this present study were based on retrospective, self-reporting by both children and their parents or caregivers, which were subject to self-reporting bias (e.g., recall bias, social desirability effect and self-selection). This issue is particularly relevant to child maltreatment and HIV/AIDS measures because topics related to these are sensitive in African cultures. Finally, some important information related to child maltreatment was not available for analysis (e.g., age at onset of the abuse, timing of abuse in relation to parental HIV/AIDS status or death, relationship with perpetrator). Future study that captures such information may provide greater insight into the contexts of child abuse and information on appropriate and effective child protection and psychosocial support to children affected by HIV/AIDS in Ghana.

CHAPTER TEN – CHILD LABOUR, AND MENTAL HEALTH

Question 4: What family and community level variables (Child Labour) are mediating any differences in mental health problems experienced by the different groups of children?

- 4a) Do children orphaned by AIDS engage in more child labour compared to other children?
- 4b) Does child labour mediate differences in mental health problems among OVC?

10.1 Differences between OVC groups on Child Labour [Table 34]

One-Way ANOVA analysis indicates a significant association between orphanhood groups and overall child labour [$F(3, 287) = 37.152, p < .001$]. A subsequent follow-up bonferroni-adjusted multiple comparison showed that comparison children reported a significantly lower frequency of child labour than children living with HIV/AIDS-infected parents ($t = 4.540, p < .001$), AIDS orphaned children ($t = 3.399, p < .001$) and children orphaned by causes other than AIDS ($t = 2.582, p < .001$). Additionally, children living with HIV/AIDS-infected parents also reported significantly more child labour than children orphaned by causes other than AIDS ($t = 1.958, p < .001$). No further group differences were observed.

The caring responsibilities subscale exhibited a similar pattern as the reported overall child labour where comparison children reported lower caring responsibilities than OVC [$F(3, 287) = 36.137, p < .001$]. Children living with HIV/AIDS-infected parents also reported more caring responsibilities than other orphaned children ($t = 0.960, p < .01$).

However, no between orphanhood group difference was found on reported levels of engagement in household chores [$F(3, 287) = 1.775, p = n. s.$].

The paid work (direct income activity) subscale also showed significant between group difference [$F(3, 287) = 26.616, p < .001$]. Post hoc bonferroni-adjusted multiple comparison indicated that children living with HIV/AIDS-infected parents ($t = 1.090, p <$

.001), AIDS orphaned children ($t = 1.082, p < .001$) and children orphaned by causes other than AIDS ($t = 0.799, p < .001$) reported being engaged in more paid work than comparison children.

10.2 Association between Child Labour and Psychological Outcomes [Table 35]

The psychosocial adjustment outcomes were correlated across overall child labour as well as its subscales using Pearson r . All the psychosocial outcomes except prosocial behaviours were significantly correlated with total child labour, with higher levels of child labour associated with higher levels of psychosocial distress [Table 35]. Specifically, children who reported higher levels of child labour showed more symptoms of delinquency, depression, peer problems, conduct problems, reactive attachment disorders, hyperactivity, and a lower level of self-esteem. Similar correlations were found with the paid work and caring responsibilities subscales except that prosocial behaviour was inversely associated with caring responsibilities ($r = -.149, p < .01$) whilst the positive association between symptoms of delinquency and caring responsibilities ($r = .111, p = n.s.$) did not reach statistical significance [Table 35].

The household chores subscale, however, showed a different pattern, where higher scores on the subscale were associated with only more symptoms of conduct problems ($p < .05$) and peer problems ($p < .05$), lower symptoms of hyperactivity ($p < .01$) and lower self-esteem ($p < .001$).

Certain socio-demographic factors showed significant associations with child labour. Significantly higher reported levels of child labour were associated with increased age ($r = .420, p < .001$), living in smaller households ($r = -.195, p < .001$), having more siblings ($r = .209, p < .001$), frequent changes in place of residence ($r = .144, p < .05$) and currently not attending school ($t = 3.135, p < .001$). Although the gender difference in child labour did not reach statistical significance, it is observed that boys reported being engaged in paid work more than girls whilst girls reported higher scores the caring responsibilities and household chores. The present study is **underpowered to detect further effects (page 70)**

Table 34: Young people's self-report: Orphanhood or Groups differences on Child Labour

Source	Comparison group of children (n = 100) [1]		Orphaned and vulnerable children			F / X
			AIDS-orphaned children(n = 74) [2]	Other-orphans (n = 67) [3]	Children with HIV/AIDS-infected parents (n = 50) [4]	
Total Chores & Responsibility (M, SD)		6.06 (2.67)	9.46 (2.78)	8.64 (2.90)	10.60 (2.94)	37.152^c
Household Chores (M, SD)		3.21 (1.51)	3.49 (1.17)	3.54 (1.27)	3.70 (1.27)	1.775
Fetching water/wood (%):		66.0	68.9	70.1	76.0	1.596
YES						
NO	34.0	31.1	29.9	24.0		
Tending animals (%):	YES	8.0	9.5	9.0	10.0	0.202
NO	92.0	90.5	91.0	90.0		
Farming (%):	YES	49.0	56.8	58.2	66.0	4.168
NO	51.0	43.2	41.8	34.0		
Caring Responsibilities (M, SD)		1.67 (1.19)	3.30 (1.50)	3.00 (1.55)	3.96 (1.50)	36.137^c
Caring for sibling (%):	YES	26.0	63.5	56.7	58.0	30.562 ^c
NO	74.0	36.5	43.3	42.0		
Caring for adults (%):	YES	13.0	40.5	31.3	56.0	32.509 ^c
NO	87.0	59.5	68.7	44.0		
Absent from Sch. to care (%):	YES	19.0	56.8	52.2	72.0	47.510 ^c
NO	81.0	43.2	47.8	28.0		
Paid work (M, SD)		0.35 (0.59)	1.43 (1.04)	1.15 (1.06)	1.44 (1.05)	26.616^c
Direct Income work (%):	YES	6.0	51.4	37.3	50.0	51.846 ^c
NO	94.0	48.6	62.7	50.0		

^a Denotes significance at the 0.05 level, ^b denotes significance at the 0.01 level, ^c denotes significance at the .001 level

Table 35: Bivariate Pearson r Associations between Child Labour and psychological outcomes¹

Source	Total chores & Responsibilities	Household chores	Caring Responsibilities	Paid Work
Delinquency	.148 ^b	-.092	.111	.262 ^c
Self Esteem	.487 ^c	.324 ^c	.369 ^c	.235 ^c
SDQ Scale:				
Total Difficulties	.454 ^c	.061	.397 ^c	.364 ^c
Emotional problems	.300 ^c	.038	.330 ^c	.267 ^c
Conduct problems	.316 ^c	.121 ^a	.158 ^b	.324 ^c
Peer Problems	.468 ^c	.143 ^a	.393 ^c	.252 ^c
Hyperactivity	.142 ^a	-.163 ^b	.178 ^b	.182 ^b
Prosocial behaviours	-.112	-.090	-.149 ^b	-.031
Impact	.225 ^c	.059	.191 ^c	.158 ^b
RAD Total	.220 ^c	.067	.232 ^c	.122 ^a
RAD: Inhibited Problems	.135 ^a	.030	.133 ^a	.018
RAD: Disinhibited Problems	.230 ^c	.080	.251 ^c	.174 ^b

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

10.3 Mediating effects of Child labour on associations between orphanhood and mental health outcomes [Tables 36]

Delinquency

Controlling for age, household size and number of changes in residence in an adjusted model, orphanhood by AIDS was significantly associated ($p < .001$) with greater delinquency problems [Table 6B] and the association was maintained but weakened ($p < .05$) when child labour was accounted for in a subsequent regression model [Table 36]. Living with an HIV/AIDS-infected parent was significantly associated with more delinquency problems in a model that controlled for only relevant demographic co-factors but the association was completely eliminated when reported child labour was controlled for. Orphanhood by other causes was not associated with delinquency problems in either the model that controlled for only socio-demographic factors or the adjusted model that accounted for both socio-demographic factors and reported scores on child labour [Tables 6B and 36].

Self esteem

In a regression analysis, orphanhood by AIDS was associated ($p < .01$) with lower self esteem after adjusting for age, household size and number of changes in residence [Table 6B] but this association was completely eliminated when child labour was included [Table 36]. Similarly, living with an HIV/AIDS-infected parent was associated ($p < .01$) with lower self-esteem in the model that controlled for only socio-demographic factors, but this association was eliminated in a subsequent model after controlling for child labour and relevant socio-demographic cofactors [Table 36]. However, orphanhood by other causes was not associated with self esteem in either the unadjusted model or the adjusted model that controlled for child labour [Tables 6B & 36].

Total Difficulties (SDQ Total)

Regression analyses of children's self-reports indicates that orphanhood by AIDS, orphanhood by other causes and living with HIV/AIDS-infected parents were all, independently significantly associated with more psychological difficulties (SDQ total) in a model that controlled for age, household size, number of changes in residence and number of siblings at home [Table 6B]. When child labour was accounted for in subsequent models, the significant association between orphanhood types and more SDQ total psychological difficulties were maintained for orphanhood by AIDS ($p < .001$) and

orphanhood by other causes ($p < .05$) but completely eliminated for living with HIV/AIDS-infected parent [Table 36].

Conduct Problems

Controlling for age, household size, number of changes in residence and number of children at home, AIDS orphanhood was not associated with children's self-reports of conduct problems [Table 6B], and there was still no association when child labour was included [Table 36]. Similarly, orphanhood by other causes and living with an HIV/AIDS-infected parent were individually not associated with conduct problems in either the model that controlled for only socio-demographic factors [Table 6B] or the one that also accounted for both child labour and socio-demographic factors [Table 36].

Peer Problems

Controlling for age, household size, number of changes in residence and number of children at home in regression models [Table 6B], results indicate that orphanhood by AIDS was significantly associated with more peer problems, and this relationship remained but was weakened ($p < .05$) after controlling for child labour [Table 36]. Orphanhood by other causes was not associated with peer problems in either the model that controlled for only socio-demographic factors [Table 6B] or the model that accounted for socio-demographic factors and child labour [Table 36]. Living with an HIV/AIDS-infected parent was associated with more peer problems in the model that controlled for socio-demographic factors [Table 6B] but this association was eliminated when child labour was included in the adjusted model [Table 36].

Depression (Emotional Problems)

In Regression analysis, living with HIV/AIDS-infected parents was significantly associated with more symptoms of depression in the model [Table 6B] that controlled for socio-demographic factors but this association was completely eliminated in the model that controlled for both socio-demographic factors and experience of child labour [Table 36]. Orphanhood by AIDS was also significantly associated with more depression in the model that controlled for only socio-demographic factors [Table 6B], and this association remained significant in the model that accounted for socio-demographic factors and child labour [Table 36]. Finally, orphanhood by other causes was significantly associated with more symptoms of depression in a regression model that controlled for socio-demographic factors [Table 6B], and this association remained after controlling for child labour [Table 36].

Hyperactivity

When controlling for age, household size, number of changes in residence and number of children at home, children's self-reported scores indicate that orphanhood by AIDS was significantly associated with more hyperactivity [Table 6B], and this remained in an adjusted model that controlled for child labour [Table 36]. Living with an HIV/AIDS-infected parent was associated with more hyperactivity in a model that controlled for only socio-demographic factors [Table 6B] but this association was completely eliminated when child labour was also accounted for in an adjusted model [Table 36]. Furthermore, orphanhood by other causes was associated with more hyperactivity in the model that controlled for only socio-demographic factors [Table 6B], but this association was completely eliminated when child labour was included [Table 36].

Total Impact

Orphanhood by AIDS, orphanhood by other causes, and living with an HIV/AIDS-infected parent were all individually not associated with total impact burden in neither the model that controlled for only socio-demographic factors [Tables 6B & 7B] nor the one that controlled for both socio-demographic factors and child labour [Table 36].

Reactive Attachment Disorder Symptoms

Orphanhood by AIDS was associated ($p < .001$) with more reactive attachment disorder symptoms in a regression model that controlled for age, household size, number of changes in residence and present educational status of children [Table 7B]. When child labour was included, the association remained significant but was weakened [Table 36]. Living with an HIV/AIDS-infected parent was also significantly associated with more reactive attachment disorder symptoms in a model that controlled for only socio-demographic factors [Table 7B], but this association was completely eliminated when child labour was included [Table 36]. Finally, orphanhood by other causes was significantly associated ($p < .001$) with more reactive attachment disorders in the model that controlled for socio-demographic factors, but the association was completely eliminated when child labour was accounted for [Table 36].

Table 36: Children self-report: Multivariate associations between orphanhood by AIDS, orphanhood by other causes, living with an HIV/AIDS-infected parents, and psychological outcomes controlling for socio-demographic cofactors and Child Labour

Source	Delinquency ¹	Self esteem ¹	Total difficulties ³	Emotional problems ²	Conduct problems ³	Peer problems ³	Hyperactivity ³	Prosocial behaviour ⁴	Reactive Attachment Disorders ⁵
Orphaned by AIDS	.130 ^a	.079	.290 ^c	.173 ^b	.003	.129 ^a	.200 ^c	.050	.162 ^b
Orphaned by other causes	-.110	-.104	.114 ^a	.208 ^c	-.029	-.076	.082	.032	.109
Living with HIV/AIDS infected parent	.102	.032	-.013	-.033	-.014	.076	-.055	.001	.029

^a Denotes significance at the 0.05 level, ^b Denotes significance at the .01 level, ^c Denotes significance at the .001 level

¹Adjusted model controls for age, household size, no. of changes in residence;

²Adjusted model controls for age, household size, no. of changes in residence, gender, no. of children at home, presently in school; ³Adjusted model controls for age, household size, no. of changes in residence, no. of children at home;

⁴ Adjusted model controls for age

⁵Adjusted model controls for age, household size, no. of changes in residence, presently in school.

SUMMARY OF FINDINGS

Psychological Outcomes	Association of being orphaned by AIDS	Association remaining when Child Labour is controlled
Delinquency	Significant	Effect Remains but Reduced
Self-esteem	Significant	Effect Eliminated
Depression	Significant	Effect Remains but Reduced
Conduct Problems	Significant	Effect Remains but Reduced
Peer Problems	Significant	Effect Remains but Reduced
Hyperactivity	Significant	Effect Remains
Reactive Attachment Disorder	Significant	Effect Remains but Reduced
Psychological Outcomes	Association of Living with HIV–infected Parent	Association remaining when Child Labour is controlled
Delinquency	Significant	Effect Eliminated
Self-esteem	Significant	Effect Eliminated
Depression	Significant	Effect Eliminated
Conduct Problems	Significant	Effect Eliminated
Peer Problems	Significant	Effect Eliminated
Hyperactivity	Significant	Effect Eliminated
Reactive Attachment Disorder	Significant	Effect Eliminated
Psychological Outcomes	Association of being orphaned by other causes	Association remaining when Child Labour is controlled
Delinquency	No Effect	
Self-esteem	No effect	
Depression	Significant	Effect Remains
Conduct Problems	No Effect	
Peer Problems	No effect	
Hyperactivity	Significant	Effect Eliminated
Reactive Attachment Disorder	Significant	Effect Eliminated

It was established earlier that children affected by the HIV/AIDS pandemic are vulnerable to psychological distress compared with other children. Cluver (2007) noted that it is not clear whether children affected by AIDS do engage in more child labour and domestic work than other children. In Ghana, 90% of the 2.47 million children who are engaged in child labour are still in school (GSS 2010). Globally, child labour is still on the increase despite several efforts to end it (IPEC 2005). Although, in the literature, the relationship between mental health and child labour among the general population of young people is contested (Lachman 1996), it has been suggested that child labour has adverse effects on child's mental health. However, despite child labour and domestic responsibilities being prevalent in Africa, the relationship between mental health outcomes and child labour among children affected by AIDS has not previously been explored in this context (Cluver et al 2007). The present analysis is the first quantitative examination of child labour as a potential risk factor contributing to heightened psychological distress among children affected by HIV/AIDS.

The present analyses indicate that higher levels of overall child labour showed significant associations with higher symptoms of psychological difficulties including delinquency, hyperactivity, reactive attachment disorders, conduct and peer problems, and lower self esteem. The present study also found significant differences between the orphanhood groups on domestic chores and responsibilities. Overall, children affected by HIV/AIDS (OVC) reported engaging in significantly more domestic chores and responsibilities than comparison children. Furthermore, controlling for child labour eliminated many of these symptoms among OVC. This suggests that child labour might be an important risk factor for mental health problems among orphans in general and children affected by HIV/AIDS. The present finding supports earlier qualitative observations that domestic chores are highly distressing for orphans (Giese et al 2003). Aside from the risks for occupational diseases and injuries noted among child labourers (Lieten 2001), in South Africa, it was also suggested that working for long hours among children was detrimental to their wellbeing (Budlender & Bosch 2002, Makhoul et al (2004)). Child labour has been consistently associated with poverty (Bagley & Mallick 2000), internal migration and lack of good educational opportunities and policies (Srinath 2006). Earlier analyses in the present study demonstrated that these variables are also associated with OVC. It is interesting too that in the present study higher levels of household chores was associated

with lower symptoms of hyperactivity: perhaps because hyperactive kids are too chaotic to engage in household chores, or do them so badly that someone else takes over.

Reported levels of household chores were generally low for all the children. This suggests that fetching water and firewood, tending animals and helping on the farms are household chores that children in Ghana rarely engage in. Additionally, household responsibilities showed weak associations with psychological outcomes suggesting that this might not be a risk factor for mental health. This echoes suggestions by some researchers that domestic chores, in moderation, promote social responsibility and a sense of inclusion in children in ways that may not harm children's psychological functioning (Clacherty & Budlender 2003, Bray 2003b). Overall, children living with HIV/AIDS infected parents are actually the group most likely to miss school because of caring responsibilities and are as likely as children orphaned by AIDS to be doing paid work. This underlines again that this group is just as vulnerable as the orphans.

Contextual Interpretation of Findings and Policy Implications

It was established that AIDS orphaned children and children living with HIV/AIDS-infected parents experience more psychological distress than both other orphans and non-OVC. The present analyses identified that child labour strongly mediates the association between orphanhood status and psychological problems. The analyses also indicate that, when controlled for child labour, the strong associations between children living with HIV/AIDS-infected parents and psychological symptoms of delinquency, hyperactivity, depression, self esteem, peer problems and reactive attachment disorder were eliminated. Among AIDS orphaned children, accounting for child labour eliminated associations with psychological outcomes of delinquency, peer problems and self esteem and significantly reduced association with symptoms of depression and reactive attachment disorders. Similarly, controlling for child labour eliminated associations with symptoms of low self-esteem, delinquency, peer problems, reactive attachment disorders and hyperactivity whilst association with depression was reduced but remained significant among other orphans. Makhoul et al (2004) noted that child labour interferes with children's health (both physical and mental) and development.

These findings provide strong evidence that child labour is an important mediating risk factor for mental health outcomes for orphaned and vulnerable children affected by HIV/AIDS (OVC) in Ghana. Thus, the key finding of the present analyses is the

demonstration that among OVC, child labour could explain psychological distress above and beyond the impact of orphanhood per se.

Diagram 16: Mediation model for Child Labour-related factors and orphanhood by AIDS based on Sobel tests

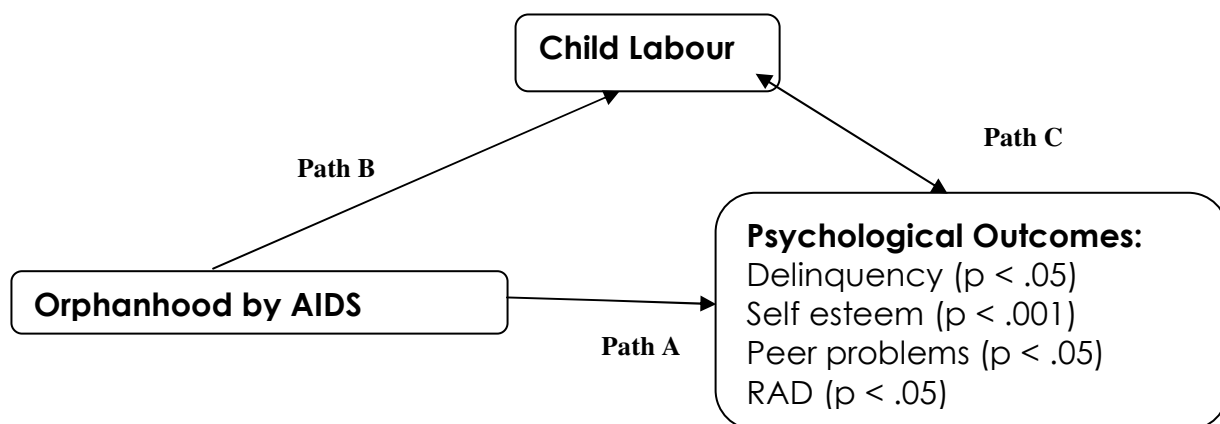


Diagram 17: Mediation model for Child Labour-related factors and orphanhood by other causes based on Sobel tests

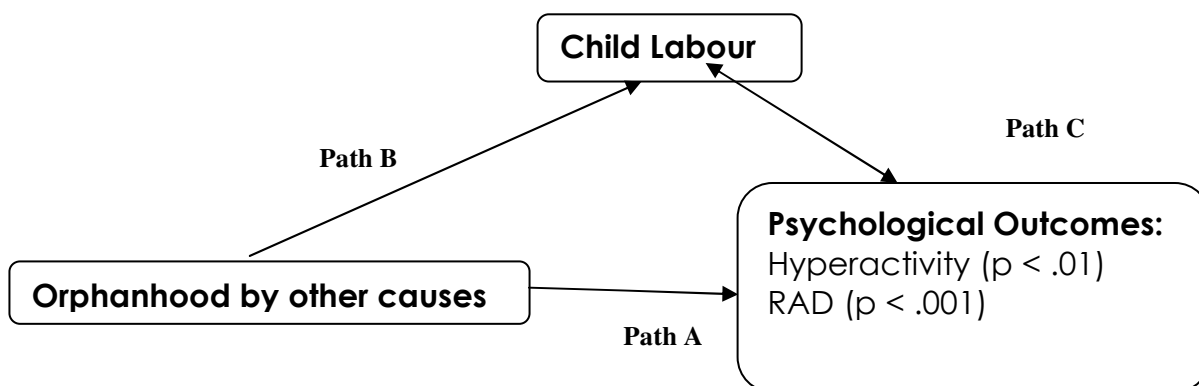
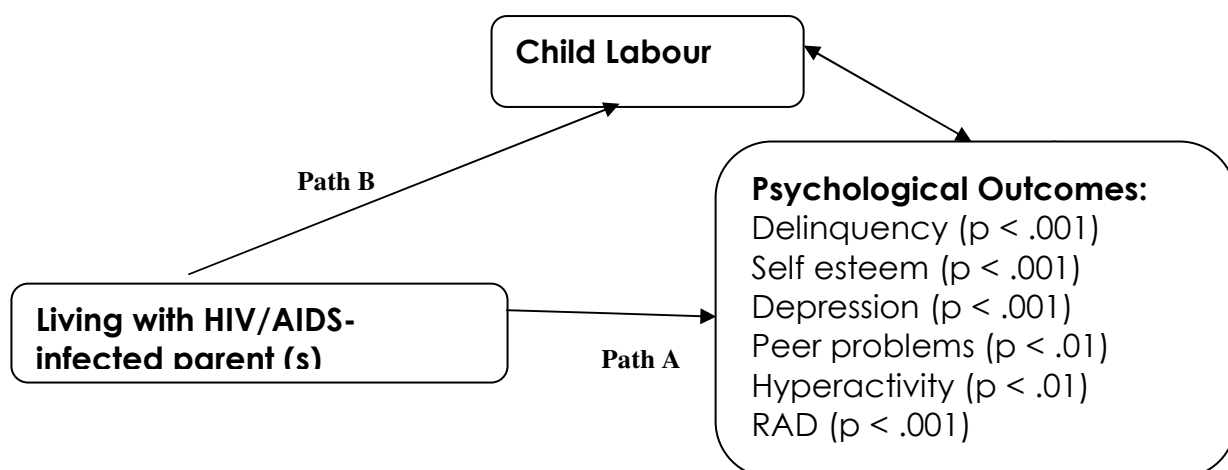


Diagram 18: Mediation model for Child Labour-related factors and living with HIV/AIDS-infected parent(s) based on Sobel tests



A policy implication is that intervention programmes that focus on eliminating child labour may be effective in alleviating or significantly reducing psychological difficulties and symptoms among children affected by the HIV/AIDS pandemic. Alleviating child labour is a complex and difficult challenge compounded by observations that child labour is often tolerated by societies, and seen as part of cultural and family expectations. Bunnak (2007) suggested that child labour persists because the harmful effect it has on children has been downplayed. Additionally, economists cited attractiveness of child labour to employers as they pay children little, manipulate and exploit them. In Ghana, it has been noted that child labour laws are not enforced effectively and consistently as enforcement officials are not even familiar with the legal provisions (GSS 2010). Despite these challenges, it is suggested that government agencies, NGOs, district assemblies and communities need to promote good economic, social and educational policies to curb child labour since it is a risk factor for various kinds of psychological difficulties. The evidence further suggests that such child labour reduction strategies should aim at children before they are orphaned and should continue thereafter to achieve optimal results in alleviating psychological distress. Addressing the issue of child labour should be given priority because child labour may also be a barrier to school attendance.

Limitations

The assumption of normality of the variable data included in the study was not completely reliable since some of these variables were slightly skewed from the normal distribution (e.g. child labour scores). Consequently, this could make the use of the parametric tests in the analyses problematic and less reliable. The analysis of multiple variables is more likely to produce statistically significant associations by chance. However, in this study the SPSS software used is robust in the face of these violations. In addition, in the analyses many highly significant probability (p) values were obtained. These reduced the likelihood that the results were obtained by chance.

Within the context of this study, an issue challenging the interpretation of the findings is the comparability of caregiver ratings. Whether fathers are as reliable as mothers in rating their child's behaviour regarding mental health and contextual variable (child labour)? For example, SDQ scores used in this study are based on the ratings of both the child and the principal caregiver of the target child. Observations are that for children in households with an absent father for reasons of death or whatsoever, this is typically the child's mother, but in households with an absent mother, the caregiver may be the father, a grandparent,

another relative, a family friend, or even an unrelated caregiver. Palmieri and Smith (2007) confirmed the structural validity of the SDQ in a sample of custodial grandparents in the United States. However, other researchers question the comparability of ratings by caregivers with different relationships to the child. For example, Davé et al. (2008), in their study of SDQ scores reported by 248 parent dyads, found that fathers in the United Kingdom reported higher mean scores than mothers for externalizing behaviours.

The analysis is also limited by its relatively small sample size and use of cross-sectional data. Associations found in the data, such as those between orphanhood groups and psychological well-being as well as the mediating role of child labour on this association may be due to reverse causation. Given the nature of the available data, it is difficult to carry out a proper causality analysis. The study relied on self-reports by children; thus, we were unable to investigate psychological distress in children affected by HIV/AIDS under 8 years of age and the data may be subject to reporting bias.

CHAPTER ELEVEN – INTERACTION EFFECTS OF RISKS AND PROTECTIVE FACTORS

Question 8: Are there any interaction effects between identified risk and protective factors? Do these factors combine to produce a cumulative, additive effect on the mental health of children affected by HIV/AIDS?

11.1 Depression

Two –way interaction effects

Log-linear analyses using back elimination identified two two-way interactions of risks factors with depressive disorder. Only psychological abuse and orphanhood group were each independently interacting with scoring above the cut-off for likely depression. In the first two-way interaction, two-thirds (65.6%) of children who were psychologically abused showed clinical range scores for depression whilst one-third (29.5%) of children who reported less psychological abuse showed scores above the cut-off for likely depression ($\chi^2 = 37.506$, $p < .001$). Orphanhood groups differed significantly on their experience of psychological abuse where OVC scored higher (64% of children living with HIV/AIDS-infected parents, 52.7% of children orphaned by AIDS and 62.7% other orphans) compared with comparison children (12%) [$\chi^2 = 61.657$, $p < .001$]. The other two-way interaction effect showed that orphanhood group was related to the likelihood of scoring above the cut-off for likely depression. Approximately 66%, 68%, 61% and 7% of children living with HIV/AIDS-infected parents, AIDS-orphaned, other-orphans, and non-orphaned children respectively scored above the cut-off for likely depression ($\chi^2 = 89.573$, $p < .001$).

Three-way interaction effects

Three three-way interaction effects related to the likelihood of scoring above the cut-off for likely depression were identified. The first interaction involved stigma and physical abuse in relation to likelihood of scoring above the cut-off for likely depression (Graph 11.1). Each of these risk factors (physical abuse and stigma) was independently associated with increase in the likelihood of scoring above the cut-off for likely depression. The results indicated that physical abuse itself (in the absence of stigma) increased the proportion of children with likely depression from 0 to 30.1% and being stigmatized (in the absence

physical abuse) heightened the proportion to 52.3%. However, among all children, those who are stigmatized and physically abused are the group showing the highest likelihood of scoring above the cut-off for likely depression (58.2%). The group with the lowest proportion scoring above the cut-off for likely depression are children who were not stigmatized and least physically abused (22.9% of scoring above the cut-off for likely depression).

The second three-way interaction effect concerns scoring above the cut-off for likely depression in relation to physical abuse and engagement in paid labour as presented in Graph 11.2. More physical abuse and less paid labour has a 38.1% increased likelihood for scoring above the cut-off for likely depression and engagement in more paid labour (income generating activities) in the absence of/less physical abuse increased the proportion of scoring above the cut-off for likely depression to 46.9%. The group with the lowest proportion scoring above the cut-off for likely depression was the group that included children who were less physically abused and engaged in less paid labour (38.0% of scoring above the cut-off for likely depression). Children who were physically abused and engaged in more paid labour formed the group with the highest likelihood for scoring above the cut-off for likely depression (66.1%).

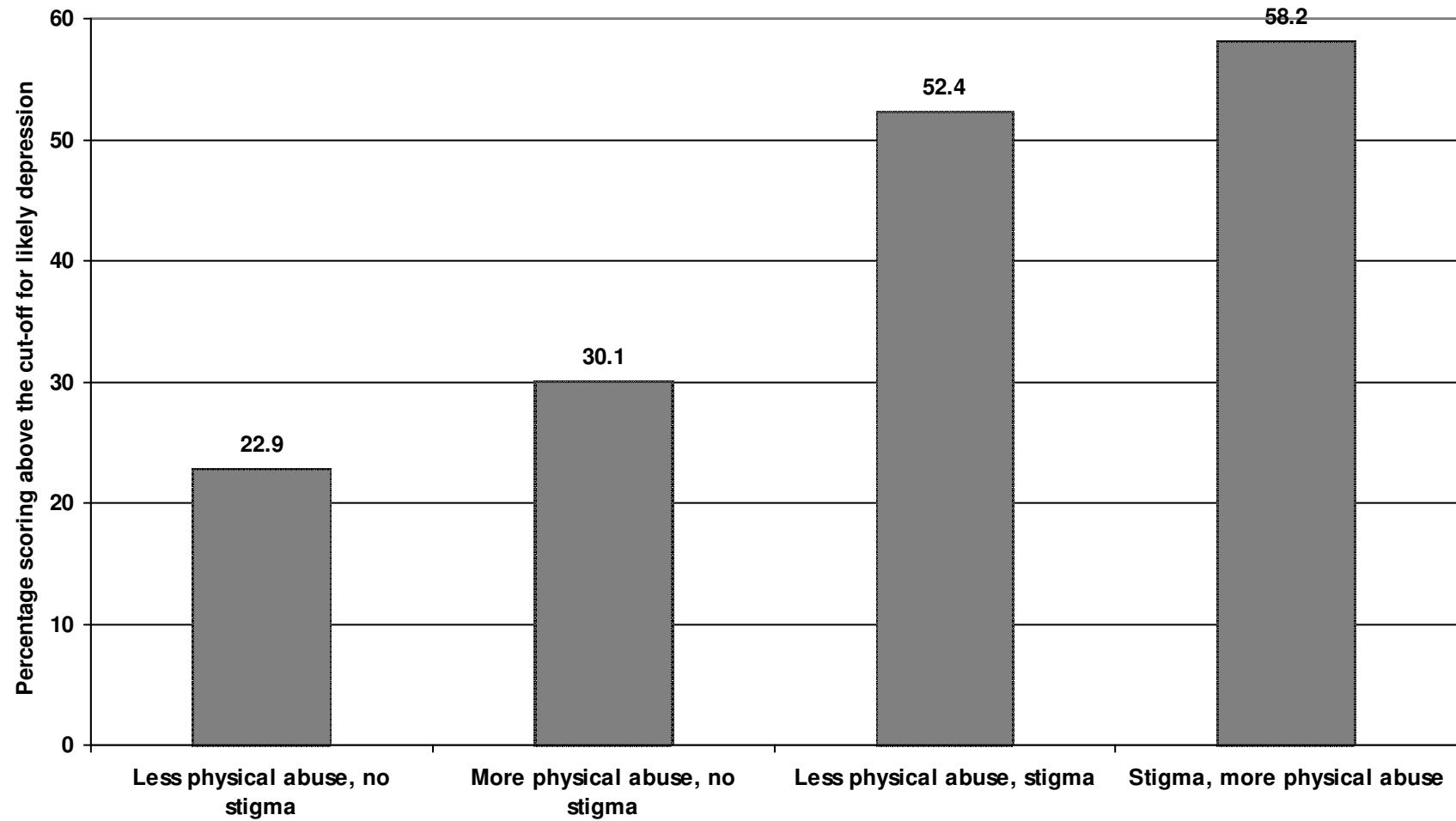
Finally, there was an interaction effect between scoring above the cut-off for likely depression and neglect for the different orphanhood groups as shown in Graph 11.3. There is a low likelihood for scoring above the cut-off for likely depression among non-orphans either in the absence (6.1%) or presence (7.5%) of neglect. Among children living with HIV/AIDS-infected parents, likelihood for scoring above the cut-off for likely depression was initially high in either the absence (65.2%) or presence (66.7%) of neglect. Among other orphaned children and children orphaned by AIDS the likelihood for scoring above the cut-off for likely depression with less or no neglect were 58.5% and 61.2% respectively, and these increased to 65.4% and 73.6% in the presence of more neglect.

Four-way interaction effects

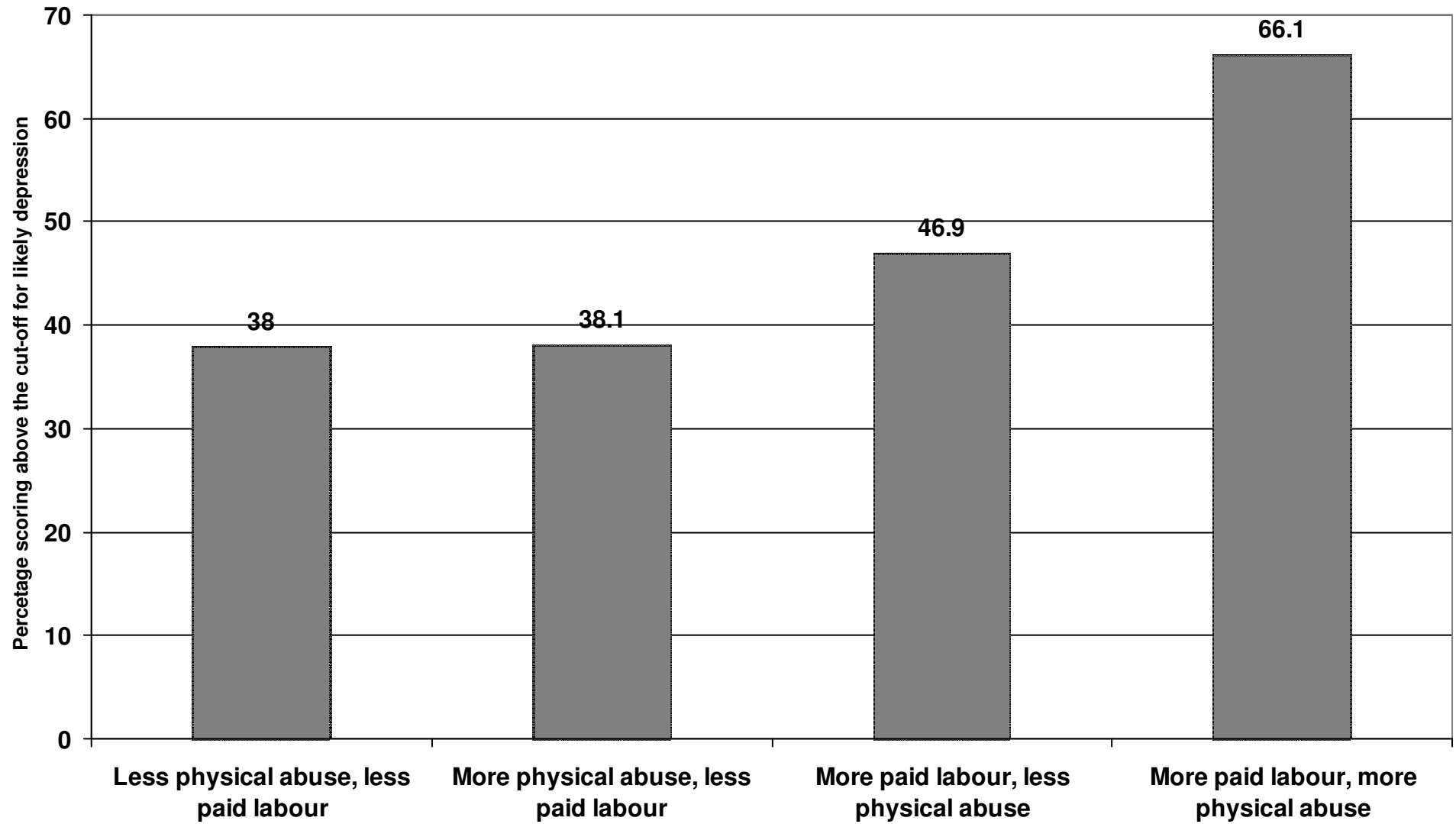
The only four-way factor effect interacting for those scoring above the cut-off for likely depression involves physical abuse and engagement in paid labour for different groups of orphanhood ($\chi^2 = 8.914$, $p < .05$) [Graph 11.4]. There is a low likelihood of scoring above the cut-off for likely depression among other orphans (2.9%) who were less physically abused and engaged in less paid labour, but this increased eleven-fold for more paid labour and more physical abuse (33.3%). Among children orphaned by AIDS and children living

with HIV/AIDS-infected parents, the likelihood of scoring above the cut-off for likely depression was approximately one-fifth (20%) and this doubled to 38.3% and 42.8% respectively when exposed to more paid labour and more physical abuse. Approximately one quarter of OVC who reported less paid labour but more physical abuse showed scores above the cut-off for likely depression (Graph 11.4).

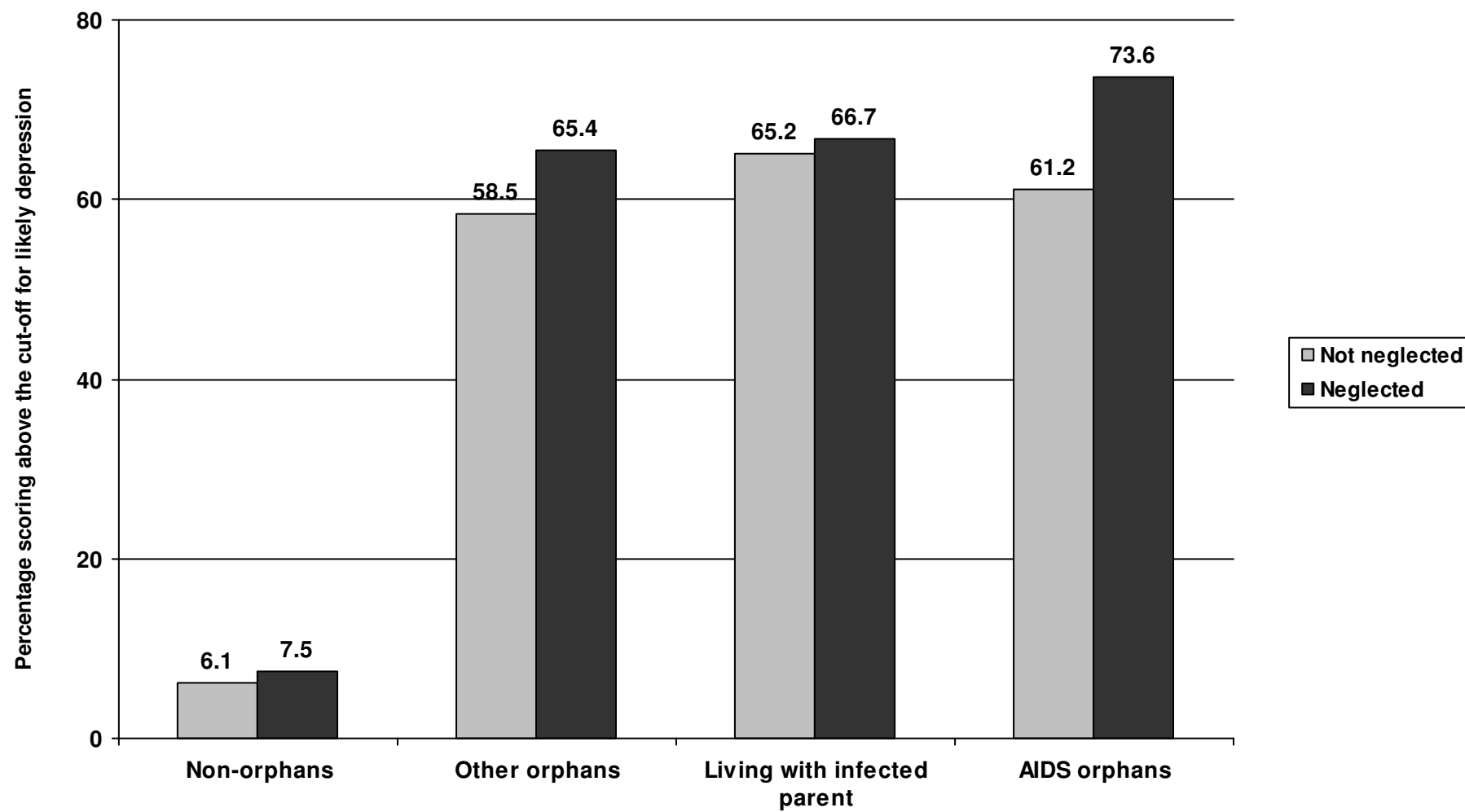
Graph 11.1: Interaction among scoring above the cut-off for likely depression, stigma and physical Abuse



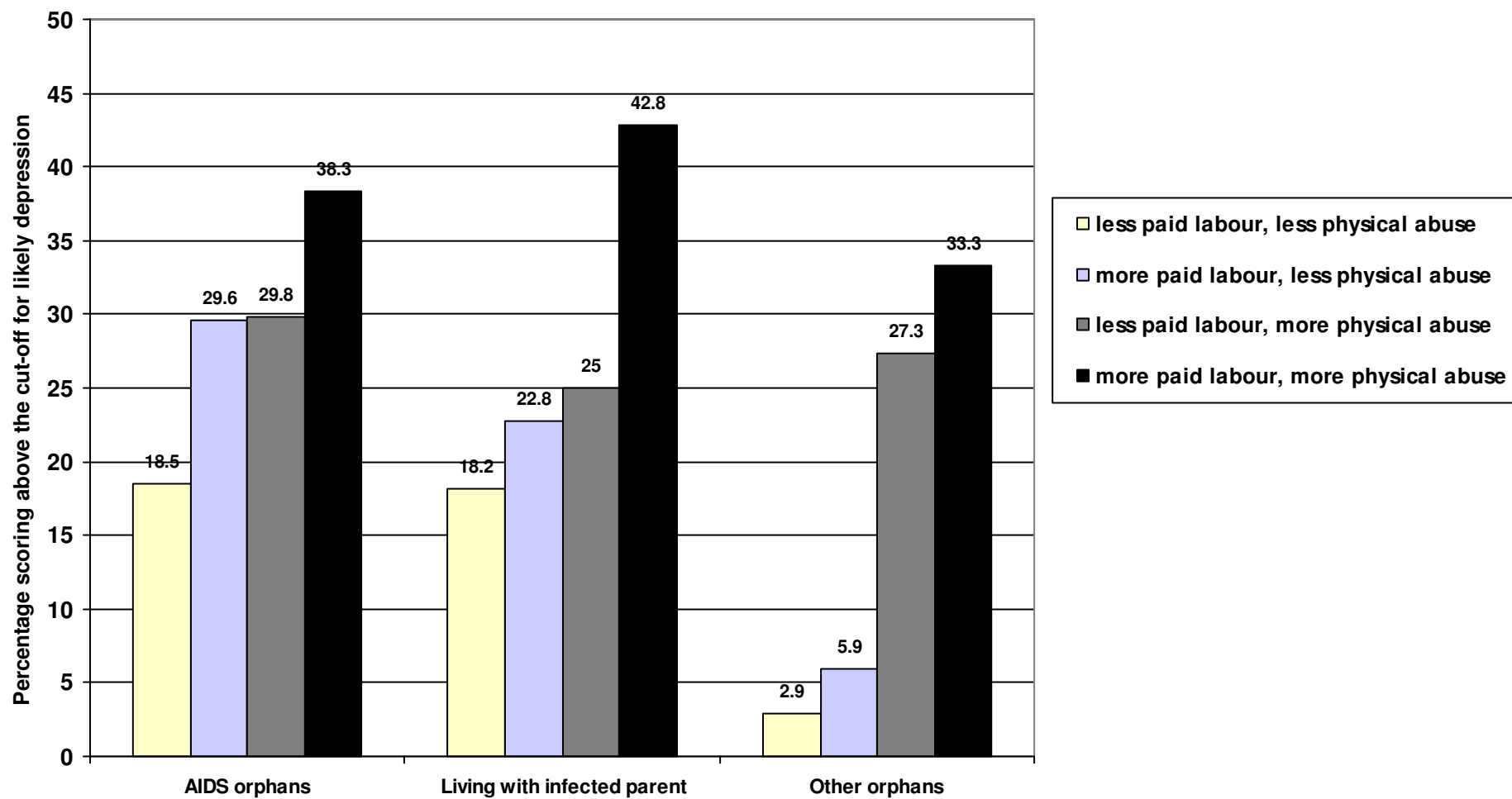
Graph 11.2: Interaction among scoring above the cut-off for likely depression, physical abuse and paid labour



Graph 11.3: Interaction among scoring above the cut-off for likely depression, neglect and orphanhood



Graph 11.4: Interaction among scoring above the cut-off for likely depression, orphanhood, paid labour and physical abuse



11.2 Reactive Attachment Disorder (RAD)

Two –way interaction effects

As stated earlier, definitive clinical cut-offs for use in the general population are not yet established for the RPQ that measured the RAD, therefore, in discussion with the author of the RPQ, it was decided to use the mean RPQ score across all the groups as a cut-off. The distribution of scores for the RPQ in the population is highly skewed (Minnis, 2007) and children who do not have diagnosis of Reactive Attachment Disorder have very low RPQ scores, therefore it is reasonable to assume that those scoring above the mean are likely to have Reactive Attachment Disorder.

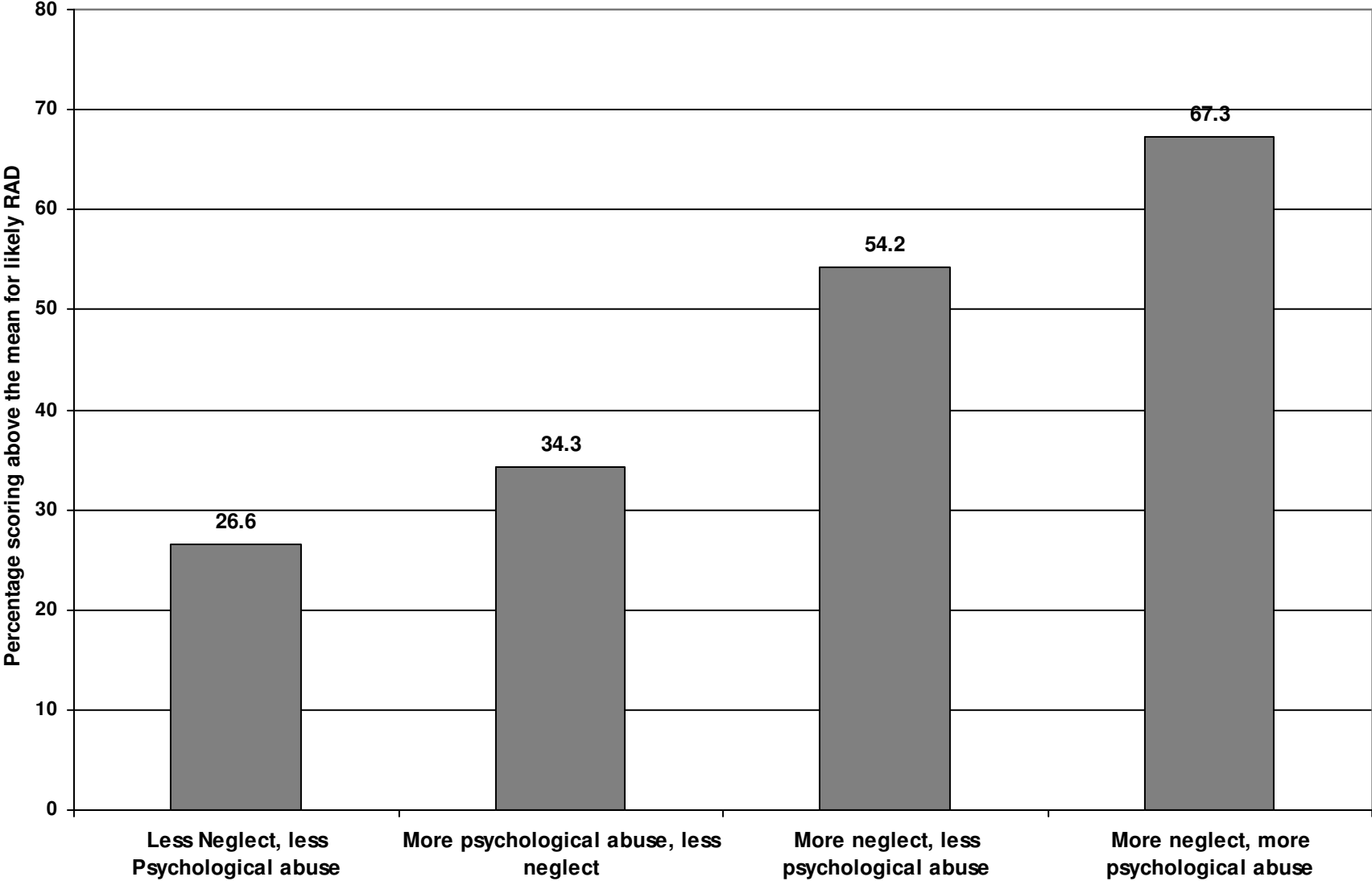
Three two-way interaction effects were identified concerning scoring above the mean for likely RAD. The first two-way effect showed that stigma was associated with likelihood of scoring above the mean for likely RAD. More than half (56%) of children reporting stigmatization and discrimination scored above the mean for likely RAD and 32% who were not stigmatized showed scoring above the mean for likely RAD ($\chi^2 = 15.302$, $p < .001$). Approximately 90%, 85%, 61% and 38% of children living with HIV/AIDS-infected parents, AIDS-orphaned, other-orphans, and non-orphaned children respectively were stigmatized ($\chi^2 = 58.766$, $p < .001$). Secondly, engagement in more paid labour and scoring above the mean for likely RAD showed a two-way interaction effect, with 51% of child labourers suffering scoring above the mean for likely RAD, compared to 45% of non-labourers. Significantly, more OVC are child labourers compared to comparison children ($\chi^2 = 51.846$, $p < .001$). The third two-way interaction effect showed that orphanhood was related to scoring above the mean for likely RAD (64%, 65%, 61% and 16% of children living with HIV/AIDS-infected parents, AIDS-orphaned, other-orphans, and non-orphaned children respectively, $\chi^2 = 59.268$, $p < .001$).

Three-way interaction effects

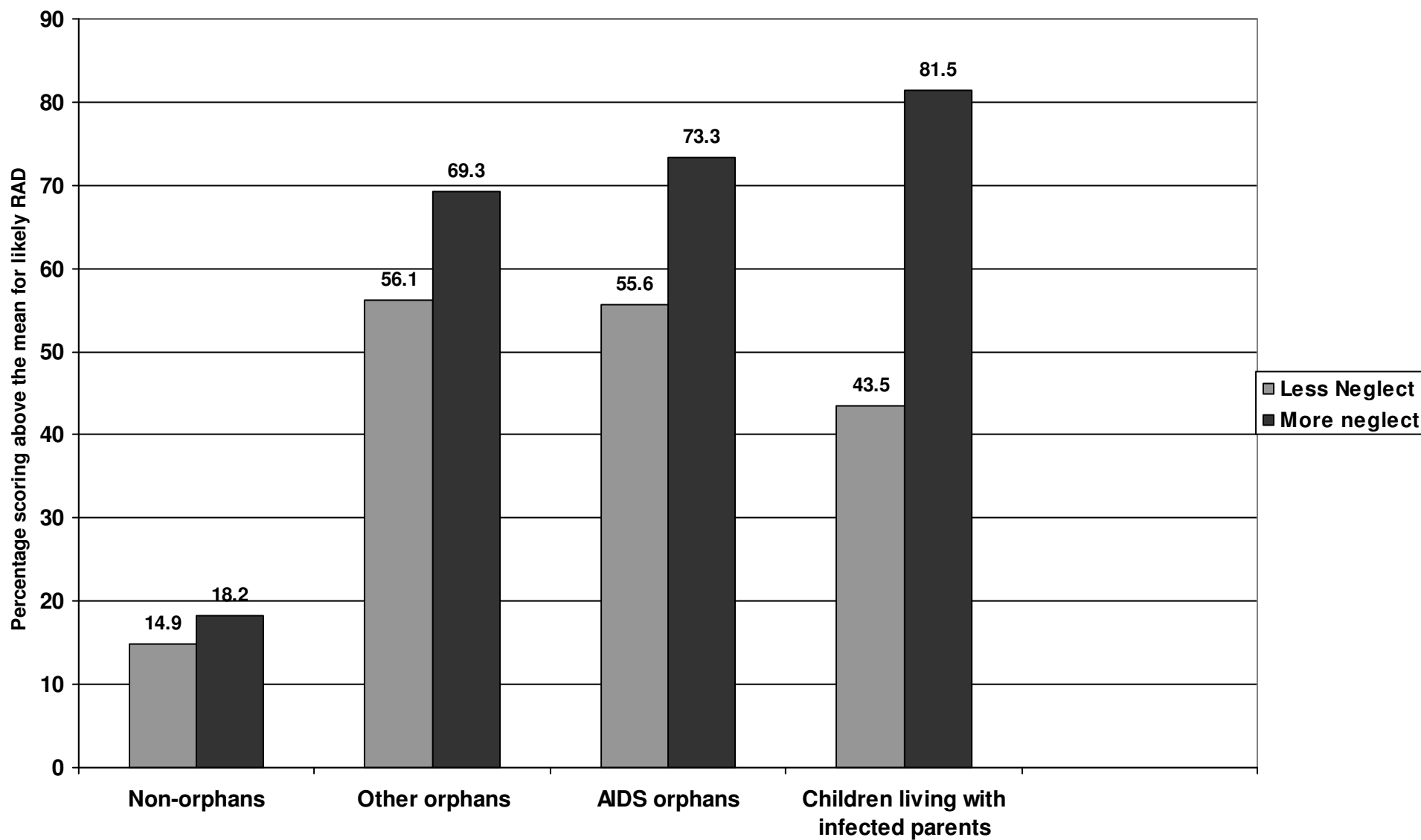
Log-linear analyses identified two three-way interaction effects related to scoring above the mean for likely RAD. First, there was an interaction between neglect, psychological abuse and scoring above the mean for likely RAD ($\chi^2 = 9.106$, $p < .01$). The interaction indicates that among all children, those who were less psychologically abused and less neglected form the group showing the lowest likelihood (26.6%) of scoring above the mean for likely RAD (Graph 11.5). When children experience more psychological abuse

and more neglect, the likelihood of scoring above the mean for likely RAD was heightened more than two-fold to 67.3%. More psychological abuse (with low /no neglect) independently increased the likelihood of scoring above the mean for likely RAD to 34.3% whilst more neglect (with low/no psychological abuse) heightened the risk to 54.2% (Graph 11.5). Second, there was interaction effect between scoring above the mean for likely RAD, neglect and orphanhood (Graph 11.6). Graph 11.6 shows that non-orphaned children who were less neglected are those displaying the lowest likelihood of scoring above the mean for likely RAD (14.9%). Children who are living with HIV/AIDS-infected parents and are often neglected are the group showing the highest likelihood of scoring above the mean for likely RAD (81.5%). For children orphaned by AIDS and other orphans, the likelihood of scoring above the mean for likely RAD was initially high (approximately 56%) with low neglect, and this increased to 69.3% and 73.3% for other orphans and children orphaned by AIDS respectively.

Graph 11.5: Interaction among Neglect, Psychological Abuse and risks of scoring above the mean for likely RAD



Graph 11.6: Interaction among scoring above the mean for likely RAD, neglect and orphanhood



11.3 Delinquency

Two-way interaction effects

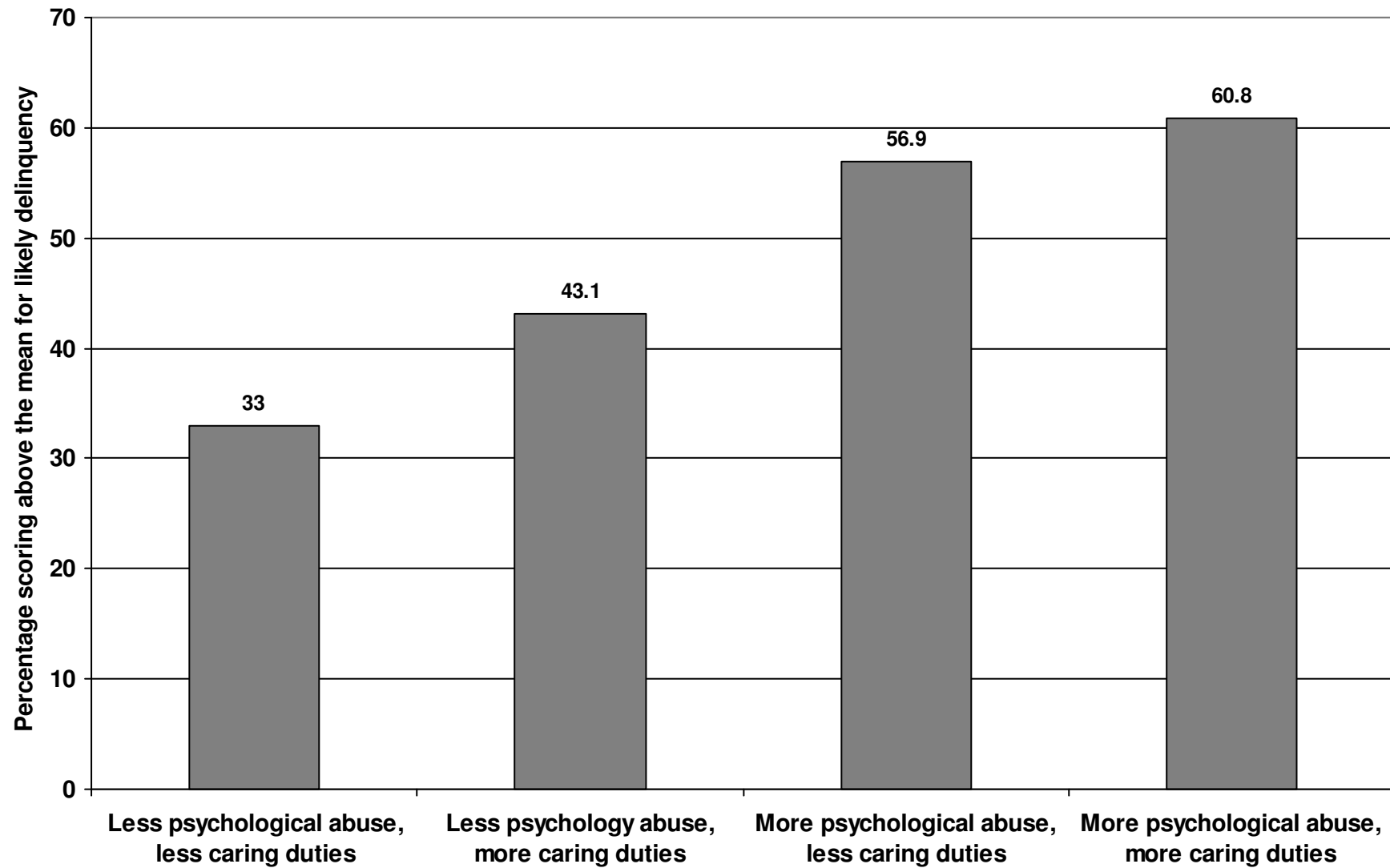
A number of two-way interactions were identified by log-linear analyses. However, only two factors (stigma and paid labour) were independently interacting with the likelihood of scoring above the mean for likely delinquency. A little over half (58%) of children reporting high levels of stigma showed scores above the mean for likely delinquency. Only one quarter (26%) of children who reported low levels of stigma showed scores above the mean for likely delinquency. The orphanhood groups differed significantly on their reported levels of stigma where OCV scored higher (90% of children living with HIV/AIDS-infected parents, 85.1% of children orphaned by AIDS and 61.2% other orphans) compared with comparison children (38%) [$\chi^2 = 58.766$, $p < .001$]. The other two-way interaction effect showed that engagement in more paid labour was associated with an increase in proportion of scoring above the mean for likely delinquency ($\chi^2 = 18.314$, $p < .001$). Among all the children, 67% of those engaged in more paid labour showed scoring above the mean for likely delinquency whilst only one third (37%) of those who reported less engagement in paid labour showed scoring above the mean for likely delinquency. However, children orphaned by AIDS and children living with HIV/AIDS-infected parents reported significantly more engagement in paid labour than other orphans and non-orphans ($\chi^2 = 51.846$, $p < .001$).

Three way interaction effects

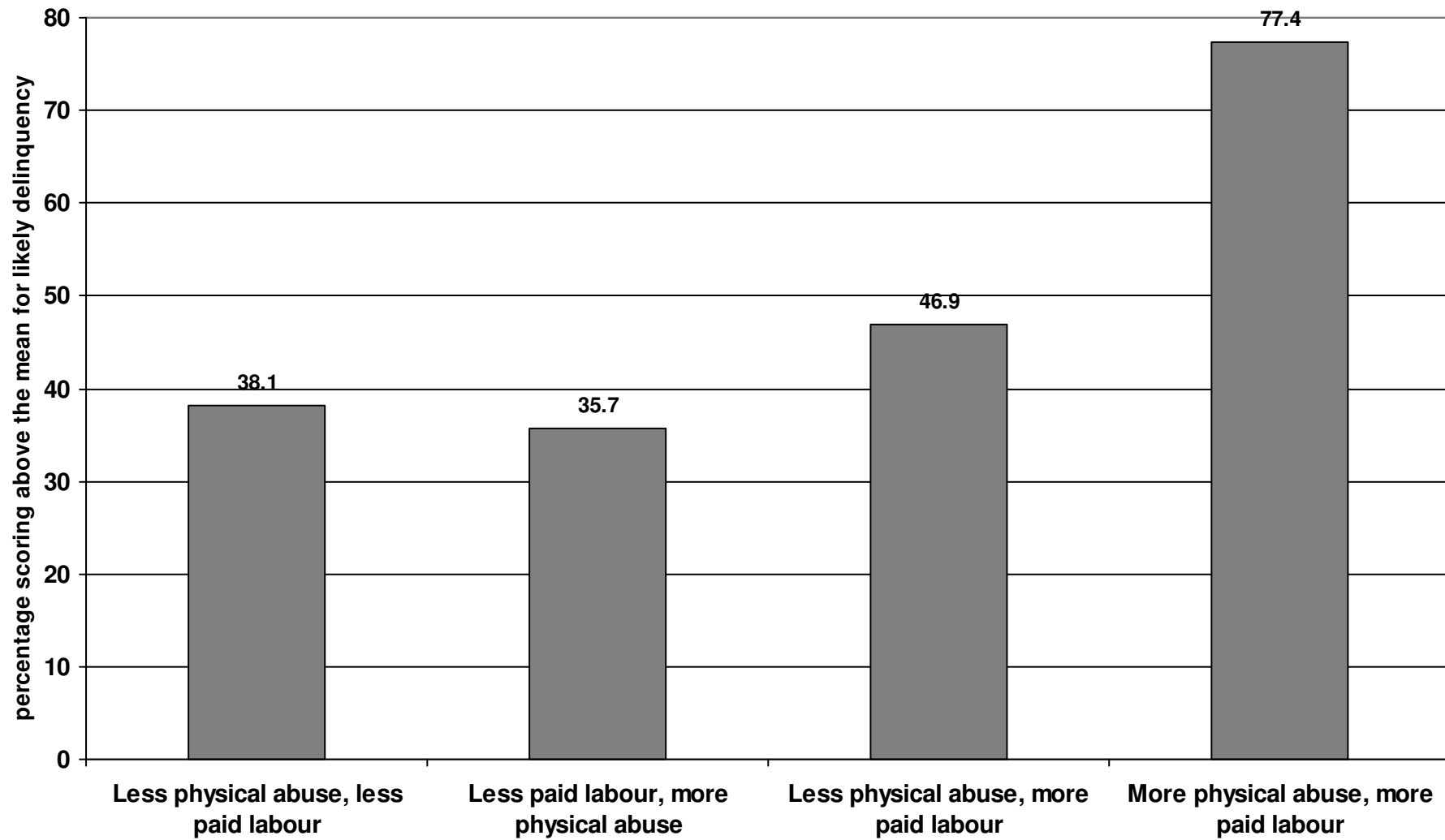
The log-linear analyses identified four three-way interactions in relation to proportion of scoring above the mean for likely delinquency. The first interaction involving psychological abuse and caring duties in relation to scoring above the mean for likely delinquency is presented in Graph 11.7. This indicates that among all children, those who reported more psychological abuse and more caring duties are the group with the highest likelihood of scoring above the mean for likely delinquency (60.8%). More psychological abuse (with less caring duties) increased the likelihood of scoring above the mean for likely delinquency to 56.9%. Graph 11.8 present the results of the interaction between physical abuse, paid labour and risks of scoring above the mean for likely delinquency ($\chi^2 = 12.593$, $p < .001$). The proportion scoring above the mean for likely delinquency was 38% among children who were less physically abused and engaged in less paid labour, but this doubled to 77% in the presence of more physical abuse and more paid labour. The third three-way interaction presented in Graph 11.9 show that only roughly one-fifth

(17.4%) of children who reported less stigma and less paid labour showed scores above the mean for likely delinquency. The proportion of scoring above the mean for likely delinquency was increased more than three-fold for both more paid labour and less stigma (66.7%), and more stigma and more paid labour (67.1%). The final three-way interaction (Graph 11.10) indicates that low stigma and low physical abuse increase the likelihood of scoring above the mean for likely delinquency to 30% and this doubles to 66% for more stigma and more physical abuse.

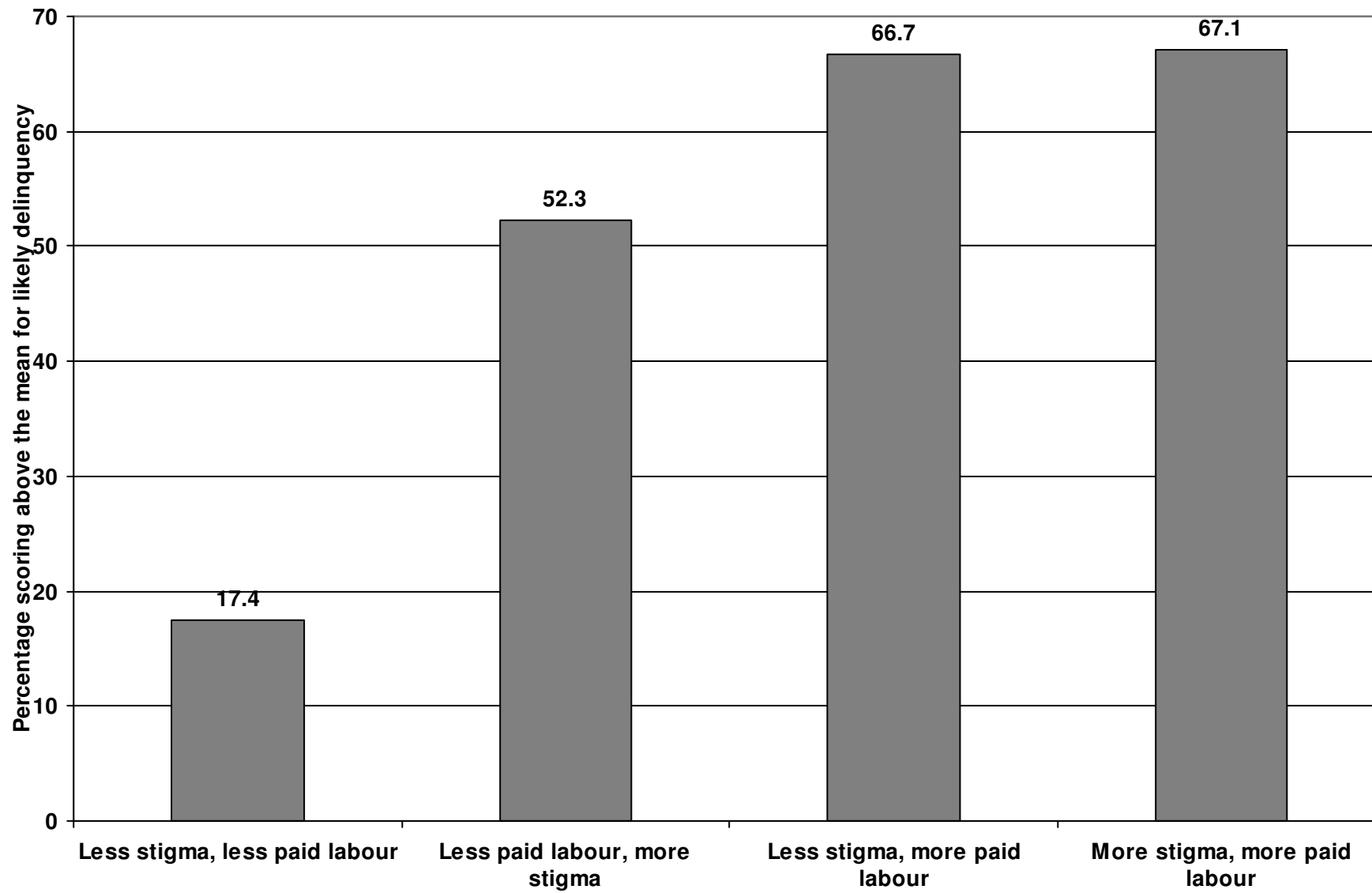
Graph 11.7: Interaction among scoring above the mean for likely delinquency, psychological abuse and caring duties



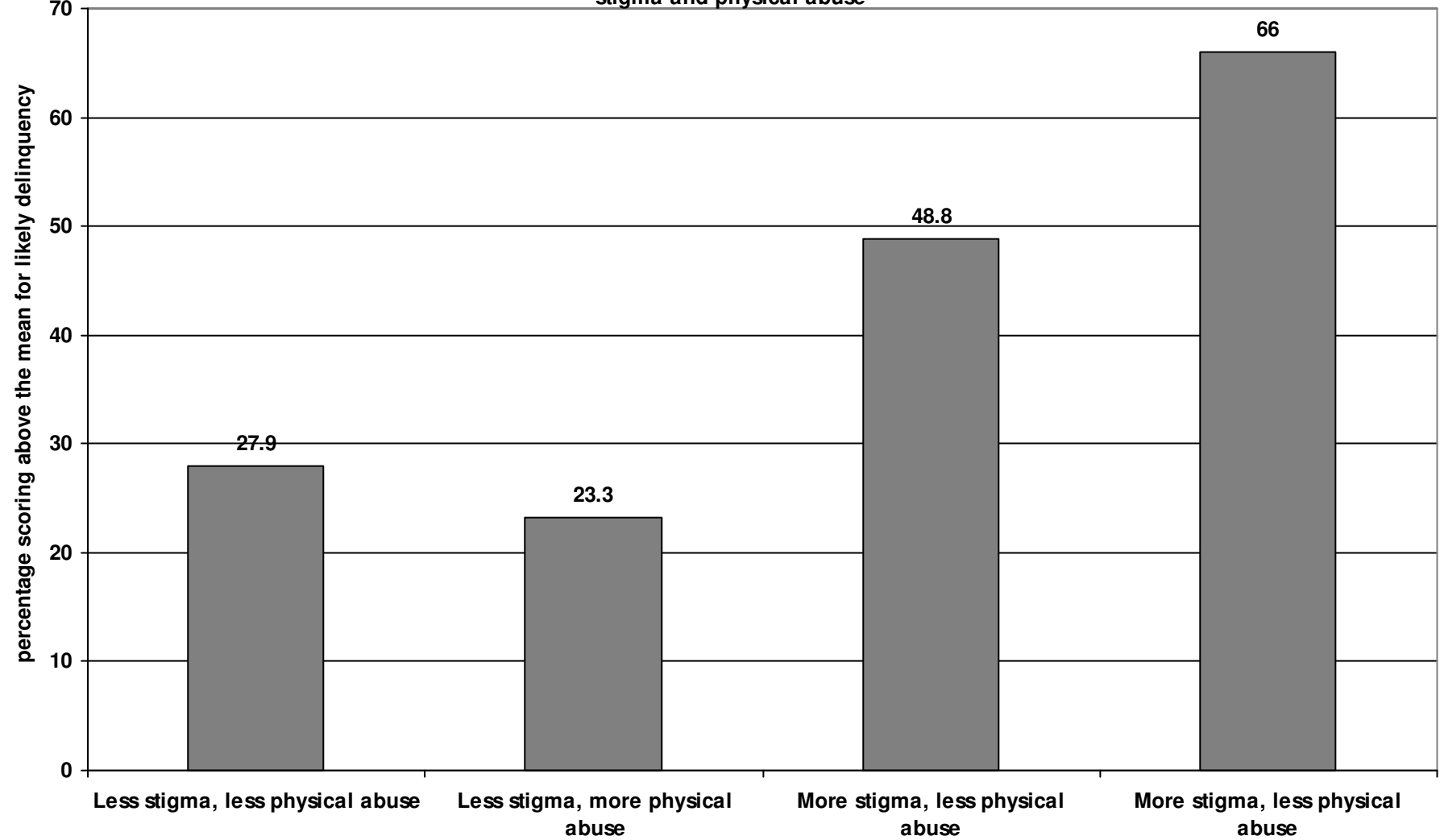
Graph 11.8: Interaction among scoring above the mean for likely delinquency, physical abuse and paid labour



Graph 11.9: Interaction among scoring above the mean for likely delinquency, stigma and paid labour



Graph 11.10: Interaction among scoring above the mean for likely delinquency, stigma and physical abuse



11.4 Self esteem

Two-way interaction effects

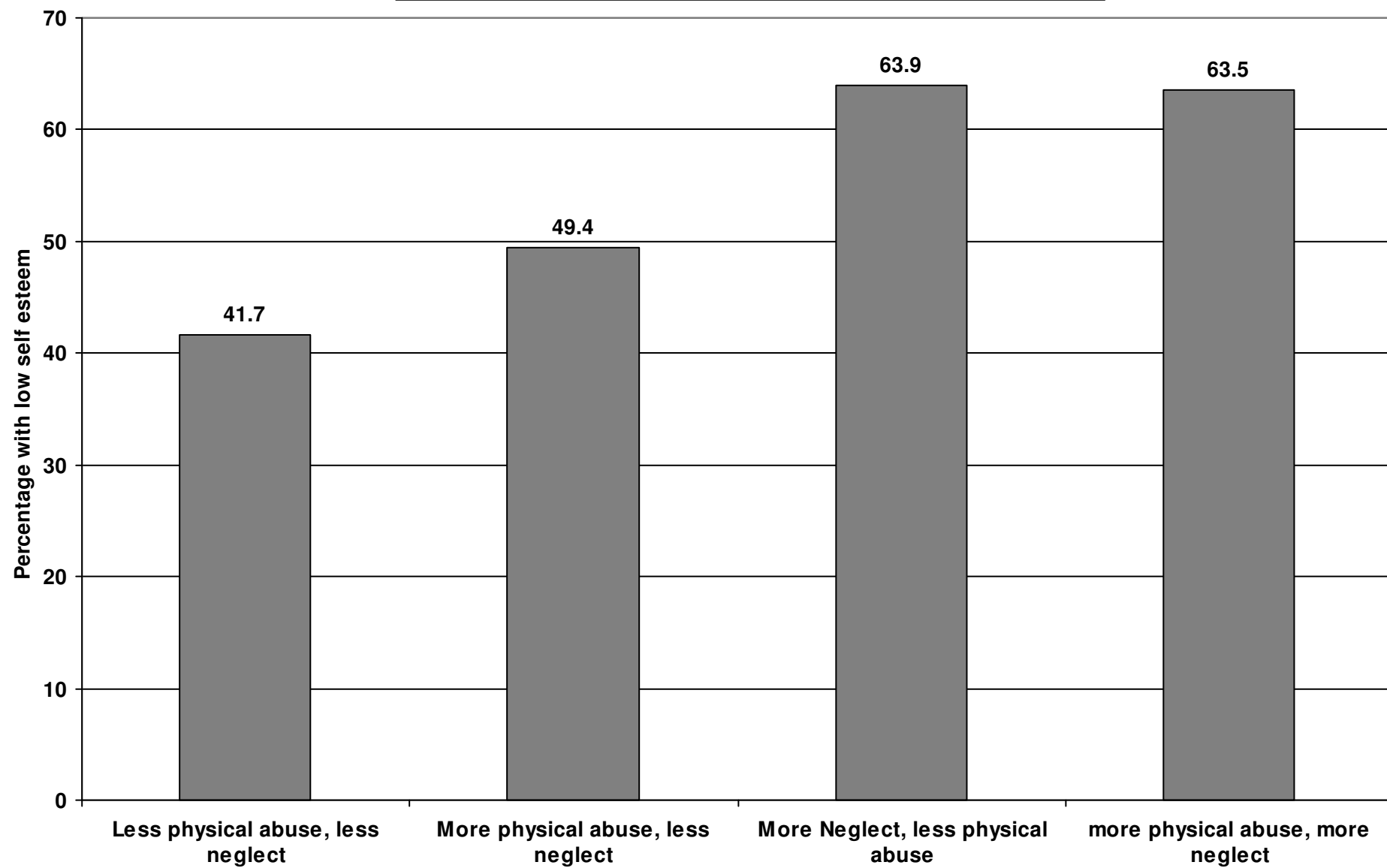
Three two-way interaction effects in relation with lower self-esteem were identified by log-linear analyses. These are self esteem and caring duties ($\chi^2 = 10.382$, $p < .001$), self esteem and engagement in paid Labour ($\chi^2 = 12.852$, $p < .001$) and self esteem and stigma ($\chi^2 = 18.030$, $p < .001$). Among all children, 65% of those who engage in more caring duties scored within low self esteem whilst 40.7% of those engaged in less caring duties showed low self esteem. Unfortunately and unreassuringly, 78% of children living with HIV/AIDS-infected parents, 67.6% of children orphaned by AIDS, 47.8% of other orphans and 34% of non-orphans reported being engaged in more caring duties ($\chi^2 = 46.574$, $p < .001$). The second two-way interaction indicate that 72.3% of children who were engaged in more paid labour showed low self esteem whilst 44.2% of those reporting low engagement in paid labour showed low self esteem. However, significant difference was observed on paid Labour where 50% of children living with HIV/AIDS-infected parents, 51.4% of children orphaned by AIDS, 37.3% of other orphans and only 6.4% of non-orphans reported being engaged in more paid Labour ($\chi^2 = 51.846$, $p < .001$). The final two-way interaction shows that children who reported high levels of stigma have 65.8% proportion of low self esteem. Unreassuringly, the orphanhood groups differed significantly on their reported levels of stigma where OCV scored higher (90% of children living with HIV/AIDS-infected parents, 85.1% of children orphaned by AIDS and 61.2% other orphans) compared with comparison children (38%) [$\chi^2 = 58.766$, $p < .001$].

Three-way interaction effects

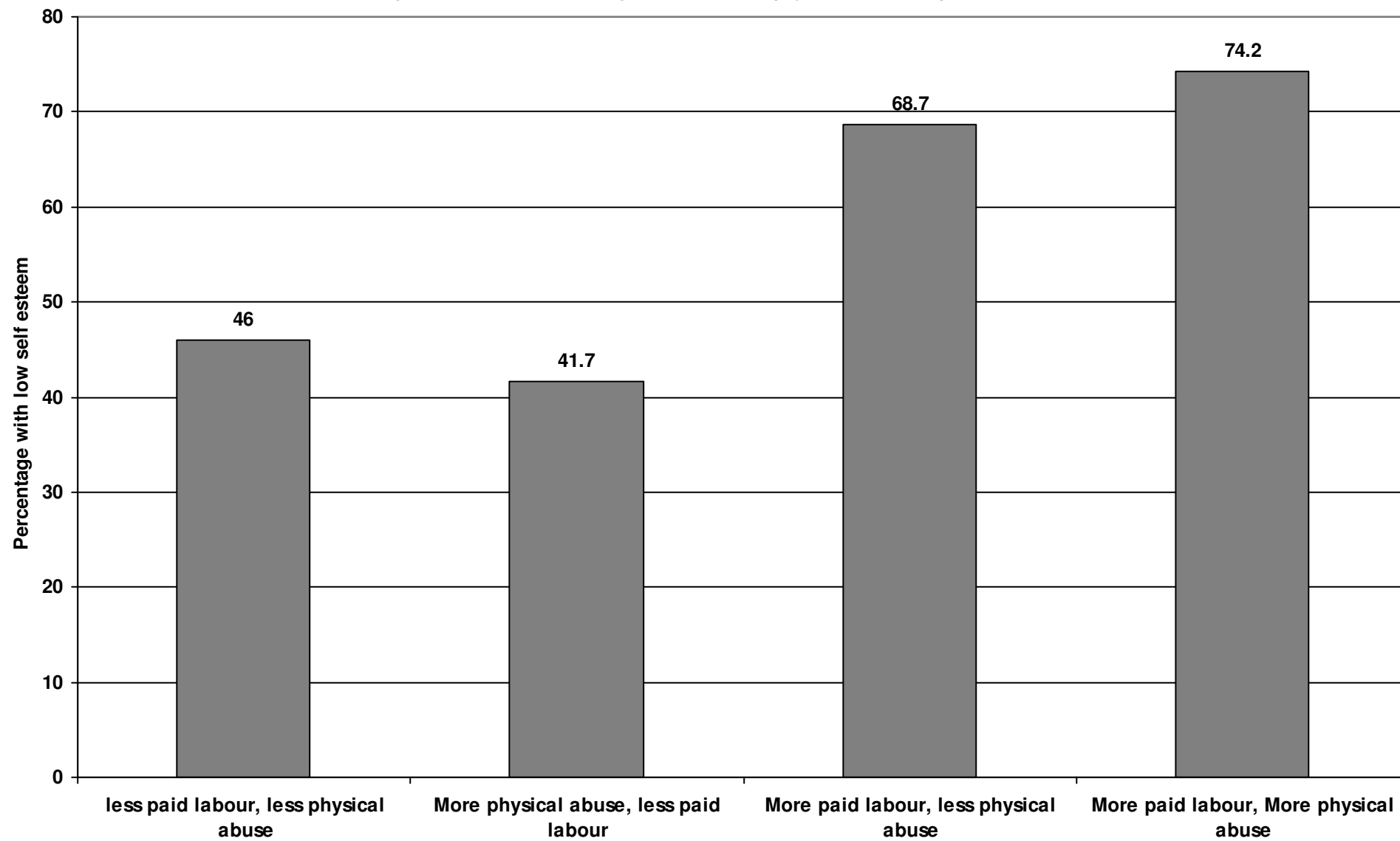
Log-linear analyses identified three three-way significant interactions in relation to self esteem. The first three-way interaction ($\chi^2 = 11.370$, $p < .001$) involving neglect, physical abuse and self esteem is presented in Graph 11.11. The interaction shows that children who reported more neglect form the group with the highest proportion of low self esteem (64%) whether they had less or more physical abuse. Self esteem was generally low among the children as 41.7% who reported less neglect and less physical abuse showed proportion of low self esteem. Graph 11.12 shows the second three-way interaction involving physical abuse, paid labour and self esteem ($\chi^2 = 4.840$, $p < .05$). Low self esteem was 46% among children who reported low physical abuse and low paid labour, but this was heightened to 74.2% for more physical abuse and engagement in more paid labour. The third three-way interaction effect ($\chi^2 = 8.160$, $p < .01$) involves self esteem and paid labour for the different

orphanhood categories, presented in Graph 11.13. Engagement in more paid labour itself (with less physical abuse) has 68.7% likelihood of increased low self esteem. There is high level of low self esteem among children living with HIV/AIDS-infected parents (72%) and this was increased to 84% for more engagement in paid labour. Among other orphans, proportion with low self esteem was 35.7% for less paid labour, but this nearly doubles to 68% for more paid labour. Finally, for children orphaned by AIDS the level of low self esteem was 58.3% with less paid Labour and this was increased to 76.3% when children engaged in more paid Labour.

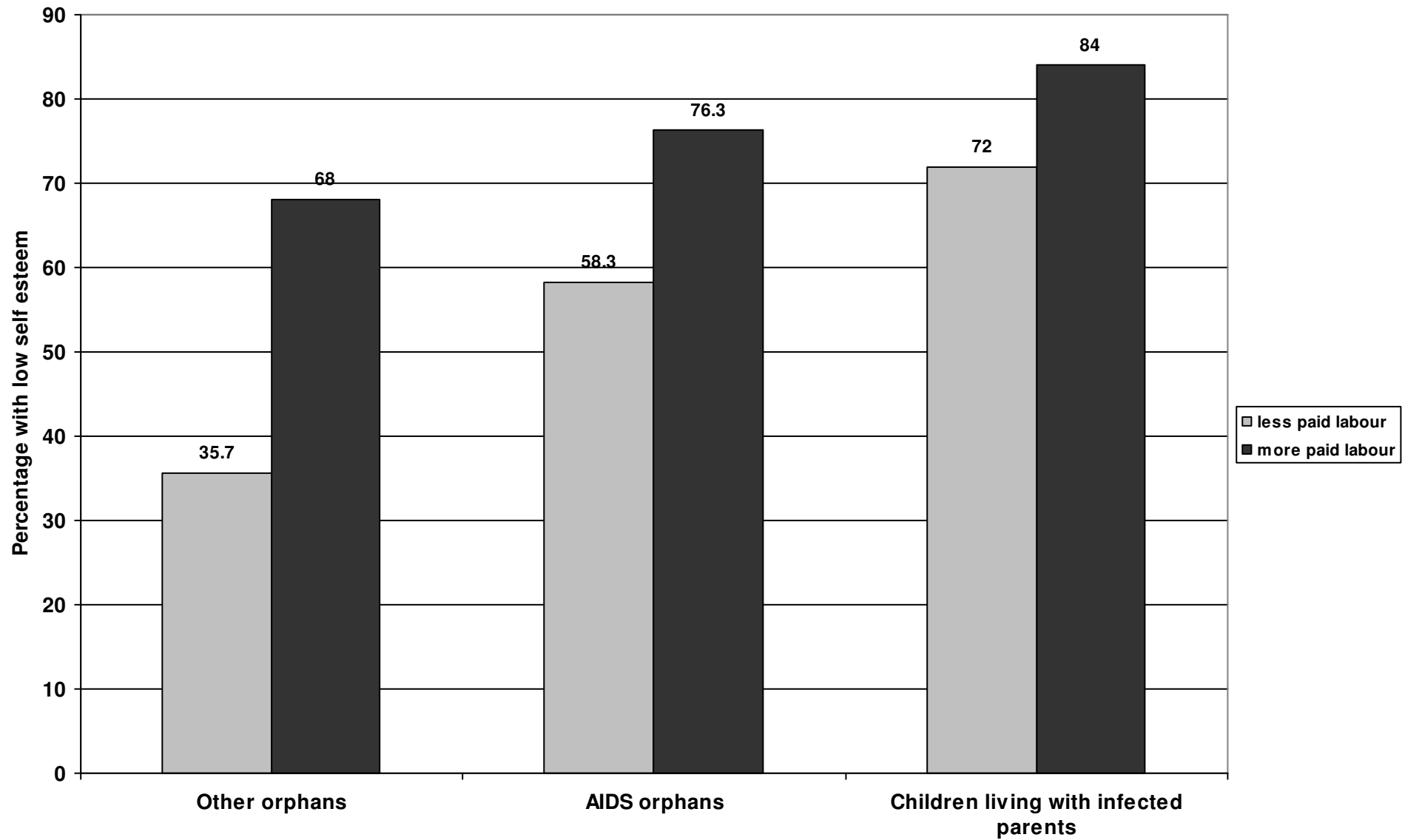
Graph 11.11: Interaction between physical abuse, neglect and self esteem



Graph 11.12: Interaction among low self esteem, physical abuse and paid labour



Graph 11.13: Interaction among paid labour, orphanhood and low self esteem



11.5 Discussion

Earlier analyses in the present thesis demonstrated two key findings. First, it was found that children affected by HIV/AIDS pandemic are at heightened risk for psychological difficulties compared with other children. Second, it was noted that several risks and protective variables at both the family and community levels (such as social support, child labour, abuse and maltreatment, perceived socioeconomic status, stigma and discrimination, etc) strongly mediate the significant associations between orphanhood status and children's psychological wellbeing. The present analyses aimed to investigate the simultaneous, mutual, additive and interactive relationships between the identified risk factors and their cumulative effects on psychological wellbeing using hierarchical log-linear backward elimination.

The present findings indicate overall strong interactive effects between HIV/AIDS related stigma, engagement in paid labour, physical abuse, neglect, orphanhood, and depression. The interactive, cumulative effect of engagement in more paid labour and more physical abuse heightened the risks for depressive symptoms from 38% to 66%. Similarly, the cumulative effect of two risk factors (stigma and more physical abuse) doubled the likelihood of depression symptoms. Furthermore, being an OVC and experiencing more neglect increased the likelihood for depression nine-fold. The findings suggest that while some risk factors for depressive disorders are tied to the HIV/AIDS pandemic (e.g. stigma and orphanhood), much of the depression found among children in families affected by HIV/AIDS are explained by contextual factors such as paid labour, physical abuse and neglect. Thus the interactive effects of exposures and experiences unique to HIV/AIDS and contextual factors create a negative, heightened (cumulative) risk for depression. Specifically, children affected by HIV/AIDS that are often stigmatized, neglected, physically abused and engaged in more paid labour are at highest for depression. The present findings echo conclusions by earlier investigators (Ritchie et al 2009, Alim et al 2006, Collishaw et al 2007) that child abuse of any kind and traumatic exposures are key interactive factors for depression among children. Furthermore, the cumulative, additive effects of the various risk factors for depression highlighted in the present analyses further underscore a limitation noted in earlier studies that examined potential risk and protective factors in isolation among AIDS orphaned children. Such earlier studies failed to capture potential interactions between risk factors that could heighten symptoms of depression (Cicchetti & Lynch 1993, Cluver et al 2007) as demonstrated in the present study.

This study is the first to have demonstrated heightened symptoms of RAD among children affected by HIV/AIDS. The present analyses highlighted the interactive and cumulative effects of identified mediating risks factors for RAD. The results demonstrated strong interaction effects between neglect, psychological abuse, orphanhood and RAD for children. Experience of more neglect and psychological abuse increased the risks for symptoms of RAD from 26.6% to 67.3%. Similarly, experience of neglect and living with HIV/AIDS-infected parents increased the likelihood of RAD five-fold. Consistently RAD is thought to be associated with maltreatment in the literature (Boris et al 1998) and in the psychiatric classification systems (ICD-10 and DSM-IV).

Furthermore, experiencing neglect heightened the proportion of likely RAD three-fold for children orphaned by AIDS and orphans of other causes. These findings point to the evidence that compared with non-orphans, orphans in general and children affected by HIV/AIDS form the vulnerable group for RAD. Specifically, children who are living with HIV/AIDS-infected parents and are often psychologically abused and neglected are at the highest risk for RAD. This is interesting because most previous research on RAD has been in institutionalised samples (Minnis et al. 2007). This finding demonstrates that neglect may be more important than care-giving context and orphanhood for RAD.

Delinquency symptoms were found to strongly interact with stigma, psychological abuse, caring duties, physical abuse and engagement in paid labour. The interaction between physical abuse and paid labour heightened the proportion of delinquency symptoms two-fold among the children. The cumulative effect of stigma and either engagement in paid labour or physical abuse substantially increased the likelihood of delinquency symptoms to approximately 67%. Clearly, the vulnerability of children affected by HIV/AIDS to delinquency symptoms is explained by the interactive effects of stigma and contextual risk factors (physical abuse and paid labour), and sometimes contextual risk factors alone. This provides evidence that interventions that target one risk factor, say, stigma would not be effective in alleviating psychological difficulties found among children affected by HIV/AIDS. It is therefore suggested that future interventions are multifaceted, addressing issues unique to HIV/AIDS as well as contextual factors at several levels including the family and community.

The analyses also indicate that physical abuse, neglect, paid labour and orphanhood strongly interact with low self esteem. Low self esteem was initially high (72%) among children living with HIV/AIDS-infected parents, and this was only marginally increased to 84% for more reported paid labour. The interaction between paid labour and orphanhood was profound for other orphans, where the proportion of low self esteem was heightened nearly two-fold for paid labour. The interaction between two risk factors, more paid labour and more physical abuse increased risks for low self esteem to 74%. Similarly, more physical abuse and more neglect increased the proportion of low self esteem to 64%. The evidence also suggests that low self esteem was generally high (approximately 40%) among the sample even in the presence of less contextual risk factors.

In conclusion, the present evidence highlighted the interactive, cumulative, co-occurrence of contextual factors and HIV/AIDS-unique exposures to create heightened vulnerabilities for psychological difficulties among children. This underscores the urgency of shifting public interventions away from addressing single risk factors of HIV/AIDS (e.g. Stigma) to more broadly based strategies that also address the context within which children affected by HIV/AIDS find themselves. Such interventions, it is suggested, will help to alleviate these risks factors and enhance the mental health of children.

CHAPTER TWELVE - IMPLICATIONS OF RESEARCH FINDINGS, RECOMMENDATIONS AND CONCLUSIONS

The present research has revealed some interesting findings and contributed new knowledge regarding the mental health of children affected by HIV/AIDS compared to other children in Ghana. These are important additions to the growing international literature on the wellbeing of orphans and vulnerable children within the context of HIV/AIDS epidemic. This chapter highlights the key research findings and outlines the practical policy implications of the conclusions drawn from the study. It then sets out some recommendations for future investigations since clearly there is urgent need for further research on some of the findings emanating from the present study. The chapter concludes with discussions of the major limitations and strengths of the study.

12.1 Summary of key research findings

- One of the key findings from the present study is that OVC (children living with HIV/AIDS-infected children, AIDS orphaned children and orphans of causes other than AIDS) have significantly more psychological distress than comparison children who were non-orphans. It was established that this significantly higher psychological difficulties found on depression, peer problems, delinquency, reactive attachment disorder and self esteem among OVC persists even when relevant socio-demographic factors were controlled. Conduct problems were generally high but showed no group differences according to the children's self reports just as was found in other investigations (Atwine et. al 2005, Poulter 1996, Kaggwa & Hindin 2010). Hyperactivity was generally low but showed significant orphanhood differences where children orphaned by AIDS and children living with HIV/AIDS-infected parents scored higher than comparison children.
- Comparing the children on proportions that met clinical cut-off points for psychological symptoms, significant numbers of children living with HIV/AIDS-infected parents showed symptoms for conduct problems (38%), peer problems (62%) and hyperactivity (16%) than the other children. The findings further indicated that

significant proportion of the OVC exhibited symptoms for depression (approximately 63%) compared with 7% among the comparison group.

- The findings suggest that consistent with previous observations informants (parents and caregivers) gave higher ratings for children on externalizing problems and lower on internalizing problems, and vice versa when the children's self reports were analysed. Additionally, low correlations between children's self reports and informant's ratings on total difficulties, depression and hyperactivity were found whilst no significant correlations were found for scores on peer problems, conduct problems and prosocial behaviours. These findings suggest that children and their informants have diverse yet complementary perspectives on psychological outcomes.
- Another key finding was that there were differences on perceived SES but not objective SES among the various groups in the present study, and that perceived SES is a more sensitive predictor of adolescent psychological outcomes than both the traditional objective SES that uses parental educational levels and occupation, and the MAS that uses material possessions and properties. It was also found that perceived SES, as an indicator of how a child thinks (self-perception) about their problems and situation, is one of the routes through which the effect of being an AIDS orphan affects psychological status.
- The findings demonstrated that the significantly high (approximately 83%) perception of the existence of HIV/AIDS related stigma was endorsed by the entire sample (children and carers). However, only AIDS orphaned children and children living with HIV/AIDS-infected parent experience significantly higher levels of HIV/AIDS related stigma.
- The findings indicate that stigma, when controlled for, eliminated previously strong associations between children living with HIV/AIDS-infected parents and psychological symptoms of delinquency, hyperactivity, depression and anxiety, self esteem, peer problems, reactive attachment disorder. Among AIDS orphaned children, stigma eliminated associations with psychological outcomes of delinquency, peer problems and self esteem whilst it significantly reduced association with symptoms of

depression, hyperactivity and reactive attachment disorders. Stigma completely eliminated the significant differences between orphanhood groups; strong evidence that stigma is an important mediating factor in mental health outcomes for AIDS orphan and children living with HIV/AIDS-infected parents.

- children orphaned by AIDS and children living with HIV/AIDS-infected parents reported more domestic violence than other children. Some form of maltreatment within the household was reported by approximately 90% of OVC, and it was significantly higher among OVC compared with comparison children. The findings also established that child maltreatment strongly mediates the association between orphanhood status and psychological difficulties. Child maltreatment completely eliminated the significant differences between the orphanhood groups on delinquency, hyperactivity, self esteem, peer problems and reactive attachment disorders.
- Significant differences between the orphanhood groups on domestic chores and responsibilities were found, where children affected by HIV/AIDS and other orphans (OVC) reported engaging in significantly more domestic chores and responsibilities than comparison children. Furthermore, controlling for child labour eliminated many of the psychological symptoms among OVC suggesting that child labour is an important risk factor that has strong mediating effect on mental health problems among orphans and children affected by HIV/AIDS. When controlling for child labour, the strong associations between children living with HIV/AIDS-infected parents and psychological symptoms of delinquency, hyperactivity, depression and anxiety, self esteem, peer problems and reactive attachment disorder were eliminated. Among AIDS orphaned children, accounting for child labour eliminated associations with psychological outcomes of delinquency, peer problems and self esteem. Similarly, controlling for child labour eliminated associations with symptoms of low self-esteem, delinquency, peer problems, reactive attachment disorders and hyperactivity.
- An additional key finding was that differences exist between the orphanhood groups on perceived social support from the family but not from friends and significant others. Comparison children reported significantly higher perceived social support from the family than children affected by HIV/AIDS indicating that whilst the family may be

the main source of emotional support for comparison children that was not the case with the latter. The findings also indicated that controlling for perceived social support eliminated the strong associations between children living with HIV/AIDS-infected parents and psychological symptoms of delinquency, hyperactivity, depression and anxiety, low self esteem, peer problems and reactive attachment disorder symptoms. Among children orphaned by AIDS, controlling for perceived social support eliminated psychological outcomes of delinquency and low self esteem. Finally, controlling for perceived social support eliminated symptoms of low self-esteem, delinquency, peer problems, hyperactivity, depression and reactive attachment disorder symptoms among children orphaned by causes other than AIDS. These findings provide strong evidence that social support is an important mediating factor in mental health outcomes for orphaned and children affected by HIV/AIDS in Ghana.

- The findings further suggest that the interaction effects of both HIV/AIDS unique exposures and experiences (such as stigma and orphanhood), and largely contextual factors (paid labour, physical abuse, psychological abuse and neglect) create negative, heightened (cumulative) risk for the higher psychological difficulties found in children affected by HIV/AIDS. The cumulative effect of two risk factors (stigma and more physical abuse) increased the likelihood of depressive symptoms from 23% to 58% whilst being an OVC and experiencing more neglect increased the likelihood for depression symptoms nine-fold from 7.5% to approximately 68%. Similarly, experience of neglect and living with HIV/AIDS-infected parents increased the likelihood of RAD five-fold from 12.9% to 81.5%. The co-occurrence of physical abuse and paid labour heightened the proportion of delinquency symptoms from 38% to 77% among the children. Furthermore, the interaction between paid labour and orphanhood increased the proportion of low self esteem nearly two-folds from 35.7% to 68%.
- Finally, the findings on the interaction between various risk and protective factors impacting mental health outcomes provided support for the relevance and applicability of the ecological model. It highlighted the interactive and interdependence nature of contextual variables on psychosocial problems among OVCs.

12.2 Limitations and strengths of the study

Although the study attempted to control all possible weaknesses in earlier research, some caveats are noted. This section is therefore critical in placing the findings in the context of the study limitations and challenges.

First, the study used retrospective self-reports to collect demographic, contextual and outcome data for analyses. Self-reports represent one of the most common methods of assessing children's psychological wellbeing outcomes. The self-report nature of data collected raises issues of reliability and validity of results as they made the study susceptible to potential recall, selective reporting and social desirability biases. In this regard one may argue that children may recall very accurately current and recurrent adjustment difficulties but not those that they experienced in the distant past due to difficulties in recall. Disclosure biases are worth mentioning here as there was also the possibility that children might over-report what they consider to be socially desirable responses (French, Vedhara, Kaptein & Weinman 2010) while under-reporting those that are undesirable especially considering the sensitive nature of the area of research. However, the present study tried to limit the influences of the retrospective self-report nature of the study by limiting questionnaire items to the past six months.

Additionally, the sensitivity of the items on psychological outcomes, HIV/AIDS and related variables where possible were modified by using child friendly words and terms without compromising the core purpose of the research. Recent evidence suggests that children's responses on sensitive questions on HIV/AIDS are accurate and reliable (Cluver, Gardner & Operario 2007). It is also noted that any over-reporting and under-reporting, if occurred, will spread across the entire sample such that it will not affect the findings of the present study significantly. It may be contested that children already stigmatised by HIV/AIDS may be more likely to under-or-over-report certain information compared to non-OVC. However, the fact that the findings detailed in this study are similar to a previous small preliminary study conducted in the same research context indicates that the findings and conclusions of the present study are reliable and replicable (Doku 2009). It was also hoped that the total assurance of anonymity and confidentiality with which the study was conducted would yield accurate responses. Some investigators suggested that social bias in research is reduced

significantly if anonymity is guaranteed fully (Cluver, Gardner & Operario, 2007). It is also worth noting as a limitation the fact that the study had to abandon the initial systematic sampling strategy in favour of total sampling.

Clearly, despite the stated challenges, self-reports as used in the present study seems to be one of few feasible ways of assessing psychological wellbeing outcomes in surveys that involve large number of participants. Earlier investigations on children affected by AIDS utilised self-reports from either the children or their parents. The present study employed multiple informant approach to strengthen the reliability and validity of the results obtained. In epidemiologic studies of child psychiatric disorders, the rationale is that each source of information – the parent/caregiver or the child – might have a unique perspective and that a complete picture would not be possible unless each was taken into account. By collecting reports from both sources, it is expected that mental health outcomes of OVC could be more accurately and reliably determined. An inherent feature of multiple informant data is that one anticipates discordant reports just as found in the present study. If there is no discordance, the additional reports provide no new information.

The second limitation of the present study is related to the cross-sectional nature of the research design used. In the present study, exposures to orphanhood and contextual factors as well as mental health outcomes among children were assessed at the same time. The nature of this design only allowed the observation of risk factors and exposures at a single capture and their association with mental health outcomes. It, therefore, becomes difficult to tell whether the identified risk factors and HIV/AIDS exposures precede the observed mental health distress or vice versa. The nature of cross-sectional design is therefore limited in the extent to which one can infer causal relationships between identified variables (ie, orphanhood, risk and protective factors, and mental health). However the observations of strong associations between these variables make it possible to conclude that orphanhood and associated risks factors are potential contributing factors to mental health among children affected by HIV/AIDS. Only prospective longitudinal designs could definitively determine causality.

Furthermore, the strong mediating roles of several risk and protective factors found in the present study should not be taken as causal relationships. It only strongly suggests that these factors have the potential of improving or worsening children's mental health. For example it

can not be concluded with certainty that eliminating stigma will have a causal effect of alleviating existing mental health distress among children affected by HIV/AIDS. Cross-sectional designs are limited in identifying stages of development when children are most susceptible to the influences of HIV/AIDS in their parents. In this regard it is difficult to conclude with certainty the mediating effects of the identified risks and protective factors, and the contribution of each at different stages of the life-course of the children. Longitudinal study would have been ideal to capture the stages during which children are most at risk for psychological distress from parental HIV/AIDS-infection and subsequent death. Additionally, because data was collected at one point in time, the study was limited in its capacity to highlight life-course impacts of the exposures and risk factors on mental health among children affected by HIV/AIDS. It however provides indicative areas that could be targeted in future intervention programs and research.

Earlier investigations on children affected by AIDS typically compare and examine children orphaned by AIDS and non-orphans. However, the present study, unlike earlier investigations, included children who were living with HIV/AIDS-infected parents. This allowed the study to highlight the impact of parental HIV/AIDS-infection on children's mental health.

Thirdly, the present study was quantitative and utilised structured questionnaires. As typical of any structured measurements, the study is limited to only those mental health outcomes that were predetermined and included in the design of the study. The design did not allow for other mental health outcomes to be added in the course of data collection. Similarly quantitative designs using structured measurement tools also risk the omission of risks and protective factors that were not part of the pre-designed questionnaires. The present study made every effort to include as many relevant mental health outcomes as well as risk and protective factors as possible. The present study is the first to address several risks and protective factors in a single study. It is also the first to examine RAD among children affected by HIV/AIDS. However, despite these efforts, questionnaire items must not be too long in order to encourage participation and generate accurate responses. Therefore, the study can not be said to have addressed all issues that concerns mental health of children affected by HIV/AIDS.

Fourthly, the unavailability of blood serology tests of parental HIV/AIDS status compelled the study to rely on self-reported cases of HIV/AIDS-infections. This method of parental

HIV/AIDS status assessment is spurious because just like many other African societies, in Ghana people are not open about HIV/AIDS and HIV/AIDS testing is very low in Ghana, hence there was the possibility that some of the families classified as comparison group were in fact HIV/AIDS sufferers. Additionally, the HIV/AIDS status of the children themselves was not taken into consideration although there is evidence that this might impact and compromise children's mental wellbeing (Cluver, Gardner & Operario 2007). There is a 1.8% of HIV/AIDS prevalence among 10-19 year olds in Ghana. Although there is no data on the prevalence rate within the district, perhaps it might be higher than the general population because the district has the highest HIV/AIDS prevalence. As those whose parents are infected with HIV/AIDS or have died of AIDS may well vertically infect their children it should be understood that some percentage of the sample might be infected.

The study also relied on verbal autopsy, ie information from close relatives to identify causes of adult death because there was essentially non-existence of reliable medical information (e.g. death certificate) on adult mortality. The verbal autopsy method of death identification has been validated in several studies in African contexts, including Ghana, where the present study was conducted (Hosegood et al. 2004, Lopman et al 2010). The assumption behind the verbal autopsy method is that diseases have distinct symptoms that are recognizable by even lay people. The study used a conservative endorsement of at least 6 HIV/AIDS-defining symptoms compared to the 3 that were often used in earlier investigations (Cluver 2007 PhD Thesis, Cluver, Gardner & Operario 2007). However, it is acknowledged that symptoms defining HIV/AIDS overlap with those of other related diseases, introducing a caveat that should be noted when interpreting the findings of the present study.

Child-headed families were not included in the analyses, but that as there were only 5 of these children, inclusion would be unlikely to affect the results.

Another limitation relates to the characteristics and nature of the sample used in the study that may not guarantee the generalisation of the findings. The sample size, although larger than those used in most earlier studies, is modest and came from just one out of the 130 districts in Ghana. Caution needs to be taken in attempting to generalise the findings of the study to the larger population of Ghanaian children. It is worth stating that the district was purposely selected because it has the highest prevalence of HIV/AIDS in Ghana.

The study was comprised of participants who can comprehend the English language questionnaire items and so some prospective respondents (0.03%) were denied participation. The results may therefore not reflect those of all children from the Manya Krobo district. It was intended to have the questionnaires translated into a local Ghanaian but this was abandoned because of practical reasons learned from the pilot studies. It was found that the study area consisted of several ethnic groups with varied local languages and that the common local language (Dangme) within the area is spoken by approximately 65% of the people. This was compared to the 78% literacy rate within the area and the significant proportion of children who are attending school (86% aged 8 – 20 years old), and it was decided to conduct the study in English language. Clearly, the study did not capture approximately 10% of respondents who are completely illiterate, and so caution should be taken in interpreting the findings of the present study.

Only a few respondents were excluded from participation because of language difficulties, and so this data could not be analysed and compared to those who participated. However, since consistently the present study has demonstrated that children who are not presently in school are at heightened risk for several psychological outcomes, it indicates that the impact of non-literacy on the present findings may be an under-estimation of psychological distress on children.

This study also suffers some statistical challenges that must be noted. Earlier studies have examined psychological distress among children affected by HIV/AIDS within only a few contextual variables. Unarguably, simplicity is best but the essential problem is that psychological outcomes among children affected by HIV/AIDS are influenced by a wide range of significant variables that merit investigation within the same study if researchers are to be making head-way towards effective intervention programmes. The present study therefore included several contextual risks and protective variables as well as a number of psychological wellbeing outcomes that compelled several statistical analyses and comparisons to be conducted. The more variables and comparisons made in the analyses affect the significance level to be obtained, implying that the some falsely significant differences could be possibly reported. The present study adopted a strict significant level of .01 for all analyses to minimise these weakness.

The present study's results are also presented as standardised regression coefficients. There were several independent variables with varying metrics/units of measurement examined in the study and standardised coefficients make it easier to compare the relative influence of the different predictors upon mental health outcomes. Standardised coefficients that are based on changes in standard deviation units permit easy comparison of the relative strength of the coefficients of several predictors. It could be contested by others, however, that the use of the unstandardised coefficients could have allowed for readily interpretable substantive, real meaning of results and findings within a specified variable.

In conducting the interaction effects analyses, the study used mean score cut-off points to classify risk factors as less or more. While this may be contested, it was adopted because there was no prior literature as to existing norms that would reflect contextual, local inputs.

Despite these limitations this thesis shows several strengths and makes significant contributions to the evidence base about children affected by HIV/AIDS in relation to a broad spectrum of mental health outcomes. Prior investigations have compared the mental health of children orphaned by AIDS with non-orphaned children only. Only a few studies included children orphaned by causes other than AIDS. These designs presented 2 essential flaws. One, they were unable to determine if AIDS-related cause of death of a parent confers effects additional to those of orphanhood per se. Second, these designs were unable to establish whether the effects of HIV/AIDS on children start before they are bereft of their parent (s). Consequently, this is the first study to have examined the effects of parental HIV/AIDS on three groups of vulnerable children compared with a comparison group. The study offers valuable evidence to the extent to which HIV/AIDS affects different vulnerable groups of children. Significantly, it demonstrated that children living with HIV/AIDS-infected are at heightened risk for mental health problems just as AIDS orphaned children. Children living with HIV/AIDS-infected parents are often ignored in intervention programs for children affected by HIV/AIDS perhaps because of lack of or limited research evidence. The findings of the thesis also shows that the effects of parental HIV/AIDS start to affect children before they are orphaned.

The findings also demonstrated that much of the psychological distress suffered by children affected by HIV/AIDS experience is explained by contextual co-factors (psychological abuse,

physical abuse, caring responsibilities, neglect and engagement into paid labour) that interact with HIV/AIDS related issues (stigma and orphanhood). The study presented some possible models of how a range of risk factors (contextual and HIV/AIDS related) interact to predict the mental health outcomes among children affected by HIV/AIDS. Although not conclusive, these models give indications of pathways that may explain how HIV/AIDS can influence mental health in Ghanaian children.

12.3 Policy Implications of the findings from the present study

The findings of the present study made several interesting and important conclusions. These conclusions have relevant policy implications, many of which were highlighted in the discussion sections. The following are additional policy implications for Government, para-government institutions, international organisations, NGO's and CBO's that are engaged in works related to children affected by HIV/AIDS.

- The evidence from the present findings highlighted the interactive, cumulative, co-occurrence of largely contextual factors and unique exposures of HIV/AIDS that impact psychological difficulties among children affected by HIV/AIDS. This underscores the urgency to shift public interventions that address risk factors of HIV/AIDS (e.g. stigma) in isolation to more holistic, broadly based interventions (such as socio-economic provisions, educational support systems, family and community support networks, alleviation of child labour and child maltreatment) that also address contextual risk factors within which children affected by HIV/AIDS find themselves. Such interventions, it is suggested will effectively alleviate these risks factors and enhance the mental health of children.
- Another implication of the present findings is that efforts aimed at improving the psychological wellbeing of children should be applicable to all AIDS-affected children and not the usual “selective action” targeted at only AIDS-orphaned children (Meintjes & Giese 2006), excluding other vulnerable children affected by the HIV/AIDS pandemic just as the present evidence suggests. Formulating interventions for only AIDS-orphaned children places a tag on them and consequently leads to further

discrimination and stigmatisation of these children in our society (Meintjes & Giese 2006, Delva et al. 2009).

- A legal advocacy framework is needed to give protection to all children affected by HIV/AIDS and to ensure that these children are recognized by the Government and para-governmental institutions. If this is done, it will be the first step towards addressing issues such as abuse, exploitation, care and support services that are specific to children affected by HIV/AIDS in the national constitutions, legislation, education and the welfare systems.
- Although the present evidence indicates that children orphaned by AIDS are not materially poorer than other children, it is suggested that every effort must be made to improve the situations and problems of children affected by HIV/AIDS. This is because the cognitive evaluation of the situations (perceived social status) of the OVC is one of the main mechanisms by which HIV/AIDS affects children's mental health.
- Another policy implication is that intervention programmes that focus on reducing HIV/AIDS related stigma, discrimination and social exclusion may be effective in alleviating psychological difficulties in children affected by the HIV/AIDS pandemic. However, policy makers should be guided in their intervention formulation by the evidence that stigma varies across regional and cultural contexts, and is influenced by the HIV/AIDS prevalence of HIV/AIDS, the epidemic's maturity, mode of HIV infection and the distribution of HIV/AIDS cases.
- Government agencies, NGO's and all organisations must make efforts to increase access to education for children affected by HIV/AIDS and endeavour to keep them in schools. Free-education (no fee payment), support with learning materials, school uniforms and possibly free food at schools would all go a long way to keep children in school. The government of Ghana is hereby particularly encouraged to scale up her ongoing educational support programmes of distributing free uniforms, books, laptop per pupil and school meals to all children and particularly to HIV/AIDS prevalence areas since funding constraint are impeding the process. Additionally, although education at the primary and junior high levels are free as stipulated by the education

regulations, observations are that most schools are charging other unauthorised fees such as sports levy, cultural levy, development fees and Parent-Teacher Association fees among others. This situation places burden on efforts by families affected by HIV/AIDS to keep their children in schools. It is suggested that the Ministry of Education and the Ghana Education Service collaborate to address the situation so that children affected by HIV/AIDS are not pushed out of school.

- Organisations and institutions working to enhance the wellbeing of children affected by HIV/AIDS should encourage families to reduce the number of young children or siblings living together where substitute family placements are required. It is advised, based on current evidence, that fewer children affected by HIV/AIDS are placed in households with more adult family members.
- Finally efforts should also be made to reduce the number of changes in the residences (and consequently caregivers) for children affected by HIV/AIDS. Present evidence is that children who frequently change residences (caregivers) are at heightened risks for psychological distress compared to those who stayed at one residence for longer periods.

12.4 Recommendations for future research

- The present study made several novel findings concerning the interactions of several risks factors as mechanisms by which HIV/AIDS impacts on children's mental health. It is suggested that further investigations are conducted to confirm these findings.
- The present study included several risk and protective factors as well as a wide range of psychological outcomes. Although these variables were comprehensive, they are not exhaustive regarding the challenges and distress that children affected by HIV/AIDS experience. It is therefore recommended that future research broadens the range of health outcomes to include physical health, HIV infection vulnerability, risks behaviours, post traumatic stress, etc.

- The interaction analyses carried out in the present study identified a range of mechanisms by which issues specific to HIV/AIDS (stigma, orphanhood group) interact with general contextual risk factors (socio-economic status, abuse, domestic violence, social support, child labour) to impact on children's mental health. However, there is the possibility that some issues specific to HIV/AIDS might directly impact contextual factors to indirectly impact mental health. For example being an AIDS orphan and experiencing stigma may possibly heighten risk for child labour and abuse, which may in turn impact on overall or specific psychological outcomes. Rigorous controlled investigations in larger samples are needed to explore these mechanisms which could enhance intervention programs.
- The present study concentrated on only one geographical location, the Manya Krobo district, a factor that limits the generalization of the conclusions drawn from findings of the thesis. It is therefore suggested that future research increase and broaden the recruitment of OVC from diverse populations. Additionally, one of the criteria for the study meant that only participants who are literate were included. Clearly, non-literate OVC might be differentially impacted by HIV/AIDS. Future research should address this pitfall. Future research must address this aspect literacy limitation by possibly translating measures into languages understandable by all participants.
- As noted in the limitation section, investigations on the mental health of OVC should ideally be longitudinal. Future research should take up this challenge as it will allow for examination of stages during which children are most at risk for psychological distress from parental HIV/AIDS-infection and subsequent death. Although the present cross-sectional quantitative study demonstrated at snapshot the impact of HIV/AIDS on children before and after bereavement it could not highlight moments of defining risk points. A controlled longitudinal research programme is urgently needed to address this weakness.
- There is also the need for future in-depth qualitative studies to gain detailed and rich understanding in answering the "how" and "why" of the behaviours and experiences of OVC in their real world.

- As the literature on the mental health of OVC is growing in sophistication in terms of method and design, the content and focus should also be keeping pace. Future research should be focusing on the interplay between environmental factors and OVC's genetic make up in creating resilience or vulnerability regarding how individuals respond to specific risks and exposures of HIV/AIDS. Recent evidence suggests that particular gene types make some individuals susceptible to several mental health outcomes (Caspi et al 2002). It would be interesting for future research to delve into this area of investigation.
- This is the first quantitative study in Sub-Sahara Africa to have included children living with HIV/AIDS-infected parents and demonstrated heightened levels of psychological outcomes among these children. The analyses also demonstrated that this group of children could be targets for effective intervention programs. It is therefore recommended that this group of children are included in any future research on the wellbeing of children affected by HIV/AIDS.

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APPENDICES

Appendix 1: Information Sheet for Parents and Caregivers

Appendix 2: Consent Form for Parents and Caregivers

Appendix 3: Information Sheet for Children

Appendix 4: Consent Form for Children

Appendix 5: Ethical Clearance from University of Glasgow

Appendix 6: Ethical Clearance from Ghana Health Service

Appendix 7: Children's Self-report Questionnaire

Appendix 8: Parents' and Caregivers' Questionnaire

Appendix 9: Mac-Arthur Latter of Socio-economic Status

Appendix 10: Inclusion Criteria Checklist

Appendix 11: Verbal Autopsy and HIV/AIDS status Checklist

Appendix 12: Assessment of Research Methodological Quality Checklist

Appendix 13: Methodological Quality Rating Scale Categorisation

Appendix 14: Literature Search Words/List

Appendix 1: Information Sheet for Parents and Caregivers



Vulnerable Children and Psychological health

Information for parents.

Contact: Paul Doku; 024 6389078

I would like to invite you to take part in a research study. Before deciding, it is important that you understand what is being done and why. Please take the time to read the following information. Discuss it with your family, or phone us (contact number above) if you have any questions.

Vulnerable Children and Psychological health is a study which aims to find out more about how young people who are orphaned or vulnerable relate to others. Some young people have particular personal problems and mental difficulties because their parent(s) are dead or sick. They might find it difficult to form genuine relationships with family members. Some children with difficulties in this area may grow up to have psychological problems and unable to reach their full potential in society. We need to find ways of identifying those children who are most at risk so that help can be provided early. We hope this study will be a first step towards this goal. However some young children who are not orphaned and are also not living in difficult household will also be asked to take part in the research.

A technique of finding out about children's daily activities and behaviours, including particular questions for parents or carers and questions for children themselves was developed. The package consists of a short semi-structured interview for parents or carers as well as questionnaire for young people. The questions have already been used severally with children of your age in Uganda, Zimbabwe and South Africa who easily understood them. We have found that it works well, in determining the difficulties a child may have with relationships. There are some questions on health seeking behaviour, stigma and discrimination, young children risks and protective factors.

The research study will involve children and their parents or carers. We will approach families in selected communities to help with the research. We will have 2 groups: (A) orphaned and vulnerable group and (B) non-orphaned and vulnerable group.

Once we have done the assessment with all participating families, we will see difference between the groups. First we hope to find out whether the orphaned and vulnerable group has much behaviour problems than the other group in the community. Secondly we hope findings from this research may make it possible to identify and formulate intervention programs to help eliminate or minimise these particular problems.

► **Parents or carers** will be asked about how their child behaves, particularly in social situations with friends or family. They will also be asked a bit about their child's early development, family health seeking behaviour, sense of stigma and discrimination.

► **Young people** will also be ask questions about their own behaviours and their sense of general living situations.

► **Community/opinion leaders** will be invited to take part in Focus Group Discussions (FGD) to identify community strengths and weaknesses that could be factored into future intervention programs. FGD will also be held for selected parents/carers and young people to discuss salient findings from the interview assessments.

All information will be stored according to the Data Protection Act and kept in strict confidence within the research study, except in the unlikely event of child protection concerns being raised.

If you have any questions concerning the study, phone me, Paul Doku 0246 389078. However, in case of abuse or complaints about infringement on your rights, kindly contact the Ghana Health Service on 021 619323.

Appendix 2: Consent Form for Parents and Caregivers



Vulnerable Children and Psychological Health Study

Consent form for parent or caregiver

Contact: Paul Doku; 0246 369078

We would like your consent to take part in this study (see information sheet)

- ▶ You do not have to take part in the project and, if you decide not to, this will not affect you in any way.
- ▶ Make sure you understand and are happy with everything about the project before you sign the consent form. If you have any questions, please contact Paul Doku on **0246 389078**.

Please tick box, if YES

▶ I have read and understood the information sheet and have had the chance to ask questions.

☐

▶ I understand that it is not compulsory for me to take part in the study and I am free to withdraw at any time without giving any reason, without any cost or legal rights being affected.

☐

▶ I agree to take part in the study

☐

▶ I am happy for my child's and family's involvement in the study. Please write your child's name here.....

☐

▶ I am happy to be contacted again to take part in a follow up study sometime to come.

☐

Name of participant

date

signature

Name of person taking consent

date

Signature

Witness

date

Signature

Thank you!

Two copies: 1 for participant; 1 for researcher

Appendix 3: Information Sheet for Children



Children & Young People's Relationships with others

Information for children and young people.

Contact: Paul Doku; 0246 389078



I would like to invite you to take part in a research study. Before deciding, it is important that you understand what is being done and why, so please listen while I explain this to you. Please you could also read this leaflet and discuss it with your parents or a teacher or relative.

Vulnerable Children and Psychological health is a study which aims to find out about how young people who are orphaned or living in difficult neighbourhoods or households get on with family, school and friends. Some young people have particular personal problems and mental difficulties because their parent(s) are dead or sick. We need to find which children have these problems so help can be planned and provided to them early. However some young children who are not orphaned and are also not living in difficult household will also be asked to take part in the research. So you have being selected by chance to take part in this study because you are an orphaned or not an orphaned or are living in a difficulty household.

A measure or questionnaire of finding out about children's daily activities and behaviours, including particular questions for parents or carers and questions for children themselves was developed. The questions have already been used so frequently with children of your age in Uganda, Zimbabwe and South Africa who easily understood them.

Any information we gather about you will be kept locked carefully away. No-one outside our research team will be able to see it unless we have any concerns about your safety.

What do you have to do if you take part? If you decide to take part, you will not have to do anything special. We would read out the questions to you to answer. There are no correct (right) or wrong answers and it is not a test or examination. We will also ask your parent or carer similar questions about you. There would be nothing extra for you to do. It should take 45 minutes for you to complete all the questions.

If you have any questions concerning the study, phone me, Paul Doku 0246 389078. However, in case of abuse or complaints about infringement on your rights, kindly contact the Ghana Health Service on 021 619323.

Appendix 4: Consent Form for Children



Vulnerable Children and Psychological Health Study

Consent form for children and young people.

Contact: Paul Doku; 0246 389078



We would like your consent to take part in this study (see information sheet)

► Since you are under the age of 18, you do not have to sign this form immediately, so first please talk to your parents about the study and tell them whether or not you want to take part.

► You do not have to take part in the project and, if you decide not to, this will not affect the care you receive.

► Make sure you understand and are happy with everything about the project before you sign the consent form. If you have any questions, please contact Paul Doku on: ► **0246 389078**

Please tick box, if YES

► I have read and understood the information sheet and have had the chance to ask questions.

☐

► I understand that my participation is voluntary and that I am free to stop at any time, without giving any reason, without my legal rights being affected. This will not change any support or help I am getting

☐

► I agree to take part in the above study

☐

► I am happy for my parent or caregiver to be informed about my involvement in the study and to ask him/her similar questions relating to me. Please write your parent or caregiver's name here

☐

► I agree that any words I may say during the interview can be used, without giving my name, in the presentation of the research. I agree to take part in the study.

☐

► I am happy to be contacted again to take part in a follow up study sometime to come.

☐

Name of participant

date

signature

Name of person taking consent

date

Signature

Witness

date

Signature

Thank you!

Two copies: 1 for subject; 1 for researcher

Appendix 5: Ethical Clearance from University of Glasgow and Ghana Health Service



Mr. Paul Doku
Flat 1/5
280 Lincoln Avenue
Glasgow
G13 3PY

18th September 2008

Dear Mr Doku

Medical Faculty Ethics Committee

Project Title: The mental health orphaned and vulnerable children in the context of HIV/AIDS in Ghana

Project No.: FM05307

The Faculty Ethics Committee has reviewed your application and has agreed that there is no objection on ethical grounds to the proposed study. However, the following comments were made by reviewers which you may find of value:

- It would have been helpful to have had the numbers involved in Section 2 justified.
- Spelling, grammar and punctuation are generally poor.

The Committee are happy to approve the project, subject to the following conditions:

- The research should be carried out only on the sites, and/or with the groups defined in the application.
- Any proposed changes in the protocol should be submitted for reassessment, except when it is necessary to change the protocol to eliminate hazard to the subjects or where the change involves only the administrative aspects of the project. The Ethics Committee should be informed of any such changes.
- If the study does not start within three years of the date of this letter, the project should be resubmitted.
- You should submit a short end of study report to the Ethics Committee within 3 months of completion.

Yours sincerely

Dr Una MacLeod
Faculty Ethics Officer

Dr U MacLeod
Clinical Senior Lecturer

General Practice & Primary Care, Division of
Community
Based Sciences, University of Glasgow, 1 Horselethill
Road, Glasgow, G12 9LX

Tel: 0141 330 8328
E-mail: u.macleod@clinmed.gla.ac.uk

Appendix 6: Ethical Clearance from Ghana Health Service

GHANA HEALTH SERVICE ETHICAL REVIEW COMMITTEE

*In case of reply the
number and date of this
letter should be quoted.*

*My Ref. : ERC-
Your Ref. No.*



Health Research Unit
Ghana Health Service
P. O. Box GP-184
Accra.

25th September 2008.

Tel: +233-21-679323/681109
Fax + 233-21-226739

Email: Hannah.Frimpong@hru-ghs.org

Mr. Doku Paul Narh
Principal Investigator

Dear. Mr. Narh,

ETHICAL REVIEW COMMENTS

RE: PROTOCOL TITLED: "Mental Health of Orphaned and Vulnerable Children (OVC) in Ghana in the context of HIV/AIDS" - ID NO: GHS-ERC: 02/9/08

The Ghana Health Service Ethics Review Committee (GHS-ERC) at its sitting on 24th September 2008 considered and reviewed the above-mentioned protocol. I write to inform you that approval has been granted for implementation of the project.

The committee recommends that materials and information taken for this study should be used for the study only. Any subsequent use of the materials or the involvement of the participants for other studies will need clearance from the GHS-ERC. Page 6 of your protocol indicates that there are 130 districts in Ghana, kindly verify and get the correct number as now there are more than that.

Written permission should be sought for any amendment to the protocol. The committee should be informed of all publications arising from the study and copies of the same should be sent to the committee.

You are also advised to identify a Ghanaian Collaborator as fieldwork supervisor on the project whilst you are in Ghana.

Sincerely,

Hannah Frimpong
Administrator
Ghana Health Service Ethical Review Committee

Appendix 7: Children's Self-report Questionnaire

Youth Survey

Demographic Questions

Household Classified Code:
Interviewer tick gender of respondent: boy____ or girl____
Interviewer tick location of respondent: rural____ or urban____
How old are you?.....years
Are you enrolled in school?.....yes_____ no_____
If yes, grade_____
Care giver/parent/relative Code:
Religion:Ethnicity:
Which of the following did you lost: A). Mother, B). Father, C). Both, D). None
Age first bereaved:
Household size (how many people live in your house?):
With whom do you live with: A). Parent(s), B). Step-parent, C). Uncle, D). Aunt, E).
Other, specify.....
How many times have you moved your place of residence/dwelling, if any:

Socioeconomic Background:

How many rooms are there in the dwelling/household?.....

How many children are there in the family?

	Yes (1)	No (0)
Is the dwelling self – owned (not rented)?		
Is a TV or radio owned?		
Does the dwelling have a kitchen?		
* If yes, is the kitchen shared?		

What type of toilet facility does the dwelling/household have? (A). Private – WC (B) Private – KVIP/latrine (C) Public (D) Other; specify.....

What type of vehicle (if any) is owned?

What is the level of education of your

- A). Father:
 B). Mother:
 C). Guardian/Carer:

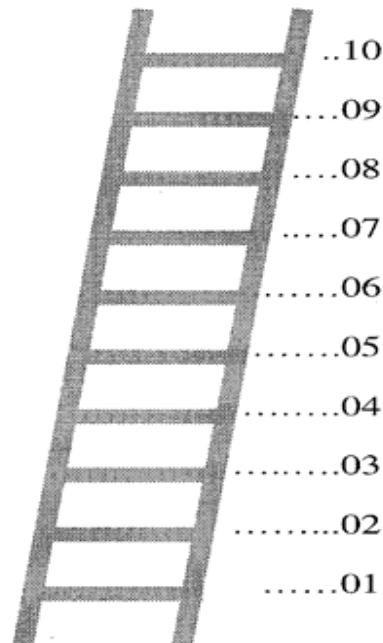
What is the occupation/work/profession of your

- A). Father
 B). Mother
 C). Guardian/Carer

SEB1A. Imagine or assume that this ladder pictures how the Ghanaian Society is set up.

- At the top of the ladder are the people who are best off – they have the most money, the highest amount of schooling, and the jobs that bring the most respect.
- At the bottom are people who are the worse off - - they have the least money, little or no education, no job or jobs that no one wants or respects.
- The higher you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

(A) Ghanaian Society



Now think about your family. Please tell us where you think your family would be on this ladder. Circle the rung that best represent where your family would be on the ladder

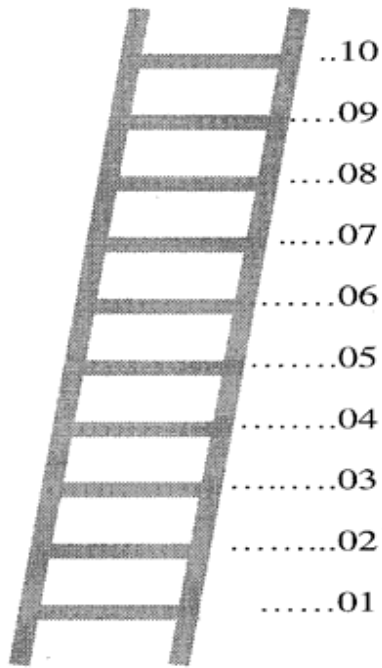
SEB1B. Imagine or assume that this ladder pictures how this community (mention the district name) is set up.

- At the top of the ladder are the people who are best off – they have the most money, the highest amount of schooling, and the jobs that bring the most respect.
- At the bottom are people who are the worse off - - they have the least money, little or no education, no job or jobs that no one wants or respects.

- The higher you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

Now think about your family. Please tell us where you think your family would be on this ladder. Circle the rung that best represent where your family would be on the ladder

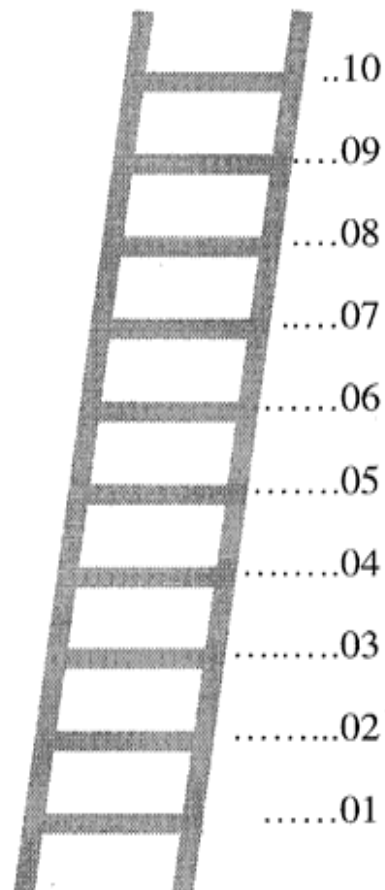
(B) The Krobo District



SEB1C. Now imagine or assume that this ladder is a way of picturing this district.

- At the top of the ladder are the people in this district with most respect and highest standing.
- At the bottom are people who no one respects, no one want to hang around and have no standing in this district.
- The higher you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

Now think about your family. Where would you place your family (please tell us where you think your family would be on this ladder). Circle the rung that best represent where your family would be on the ladder



Domain 1: Experience of Stigma, Discrimination, and Social Exclusion

Please answer as yes or no to each of these sentences. Do you feel...

<i>1</i>	<i>0</i>
<i>Yes</i>	<i>No</i>

(a) People in this community reject children who have AIDS or whose caregivers have AIDS?	
(b) No one cares about you in this community?	
(c) You are isolated from others in this community?	
(d) People in this community would rather hurt you than help you?	
(e) People speak badly about you or your family?	
(f) People make fun of your situation?	

Domain 2: Social Connection

<i>1</i>	<i>0</i>
<i>Yes</i>	<i>No</i>

Do you have someone in your life you can depend on for advice and guidance?

Think of someone in your life you can depend on. How often does that person...

(a) Comfort me?	
(b) Have open communication with me?	
(c) Trust me?	
(d) Provide for me needs?	
(e) Give me money?	
(f) Buy me things?	

<i>4</i>	<i>3</i>	<i>2</i>	<i>1</i>	<i>0</i>
<i>Very often</i>	<i>Often</i>	<i>Sometimes</i>	<i>Hardly ever</i>	<i>Not at all</i>

2.3. How do you relate to this person?

.....

Domain 3: Household Violence, Child Abuse and Corporal Punishment

3.1 Do you have an adult or guardian in your home that looks after you?

<i>1</i>	<i>0</i>
<i>Yes</i>	<i>o</i>

3.2 **If yes,**

How often do adults in your home...

(a) Shout at each other?	
(b) Hit each other?	

<i>3</i>	<i>2</i>	<i>1</i>	<i>0</i>
<i>Weekly</i>	<i>Monthly</i>	<i>Less often</i>	<i>Never</i>

3.3 **If yes**, in the past year, how often do your guardian(s)...

(a) Take time to explain why something you do is wrong?	
(b) Use a stick, belt, hairbrush or other hard item to discipline you?	
(c) Slap, punch or hit you on your head or face?	
(d) Said you would be sent away or kicked out of the house?	
(e) Threatened to invoke ghosts or evil spirits, or harmful people?	
(f) Withheld a meal to punish you?	
(g) Insulted you by calling you dumb, lazy or other names like that?	
(h) Kept you out of school?	

3	2	1	0
<i>Weekly</i>	<i>Monthly</i>	<i>Less often</i>	<i>Never</i>

Domain 4: Exposure to Community Violence

How often have you...

(a) Been attacked outside your home	
(b) Seen someone stabbed, beaten or shot outside your home?	

3	2	1	0
<i>Weekly</i>	<i>Monthly</i>	<i>Less often</i>	<i>Never</i>

Domain 5: Child Work and Responsibilities

5.1 In the past year, did you ever have to stay out of school to attend to household duties?

1	0
<i>Yes</i>	<i>No</i>

5.2 If yes, how often does the following happen?

(a) Fetching water/wood	
(b) Tending animals	
(c) Working on the land/farm	
(d) Caring for younger children	
(e) Caring for sick adults	
(f) Getting money to support the household	

3	2	1	0
<i>Weekly</i>	<i>Monthly</i>	<i>Less often</i>	<i>Never</i>

Domain 6: Emotional Health-Seeking Behavior

In the last year, have you been so mentally, emotionally or spiritually troubled that you felt you needed to consult a healer (traditional or spiritual healer) or health worker (clinic nurse or doctor)?

1	0
<i>Yes</i>	<i>No</i>

Domain 7: Delinquency and Risk Behavior

During the past year, how many times (if any) have you...

(a) Been drunk or very high from using alcoholic beverages	
(b) Been using drugs (marijuana, Indian herb [insert local terms], etc)?	
(c) Been arrested by the police for your behavior?	
(d) Threatened someone seriously or beaten up somebody?	
(e) Smoked?	

5+	3-4	2	1	0
----	-----	---	---	---

Domain 8: Internalizing Problems, Self-Esteem, Future Orientation

This part of the questionnaire looks at sadness and other difficulties which people may experience at some point in their lives. The questionnaire is arranged in groups of 3 statements. Please listen to each group carefully. Then pick out **ONLY ONE** statement from each group which best describes the way you have been feeling during the last 2 weeks. Please circle or underline answer chosen.

0	1	2	Score
a) I am sad once in a while	I am sad many times	I am sad all the time.	
b) Nothing will ever work out for me	I'm not sure if things will work out for me.	Things will work out for me OK	
c) I do most things OK	I do many things wrong	I do everything wrong	
d) I hate myself;	I do not like myself;	I like myself.	
e) I do not think about killing myself	I think about killing myself but I would not do it	I want to kill myself.	
f) I feel like crying everyday	I feel like crying many days	I feel like crying once in a while.	
g) Things bother me all the time	Things bother me many times	Things bother me once in a while.	
h) I do not feel alone	I feel alone many times	I feel alone all the time	
i) I have plenty of friends	I have some friends but wish I had more	I don't have any friends.	
j) Nobody really loves me	I'm not sure if anybody loves me	I'm sure that somebody loves me.	

Domain 9: Externalizing and Emotional Problems

For each item, please state whether 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! Please give your answers on the basis of how things have been for you over the last 12 months.

2	1	0
<i>Certainly true</i>	<i>Somewhat true</i>	<i>Not true</i>

	2	1	0
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			

Domain 10: Multidimensional Scale of Perceived Social Support

Instructions: We are interested in how you feel about the following statements. Listen to each statement carefully. Then indicate how you feel about each statement.

“1” if you **Strongly Disagree (SD)**; “2” if you **Disagree (D)**; “3” if you are **Neutral (N)**; “4” if you **Agree (A)**; “5” if you **Strongly Agree (SA)**

	SD	D	N	A	SA
1. There is a special person who is around when I am in need.					
2. There is a special person with whom I can share my joys and sorrows.					
3. My family really tries to help me.					
4. I get the emotional help and support I need from my family.					
5. I have a special person who is a real source of comfort to me.					
6. My friends really try to help me.					
7. I can count on my friends when things go wrong.					
8. I can talk about my problems with my family.					
9. I have friends with whom I can share my joys and sorrows.					
10. There is a special person in my life who cares about my feelings.					
11. My family is willing to help me make decisions.					
12. I can talk about my problems with my friends.					

Appendix 8: Parents' and Caregivers' Questionnaire

Parents and Caregivers Survey

Demographic Questions

Parents/Caregivers Code:
<i>Interviewer tick gender of respondent: Male ____ or female ____</i>
<i>Interviewer tick location of respondent: Rural ____ or Urban ____</i>
How old are you?.....years
Educational level: Occupation:
Religion: Marital status:
Child's questionnaire code:
How long has the child been living with you?

Socioeconomic Background:

How many rooms are there in the dwelling/household?

How many children are there in the family?.....

	Yes (1)	No (0)
Is the dwelling self – owned (not rented)?		
Is a TV or radio owned?		
Does the dwelling have a kitchen?		
* If yes, is the kitchen shared?		

What type of toilet facility does the dwelling/household have?

(A). Private – WC

(B) Private – KVIP/latrine

(C) Public

(D) Other; specify.....

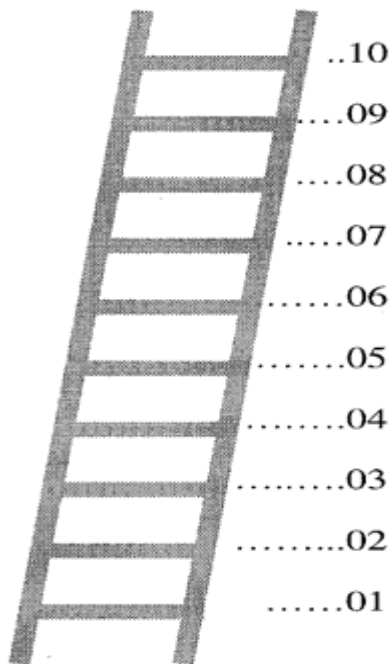
What type of vehicle (if any) is owned?

SEB1A. Imagine or assume that this ladder pictures how the Ghanaian Society is set up.

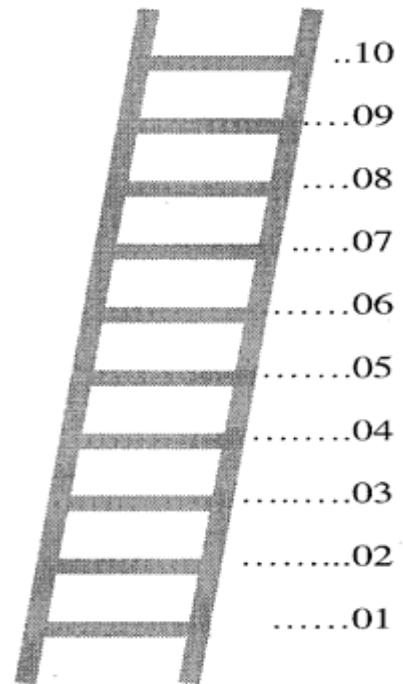
- At the top of the ladder are the people who are best off – they have the most money, the highest amount of schooling, and the jobs that bring the most respect.
- At the bottom are people who are the worse off - - they have the least money, little or no education, no job or jobs that no one wants or respects.
- The higher you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

Now think about your family. Please tell us where you think your family would be on this ladder. Circle the rung that best represent where your family would be on the ladder

(B) Ghanaian Society



(B) The Krobo District



SEB1B. Imagine or assume that this ladder pictures how this community (mention the district name) is set up.

- At the top of the ladder are the people who are best off – they have the most money, the highest amount of schooling, and the jobs that bring the most respect.
- At the bottom are people who are the worse off - - they have the least money, little or no education, no job or jobs that no one wants or respects.
- The higher you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

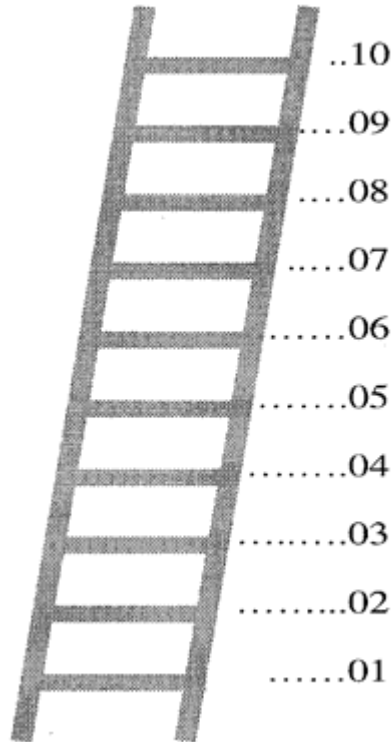
Now think about your family. Please tell us where you think your family would be on this ladder. Circle the rung that best represent where your family would be on the ladder

SEB1C. Now imagine or assume that this ladder is a way of picturing this district.

- At the top of the ladder are the people in this district with most respect and highest standing.
- At the bottom are people who no one respects, no one want to hang around and have no standing in this district.

- The higher you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom.

Now think about your family. Where would you place your family (please tell us where you think your family would be on this ladder). Circle the rung that best represent where your family would be on the ladder



Domain 1: Caregiver's Emotional Health-Seeking Behavior

1.1 When the times are very difficult, people can feel very sad or unhappy. They can also feel that life is a struggle that is too big for them, or they can feel spiritually or emotionally troubled. When things are difficult they can also feel pain in their bodies like headaches or stomachaches. When this happens, many people with children feel they need to be strong for the children. In the past year have you felt like this?

3	2	1	0
<i>Every week</i>	<i>At least once a month</i>	<i>Only sometimes</i>	<i>Not at all</i>

1.2 In the last year, have you felt so spiritually or emotionally troubled that you felt you needed to* consult a healer (spiritual healer, faith healer or traditional healer), counselor or health worker (clinic nurse or doctor)? * Please answer according to whether or not you felt you needed to consult someone, even if you were not able to get there because of distance, cost or other reasons.

1	0
<i>Yes</i>	<i>No</i>

Domain 2: Caregiver Exposure to Domestic Violence

2.1 Over the past year, has anyone in the household kicked, bitten, slapped, hit with a fist, threatened with a weapon (knife, stick, belt or gun), or thrown something that could hurt at another adult who lives here?

<i>1</i>	<i>0</i>
<i>Yes</i>	<i>No</i>

<i>3</i>	<i>2</i>	<i>1</i>	<i>0</i>
<i>weekly</i>	<i>monthly</i>	<i>Less often</i>	<i>ever</i>

2.2 If yes, how often does this happen?

Domain 3: Use of Physical Punishment or Maltreatment in the Home

All adults use certain methods to teach children the right behavior or to address a behavior problem. I will read various methods that might be used and I want you to tell me how often you (or if applicable, your husband/partner) have used this with any of your children in the last year. Tell me if you [or your husband/partner] have done this with any child: never; once or twice; three to five times; six to ten times; or more than 10 times in the last year.

<i>4</i>	<i>3</i>	<i>2</i>	<i>1</i>	<i>0</i>
<i>>10 times</i>	<i>6 - 10</i>	<i>3- 5 times</i>	<i>Once/twice</i>	<i>Never</i>

	Write
a) Explained why something was wrong?	
b) Took away privileges or money, forbade something liked or prohibited him/her from leaving the home?	
c) Threatened to invoke ghosts or evil spirits, or harmful people?	
d) Threatened to kick out of the house or send away for a long time?	
e) Withheld a meal as punishment?	
f) Insulted [name of child] by calling him/her dumb, lazy or other names like that?	
<i>Direct violence:</i>	
g) Hit him/her on the buttocks with an object such as a stick, broom, cane or belt?	
h) Hit elsewhere (not on buttocks) with an object such as a stick, broom, cane or belt?	
i) Hit him/her on head with knuckle or back of the hand?	
j) Kicked him/her with a foot?	
k) Hit him/her over and over again with object or fist ("beat up")?	
l) Threatened him/her with a knife or gun?	
m) Slapped on face or back of head?	

Domain 4: Community Maltreatment, Exploitation, Stigma & Discrimination

How does this community feel about children whose parents have HIV/AIDS or died of AIDS?

	Yes	No
a) Adults in this community are generally concerned for the welfare of these children, and help them as much as they can.		
b) The community rejects these children.		
c) These children are more likely to be hurt (maltreated or taken advantage of) than helped by people in this community.		
d) The community feels these children carry with them the bad deeds of their parents.		
e) The community feels these children cause problems in the neighborhood/village.		
f) People in this community make fun of or talk bad about these children.		

Domain 5: Caregiver Report of Youth's Emotional Health (Health-Seeking Behavior)

In the last year, has your child been so mentally, spiritually or emotionally troubled* that you felt you needed** to take them to a healer (spiritual healer, faith healer or traditional healer), counselor or health worker (clinic nurse or doctor)?

1	0
Yes	No

* For example, sad, having problems with nerves, often complaining of headaches or stomach aches, or being much more disobedient than usual?

** Please answer according to whether or not you felt you needed to consult someone, even if you were not able to get there because of distance, cost or other reasons.

Domain 6: Caregiver Report on Youth's Internalizing, Externalizing and Risk Behaviors

For each item, please mark the box for Not True (0), Somewhat True (1) or Certainly True (2). 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 the child's behaviour over the last six months or this school year.

Not True	Somewhat True	Certainly True
0	1	2

	Write
Considerate of other people's feelings	
Restless, overactive, cannot stay still for long	
Often complains of headaches, stomach-aches or sickness	
Shares readily with other children (treats, toys, pencils etc.)	
Often has temper tantrums or hot tempers	
Rather solitary, tends to play alone	
Generally obedient, usually does what adults request	
Many worries, often seems worried	
Helpful if someone is hurt, upset or feeling ill	
Constantly fidgeting or squirming	

Has at least one good friend	
Often fights with other children or bullies them	
Often unhappy, down-hearted or tearful	
Generally liked by other children	
Easily distracted, concentration wanders	
Nervous or clingy in new situations, easily loses confidence	
Kind to younger children	
Often lies or cheats	
Picked on or bullied by other children	
Often volunteers to help others (parents, teachers, other children)	
Thinks things out before acting	
Steals from home, school or elsewhere	
Gets on better with adults than with other children	
Many fears, easily scared	
Sees tasks through to the end, good attention span	

A). Overall, do you think that your child has difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

No	
Yes-minor difficulties	
Yes-definite difficulties	
Yes-severe difficulties	

If you have answered "Yes", please answer the following questions about these difficulties:

B). How long have these difficulties been present?

Less than a month	
1-5 months	
6-12 months	
Over a year	

C). Do the difficulties upset or distress your child?

Not at all	
Only a little	
Quite a lot	
A great deal	

D). Do the difficulties interfere with your everyday life in the following areas?

	Not at all	Only a little	Quite a lot	A great deal
HOME LIFE				
RIENDSHIPS				
CLASSROOM LEARNING				
LEISURE ACTIVITIES				

E). Do the difficulties put a burden on you and the family as a whole?

Not at all	
Only a little	
Quite a lot	
A great deal	

Relationship Problems Questionnaire

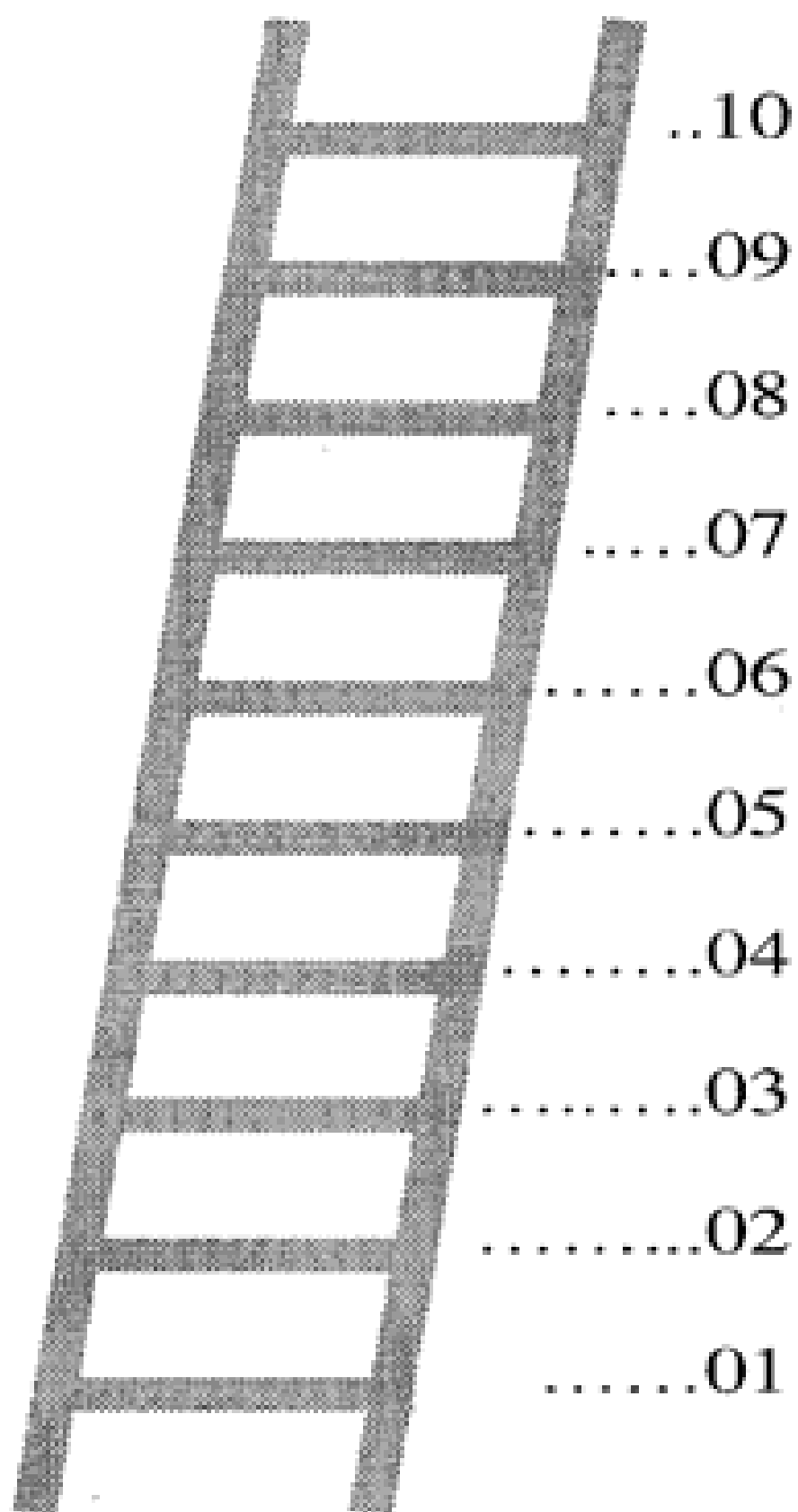
Please tick the statement that best describes _____ (name of child).

	Exactl y like (child)	Like (child)	A bit Like (child)	Not at all like (child)	For Office Use Only
Gets too physically close to strangers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _1
Is too cuddly with people s/he doesn't know well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _2
Often asks very personal questions even though s/he does not mean to be rude	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _3
Can be aggressive towards him/herself e.g. using bad language about him/herself, head banging, cutting etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _4
Has no conscience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _5
Is too friendly with strangers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _6
Sometimes looks frozen with fear, without an obvious reason	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _7
If you approach him/her, he/she often runs away or refuses to be approached	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _8
There is a false quality to the affection s/he gives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _9
If you approach him/her, you never know whether s/he will be friendly or unfriendly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> _10
Scoring	3	2	1	0	

Do you have any other comments or concerns?

Thank you very much for your help

Appendix 9: Mac-Arthur Ladder of Socio-economic Status



Appendix 10: Inclusion Criteria Checklist

INCLUSION CRITERIA CHECKLIST

	Yes	No
A child between 10-18 years lives in the household		
The child is not being fostered by non-family relation		
Both the child and parent/caregiver have sound understanding of spoken English		

Appendix 11: Verbal Autopsy and HIV/AIDS Status Checklist

VERBAL AUTOPSY CHECKLIST

(to be completed by both children and parents/caregivers)

Did the deceased parent/spouse experience any of the following prior to death or is the surviving parent(s) or caregiver(s) experiencing any of following:	Yes	No
1. Prolonged fever (more than one month)		
2. Prolonged and chronic diarrhoea (usually over a month)		
3. Significant weight loss (over a period of time and more than 10 percent of body weight)		
4. Persistent cough or TB for more than one month		
5. Persistent skin infection (generalized itching and rashes)		
6. Aggressive skin cancer (Kaposi Sarcoma)		
7. Oral thrush (Candidiasis)		
8. Recurrent Shingles (“Ananse”)		
9. Enlargement of the lymph glands (generalized swelling of arm pit, neck and groin)		
10. White ulcers and sores in mouth (white patches) and in the genital area.		
11. HIV/AIDS positive status confirmed by any testing		

Appendix 12: Assessment of Research Methodological Quality Checklist

Methodological Quality Rating Instrument

A. Rationale and Objectives	
1. Is a scientific background to the study provided and does it lead to a clear rationale for conducting the study?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
2. Are the aims/questions clearly stated or described?	Well covered = 3 Adequately addressed = 2 Poorly addressed = 1 Not addressed = 0 Not reported = 0 Not applicable = 0
B. Sampling and Allocation	
3. Baseline demographic and clinical characteristics of the group are specified to allow for appropriate comparisons (e.g. age, gender)?	Well covered = 3 Adequately addressed = 2 Poorly addressed = 1 Not addressed = 0 Not reported = 0 Not applicable = 0
4. Eligibility: inclusion and exclusion criteria for participation in study are clearly specified	Well covered = 3 Adequately addressed = 2 Poorly addressed = 1 Not addressed = 0 Not reported = 0 Not applicable = 0
5. Type of sample group: Geographic cohort, convenience, or highly selective	Geographical cohort = 2 Convenience = 1 High selective = 0
6. Is the sample size based on adequate power calculations?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
7. Was a well-matched control group employed (or in the absence of a control group, were attempts made to control for confounding variables in design)?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
8. Were the inclusion/exclusion criteria for allocation to experimental and or control groups adequately described?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
C. Design	
9. Is the study design appropriate to test the hypotheses?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
10. Were confounders accounted for in the study design?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
D. Assessment	
11. Are standardized - and validated - assessments used to measure children's levels of anxiety?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0

	Not applicable = 0
12. Is the Stroop task method clearly explained and described?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
13. Are researchers blind to participants' group and version of experiment completed?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
E. Analysis	
14. Is the analysis is appropriate to aims, design and type of outcome measure?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
15. Does the study address how many people who were asked to take part did so?	Well covered = 3 Adequately addressed = 2 Poorly addressed = 1 Not addressed = 0 Not reported = 0 Not applicable = 0
16. Does the study address attrition rates?	Well covered = 3 Adequately addressed = 2 Poorly addressed = 1 Not addressed = 0 Not reported = 0 Not applicable = 0
17. Is comparison made between those who took part and those lost by the end of the study?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
18. Is there adequate reporting of summary statistics?	Well covered = 3 Adequately addressed = 2 Poorly addressed = 1 Not addressed = 0 Not reported = 0 Not applicable = 0
19. Is there adequate reporting of effect sizes, p-values, confidence intervals etc. (where appropriate)?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
F. Results and Discussion	
20. Do the findings relate to the aims/questions/hypotheses?	Adequate = 2 Partial = 1 Inadequate = 0 Not reported = 0 Not applicable = 0
21. Are recommendations/implications for clinical practice/future research discussed in relation to the findings?	Well covered = 3 Adequately addressed = 2 Poorly addressed = 1 Not addressed = 0 Not reported = 0 Not applicable = 0
22. Are limitations of the study clearly discussed/expressed?	Well covered = 3 Adequately addressed = 2 Poorly addressed = 1 Not addressed = 0

	Not reported = 0 Not applicable = 0
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Appendix 13: Methodological Quality Rating Scale Categorisation

Quality rating scale categories

Rating	Essential criteria
Excellent	<p>Longitudinal design</p> <p>Key measures standardized for use with an identified population</p> <p>Standardized assessment of psychosocial wellbeing</p> <p>At least one point on all other categories</p>
Good	<p>Cross sectional design with a control group</p> <p>Key measures standardized or adapted for an identified population</p> <p>Standardized assessment of psychosocial wellbeing</p> <p>At least one point on all other categories</p>
Adequate	<p>Cross sectional design with a control group</p> <p>At least one point on all other categories</p>
Poor	Failure to meet adequate rating

Appendix 14: Literature Search Words/List

1. Ovid Results: Medline, Embase 1980- & Psycinfo 1985-

1 and 2	4
004 "Adaptation, Psychological"/	535
005 "Child"/	24685
006 "Child, Preschool"/	8179
007 "Adolescent"/	42938
008 "Infant"/	13496
009 "Prevalence"/	26282
010 "Stress, Psychological"/	1515
011 "Child Rearing"/	166
012 "Psychology"/	519
013 "Behavior"/	4493
014 "Acquired Immune Deficiency Syndrome"/	4168
015 "Child Care"/	2932
016 "Child Welfare"/	280
017 "Health Status"/	4743
018 "Residential Care"/	392
019 "Social Adaptation"/	654
020 "Social Interaction"/	2071
021 "Social Psychology"/	3136
022 "Caregiver"/	2005
023 "Depression"/	15597
024 "Fear"/	1836
025 "Mental Stress"/	1515
026 "Orphanage"/	63
027 "Academic Achievement"/	1847
028 "Wellbeing"/	2154
029 "Juvenile Delinquency"/	240
030 "Social Environment"/	586
031 "Social Problem"/	496
032 "Socialization"/	293
033 "Orphans"/	0
034 "resiliency".id.	0
035 "resiliency".id.	0
036 "AIDS".id.	0
037 "psychosocial adjustment".id.	0
038 "Foster Home Care"/	133
039 "Psychosocial Readjustment"/	0
040 "Emotional Adjustment"/	0
041 "Orphans"/	0
042 "Depression (Emotion)"/	0
043 "Attachment Behavior"/	0
044 "Anxiety"/	5984
045 "Grief"/	226
046 "Resilience (Psychological)"/	0
047 "Education"/	3389
048 "Adoption (Child)"/	149
049 "Orphanages"/	63
050 "Psychosocial Development"/	83
051 "Psychotrauma"/	613
052 "Parental Deprivation"/	41
053 "Psychosocial Care"/	1095
054 (AIDS or acquired immunodeficiency syndrome).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]	4680
055 orphan\$.mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]	946