

Full Length Research Paper

Mental health of HIV/AIDS orphans: A review

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Human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) is one of the best known deadly diseases in the world, due to its devastating impact on communities, families, children and development. Worldwide, 34 million people are presently living with HIV/AIDS out of which 17 million are HIV/AIDS orphans. India is the home to the second largest number of HIV/AIDS orphans in the world after South Africa and is expected to become the next epicenter of HIV/AIDS orphan crises. A thorough review of published empirical studies was done. PubMed, PsycINFO databases, online publications of several organizations, web searches and several online journals related to HIV/AIDS were reviewed. Studies related to HIV/AIDS orphans belonging to the age group of 6 to 18 years, who had lost either or both parents to HIV/AIDS or were living with HIV/AIDS infected parents were selected for the purpose of review. Mental health status of HIV/AIDS orphans demands attention because they severely experience negative emotions, behavioral problems, higher levels of psychological difficulties and poor academic performances due to the reasons of being out-of-school, being cared for by a non-parent, inadequate care, child labour, physical abuse, stigma and discrimination. Majorities of the studies found lower level of Perceived Social Support (PSS) of HIV/AIDS orphans. HIV/AIDS orphans need help, we need to know how their mental health is at risk and how to develop prevention and intervention efforts for improving their mental health. Rigorous research is required in this field, so that the programmes and policies makers that are attempting to work for their wellbeing may get helpful information to design evidence based interventions.

Key words: Human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) orphans, mental health, psychological distress, wellbeing.

INTRODUCTION

Human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) is one of the best known deadly diseases in the world, due to its devastating impact on communities, families, children and development. Emerging as a highly ignored issue are children orphaned by this disease (Pandve et al., 2008). Worldwide, 34 million people are presently living with HIV (UNAIDS, 2012) out of which 17 million are HIV/AIDS orphans (United Nations Children's Fund (UNICEF), 2011). India is the home to the second largest number of

HIV/AIDS orphans in the world after South Africa and is expected to become the next epicenter of HIV/AIDS orphan crises. A World Bank estimate suggests that the number of HIV/AIDS orphans in India is approaching 2 million (Sen, 2007). About 50,000 infants are prenatally infected with HIV/AIDS in India annually (National AIDS Control Organization (NACO), 2010). This scenario makes the burden of HIV/AIDS orphans significant and substantial in India. Against this background, the present article aims to review the literature on mental health of

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HIV/AIDS orphans.

Orphanhood has an overall serious negative impact. Children, whose parents have HIV/AIDS infection and/or have died with HIV/AIDS, are impacted medically, socially and economically (Eileen, 2003). They are excluded, discriminated physically and psychologically, distressed and do not get access to basic education and health care. Due to lack of basic caregivers and economical support they are at higher risk of bad health, nutrition, psychological problems, faulty development, juvenile delinquency, drug abuse, school dropout, involvement in risky behaviors and all forms of exploitation like prostitution, beggary, labor and prostitution.

METHODOLOGY

Inclusion criteria

The review focuses on HIV/AIDS orphans belonging to the age group of 6 to 18 years who have lost either or both parents to HIV/AIDS or they are living with HIV/AIDS infected parents. The review is prepared from published empirical studies on HIV/AIDS orphan children and adolescents.

Search strategy and article selection

Published empirical studies were reviewed using a standard review methodology. PubMed, PsycINFO databases and the online publications of several organizations [(the Joint United Nations Programme on HIV/AIDS (UNAIDS), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Children's Fund (UNICEF) and World Health Organization (WHO)] were searched till date for all published articles pertaining to mental health of HIV/AIDS orphans. Web searches (Google, Google Scholar and Yahoo) and several online journals related to HIV/AIDS were reviewed for the same. Excluded articles were those that discussed the mental health of non HIV/AIDS orphans.

RESULTS

The thorough literature search yielded 31 published studies worldwide from 1996 onwards that explored the mental health of HIV/AIDS orphans by assessing the constructs like depression, anxiety, loneliness, traumatic symptoms, self-esteem and hopefulness. The samples, methods and key findings of these studies are summarized in Table 1. Ten studies were conducted in China, six in South Africa, five in Zimbabwe, two in Uganda, Tanzania and Ethiopia and one in Rwanda, Mozambique, USA and Zambia each.

Sample

The sample sizes of reviewed studies related to HIV/AIDS orphans ranged from 30 to 755. The sample were collected randomly from schools, non-governmental organizations (NGOs), government-funded orphanages, orphans living in community-based small group, kinship

care and family based care.

Method and measures used

Out of 31 researches, four researches were longitudinal and 27 were cross-sectional. There was 1 qualitative comparative research, 27 quantitative comparative researches and 1 study used quasi experimental design. 2 researches were both quantitative and qualitative in nature. The methodological variations, use of non-standardized measurement scales and tools, inappropriate control groups, small sample size, use of inappropriate sampling methods and sampling biases of studies makes comparison of findings and drawing general conclusions regarding the mental health of HIV/AIDS orphans difficult. The research methodologies and measures used in the reviewed literature varied from in-depth qualitative interviews to quantitative psychological assessment measures. Reliable, widely used, well-validated standardized measures, adapted existing standardized quantitative scales and newly constructed non-standardized measures have been utilized in the studies till date. This review comprises of comparative quantitative and qualitative researches till date on mental health of HIV/AIDS orphans.

Quantitative studies

Poulter (1996) in Zambia interviewed 22 households with orphans cares, 66 households with HIV-positive parents and 75 control families. The controls were randomly selected from the community, which may also have included HIV-affected families. The Rutter scales (Rutter et al., 1970) was used for caregivers and they reported that orphans were significantly more unhappy or worried than children with HIV-positive parents and both groups were significantly more unhappy, worried, solitary and fearful of new situations than children in non-affected families (no p-values were given). The study found no relationship between psychological disturbance and economic stress and no evidence of conduct disorders and antisocial behavior.

Sengendo and Nambi (1997) interviewed 169 HIV/AIDS orphans and 24 non-orphans in Uganda using systematic random sampling from all eligible sponsored youth. They used a non-standardized 25-item depression scale and interviewed orphans, teachers and some guardians. They found that HIV/AIDS orphans had significantly higher depression scores ($p < 0.05$) and lower optimism about the future than non-orphans ($p < 0.05$). In urban Tanzania, Makame et al. (2002) interviewed 41 HIV/AIDS orphans and 41 non-orphans, using a non-standardized internalizing problems scale based on the Rand Mental Health Inventory (Veit-Wilson, 1998) and items from the Beck Depression Inventory (Beck et al., 1961). They found that HIV/AIDS orphans

Table 1. Studies investigating the Mental Health of HIV/AIDS orphans.

Citation/author/year/ country	Method and design	Sample characteristics	Measures	Main Findings
Cluver et al. (2012). South Africa	Quantitative-comparative study and longitudinal follow-up analysis	269 HIV/AIDS-orphans, 228 non-HIV/AIDS orphans and 180 non-orphans (age 11 to 25 years)	CDI, RCMAS and child PTSD checklist	HIV/AIDS-orphanhood and caregiver HIV/AIDS sickness predicted increased depression, anxiety, and posttraumatic stress symptoms over a 4-year period
Cluver et al. (2012). South Africa	Quantitative-comparative study and longitudinal follow-up analysis	425 HIV/AIDS orphans, 241 non-HIV/AIDS orphans and 278 non-orphans (aged 11 to 25 years)	CDI, RCMAS and child PTSD checklist	HIV/AIDS-orphans showed higher depression, anxiety and PTSD scores than non- HIV/AIDS orphans and non-orphans
Zhao et al. (2011). China.	Quantitative-comparative study and cross-sectional design	579 HIV/AIDS orphans, 383 vulnerable children and 337 non-orphans (aged 6 to 18 years)	Modified PSS-MFMR, CES-DC, and CLS	The strong association between PSS and psychosocial outcomes underscores the importance of adequate social support to alleviate stressful life events and improve psychosocial wellbeing of HIV/AIDS orphans
Getachew et al. (2011). Ethiopia	Quantitative-qualitative-comparative study and cross-sectional design	438 HIV/AIDS orphans and 438 non- HIV/AIDS orphan (age 11 to 18 years)	HADS, RSE and MSPSS	HIV/AIDS and non- HIV/AIDS orphans were having psychological problems. There was no significant difference in prevalence of depression and anxiety between the both groups
Hong et al. (2011). China	Quantitative-comparative study and cross-sectional design	296 HIV/AIDS orphans (aged 6–18 years)	TSCC	HIV/AIDS orphans living in kinship care were significantly distressed followed by those in orphanages and then those in community
Zhao et al. (2010). China	Quantitative-comparative study and cross-sectional design	214 maternal and 225 paternal orphans (aged 6 to 18 years)	TRQ, CES-DC, CLS, TSCC and MPSS	No significant differences were reported between maternal and paternal orphans, except that paternal orphans reported better trusting relationships with caregivers
Zhao et al. (2010). China	Quantitative-comparative study and cross-sectional design	176 double HIV/AIDS orphans (aged 6 to 18 years)	CES-DC, CLS and TSCC	HIV/AIDS orphans who were cared by non-relatives scored highest on depression, traumatic symptoms and loneliness.
Xu et al. (2010). China	Quantitative-comparative study and cross-sectional survey	116 families affected by HIV/AIDS and 109 non-affected families (aged 8 to 17 years)	PedsQL 4.0 generic core scale, SF-36, and RSE	Children in HIV/AIDS affected families were low on psychosocial functioning, emotional functioning and school functioning than non-affected families.
Hong et al. (2010). China	Quantitative-comparative study and cross-sectional study	755 HIV/AIDS orphans, 466 vulnerable children and 404 non-orphans (age 6 to 18 years)	MPSS, CES-DC, CLS, RSE, CFES, HS and PCFS	Vulnerable children reported the lowest level of perceived social support. Perceived social support was associated with positive psychosocial outcomes
Lin et al. (2010). China	Quantitative-comparative study and cross-sectional design	755 HIV/AIDS orphans, 466 Vulnerable children, 404 (age 6 to 18 years)	CES-DC, CLS, RSE, CFES, HS and PCFS	HIV/AIDS orphans reported higher stigmatization than other children. Increased stigma is associated with high psychopathology and lower self esteem, hopefulness, future expectations
Nyamukapa et al. (2010). Zimbabwe	Quantitative - qualitative comparative study and cross-sectional design	185 double orphans, 109 maternal orphans, 150 paternal orphans, 83 non-orphans (aged 12 years and below)	Depression and anxiety scales adapted from WHO self-report questionnaire and 14 group discussions with children	HIV/AIDS orphans were significantly higher on psychological distress than non-orphans. Girls and younger children reported significantly high psychological distress. Paternal and double orphans were worse affected psychologically
Zhang et al. (2009). China	Quantitative-comparative study and cross-sectional survey	755 HIV/AIDS orphans and 466 vulnerable children (age 6 to 18 years)	LITE-S, CES-DC, CLS, RSE, CFES, HS, PCFS, CES-DC, CLS and SES	HIV/AIDS orphans expressed significantly high future expectation, hopefulness, perceived control over the future than vulnerable children. HIV/AIDS orphans were higher on depression and lower loneliness compared to vulnerable children
Xu et al. (2009). China	Qualitative-comparative study and cross-sectional study	16 interviews were conducted with children (aged 8–17 years)	The study collected qualitative data using semi-structured interview	All children relied heavily on caregivers and peers to gain psychological support. Children's psychosocial problems included fear, anxiety, grief, loss of self-esteem and confidence. Stigma towards children existed including isolation, ignorance and rejection

Table 1. Contd.

Kuzinger et al. (2008). Tanzania and Burkina Faso	Quantitative-comparative study and cross-sectional survey	11392 caregivers of HIV/AIDS orphans (4931 in Tanzania, 4835 in Burkina Faso) and 1626 non-orphans (aged 6-11 years, 12-18 years)	Mapping exercise, school enrollment and proper level	No significant difference was observed in Tanzania between HIV/AIDS orphans and non orphans regarding school enrollment or school delay. In Burkina Faso HIV/AIDS orphans significantly were more likely not to attend school than non-orphans
Chitiyo et al. (2008). Zimbabwe	Quantitative-comparative study and cross-sectional study	20 HIV/ AIDS orphans (aged 10 to14 years)	REPSI and PSS scale	Providing Psychosocial support for a period of eight months resulted in improvements in several areas including schoolwork during and after the intervention period
Cluver et al. (2008). South Africa	Quantitative-comparative study and cross-sectional study	425 HIV/AIDS orphans, 241 non-AIDS orphans and 278 non-orphans (age 10 to 19 years)	CDI, RCMA, SDQ and Child PTSD checklist	HIV/AIDS orphans had more psychological problems including anxiety, depression, peer problems, post-traumatic stress and conduct problems
Nyamukapa et al. (2008). Zimbabwe	Quantitative-comparative study and cross-sectional study	5321 HIV/AIDS orphans (aged 12 to 17 years)	Self constructed measure of psychosocial distress using principle components analysis	HIV/AIDS orphans had more psychosocial distress than non-orphans. For both genders, paternal, maternal and double orphans exhibited more-severe distress than non-orphans and non-vulnerable children
Cluver et al. (2007). South Africa	Quantitative-comparative study and cross-sectional study	425 HIV/AIDS orphans, 241 non-HIV/AIDS orphans, 278 non-orphans (aged 10 to 19 years)	CDI, RCMA, SDQ, and Child PTSD checklist.	HIV/AIDS orphans were more likely to report symptoms of depression, suicidal ideation, peer relationship problems, post-traumatic stress, and delinquency and conduct problems than both non- HIV/AIDS orphans and non-orphans
He and Ji (2007). China	Quantitative-comparative study and school based cross-sectional design	93 HIV/AIDS orphans and 93 non-orphans (aged 8 to 15 years)	BDI , SES, ISLQ, age-sex-specific criteria recommended by the WHO, UNICEF and UNU (2001)	The nutritional status of both HIV/AIDS orphans and non-orphans was extremely poor according to the prevalence of stunting, underweight, wasting and anemia. Depression, low self-esteem and lower quality of life were more frequent in HIV/AIDS orphans
Nyamukapa et al. (2006). Zimbabwe	Quantitative-comparative study and cross-sectional study	5321 children that included HIV/ AIDS orphans and vulnerable children (aged 12 to 17 years)	Newly constructed, Un- standardized measure used to assess psychosocial disorders	HIV/AIDS orphans reported higher psychosocial disorder and symptoms in high intensity than vulnerable children. Female gender living in an urban area and poor household had more psychosocial difficulties
Cluver and Gardner (2006). South Africa	Quantitative-comparative study and cross-sectional study	30 HIV/AIDS orphans and 30 non orphans (aged 6 to 19 years)	SDQ and IES-8.	HIV/ AIDS orphans were more likely to view themselves as having no good friends, to have marked concentration difficulties and to report frequent somatic symptoms but were less likely to display anger through loss of temper. HIV/ AIDS orphans were more likely to have PTSD
Gilborn et al. (2006). Zimbabwe	Quantitative-comparative study and exploratory cross-sectional survey	1258 HIV/AIDS orphans and vulnerable children (aged 14 to 20 years)	Newly constructed, un-standardized measure used to assess psychosocial distress	HIV/AIDS orphans reported higher stress and psychosocial distress and lower psychosocial wellbeing. Increase age and female gender were associated with higher Internalizing problems
Wild et al. (2006). South Africa	Quantitative-comparative study and cross-sectional study	81 HIV/AIDS orphans, 78 non-HIV/AIDS orphans and 43 non-orphans (aged 10 to 19-years)	RMAS, CDI, CBC and SEQ	Non- HIV/AIDS orphans reported more depression and anxiety than non-orphans, with HIV/AIDS orphan scores falling between the two groups and not differing significantly from either. Non-HIV/AIDS orphans showed lower self-esteem than both non-orphans and HIV/AIDS orphans
Atwine et al. (2005). Uganda	Quantitative-comparative study and cross-sectional study	123 HIV/AIDS orphans and 110 non-orphans (aged 11 to 15 years)	BDI	HIV/AIDS orphans had greater risk for higher levels of anxiety than non-orphans. High levels of psychological distress was found in HIV/AIDS orphans
Chatterji et al. (2005). Rwanda	Quantitative- quasi-experimental pre-post-test design and cross-sectional study	HIV/AIDS orphans, children with chronically ill caregivers and non-orphans (n = 1160), (aged 6 - 12 years)	Newly constructed, Un- standardized worry/ stress scale	HIV/AIDS orphans and children living with sick caregivers reported higher distress than non-orphans
Bhargava (2005). Ethiopian	Quantitative-comparative study and cross-sectional study	479 HIV/AIDS orphans, 574 non-HIV/AIDS orphans (aged 10 to above years)	MMPI	HIV/AIDS orphans reported more social and emotional adjustment problems than other orphans

Table 1. Contd.

Rotheram-borus et al. (2001, 2004). USA	Quantitative-comparative study and longitudinal study	73 HIV/AIDS orphans and 138 children living with HIV-infected parents	Brief Symptom Inventory	HIV/AIDS orphans exhibited significantly higher internalizing and externalizing problems than children living with HIV-infected parents
Makame et al. (2002). Tanzania	Quantitative-comparative study and cross-sectional study	41 HIV/AIDS orphans and 41 non-orphans	Newly constructed, non-standardized internalizing problems scale	HIV/AIDS orphans showed higher internalizing difficulties than non-orphans. Age, gender, living apart from siblings and length of time with current caregiver was not associated with psychological distress
Manuel et al. (2002). Mozambique	Quantitative-comparative study and cross-sectional study	76 HIV/AIDS orphans and 74 non-orphans	Non-standardized internalizing problems scale	HIV/AIDS orphans reported higher depressive symptoms and were unlikely to have a trusted friend or adult. Caregivers' depression level correlated with children's depression and negatively with social support
Segendo and Nambi (1997). Uganda	Quantitative-comparative study and cross-sectional survey	169 HIV/AIDS orphans, 24 non-orphans (aged 6-20 years)	Newly constructed, non-standardized measure of depression	HIV/AIDS orphans showed higher levels of depression and lower optimism about life compared to non-orphans
Poulter et al. (1996). Zambia	Quantitative-comparative study and cross-sectional survey	22 households with orphans, 66 households with HIV+ caregiver or parent and 75 control families	Rutter scales	Conduct problems was low among all the children. HIV/AIDS orphans reported high levels of unhappiness and worry.

Full form of all scales: Children's Depression Inventory (CDI) (Kovacs, 1992), Children's Manifest Anxiety Scale-Revised (RCMAS) (Reynolds and Richmond, 1978), Child PTSD Checklist (Amaya-Jackson, 1995), Multiple Functions and Multiple Resources PSS Scale (PSS-MFMR) (Sherbourne and Stewart, 1991), Center for Epidemiological Studies Depression Scale for Children (CES-DC) (Fendrich et al., 1990), Children's Loneliness Scale (CLS) (Asher et al., 1984; Wang, 1993), Hospital Anxiety and Depression Scale (HADS) (Martin, 2005), Rosenberg's self-esteem (RSE) (Rosenberg, 1965), Multidimensional scale of perceived social support (MSPSS) (Zimet et al., 1988), Trauma Symptom Checklist for Children (TSCC) (Briere, 1996; Li et al., 2009), Trusting Relationship Questionnaire (TRQ) (Mustillo et al., 2005), PedsQL 4.0 Generic Core Scale (Mapi Research Institute, 2002), Modified version of the Children Future Expectation Scale (CFES) (Bryan et al., 2005), The Hopefulness about Future, and The Perceived Control over Future scales (HS, PCFS) (Whitaker et al., 2000), Life Incidence of Traumatic Events-Student Form (LITE-S) (Greenwald and Rubin, 1999), Regional Psychosocial Support Initiative (REPSSI) (www.repssi.org), Beck Depression Inventory (BDI) (Beck et al., 1961), Life Quality for Children and Adolescents (ISLQ) (Zaohuo et al., 1998), The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997), Impact of Events Scale (IES) (Dyregrov and Yule, 1995), Child Behavior Checklist (CBC) (Achenbach, 1991), Self-esteem Questionnaire (SEQ) (DuBois et al., 1996), Minnesota Multiphasic Personality Inventory 2 (Hathaway and McKinley, 1989), The Rutter Scales (Rutter et al., 1970).

had increased internalizing problems compared with non-orphans ($p < 0.0001$) and 34% reported that they had contemplated suicide in the past year, compared to 12% of non-orphans ($p < 0.016$).

Manuel (2002) in rural Mozambique used a non-standardized internalizing problems questionnaire adapted from the instrument used by Makame et al. (2002). They interviewed 76 HIV/AIDS orphans, 74 non-orphans from the area and their caretakers. HIV/AIDS orphans had higher depression scores ($p < 0.001$), were more likely to be bullied ($p < 0.001$) and were less likely to have a trusted adult or friends ($p < 0.001$). Caregivers of HIV/AIDS orphans reported more depression ($p < 0.001$) and less social support than non-orphans.

In New York, an intervention-based study by

Rotheram-Borus et al. (2001) and Rotheram-Borus et al. (2004) used longitudinal assessments with standardized instruments. They compared 73 HIV/AIDS orphans with vulnerable children (138). After two years of parental death, the researchers found that HIV/AIDS orphans reported more emotional distress on the Brief Symptom Inventory (Derogatis and Melisaratos, 1983) and more behavioral problem for example, smoking, alcohol, crime and aggressive behavior than vulnerable children ($p < 0.05$). Other factors that increased child distress after two years of parental death were baseline severity of parental physical health symptoms and parental emotional distress. Atwine et al. (2005) in rural Uganda interviewed 123 HIV/AIDS orphans and 110 non-orphans, aged 11 to 15 years. Results using the Beck Youth Inventory (BYI, 1961) revealed that HIV/AIDS

orphans were more likely to be anxious (OR = 6.4), depressed (OR = 6.6), displayed anger (OR = 5.1) and showed significantly higher scores for feelings of hopelessness and suicidal ideation. Orphan status was revealed as the only significant predictor of outcomes on the basis of the asked questions related to current and past living conditions and a multivariate analysis of factors with possible relevance for BYI outcomes. In Rwanda and Zambia, Chatterji et al. (2005) compared HIV/AIDS orphans, children with chronically ill caregivers and non-orphans ($n = 1160$), aged 6 to 12 years. They were asked to complete a seven-item non-standardized worry/ stress scale developed from existing instruments. Results revealed that Zambian HIV/AIDS orphans scored higher than children with ill caregivers, who scored higher than non-orphans ($p < 0.04$). In

Rwanda, there were no differences between HIV/AIDS orphans and children with ill caregivers, but both groups scored higher than non-orphans ($p < 0.03$). Worry/stress was correlated with socioeconomic status ($p < 0.03$) and community cohesion ($p < 0.001$) in Rwanda.

In Ethiopia, Bhargava (2005) analyzed data from a survey of 479 HIV/AIDS orphans and 574 non-HIV/AIDS orphans. Orphans completed 60 items from the 657-item Minnesota Multiphasic Personality Inventory 2 (Hathaway and McKinley, 1989) with subscales of social adjustment ($\alpha = 0.80$) and emotional adjustment ($\alpha = 0.86$). HIV/AIDS orphan showed more emotional and social adjustment problems and HIV/AIDS orphan girls reported higher levels of difficulties than boys. Presence of the father, school attendance, household income, clothing conditions, distribution of food and emotional support within the fostering family came out as significant predictors of higher scores in both groups.

Cluver and Gardner (2006) interviewed 30 HIV/AIDS orphans and 30 non-orphans in Cape Town, South Africa. Standardized questionnaires - the strengths and difficulties questionnaire (Goodman, 1997) and the impacts of events scale (Dyregrov and Yule, 1995) were used. Both groups scored high for peer problems, emotional problems and total scores. However, HIV/AIDS orphans were more likely to view themselves as having no good friends ($p = 0.002$), have marked concentration difficulties ($p = 0.03$) and to report frequent somatic symptoms ($p = 0.05$), but were less likely to display anger through loss of temper ($p = 0.03$). HIV/AIDS orphans were more likely to report constant nightmares ($p = 0.01$) and 73% scored above the cut-off for posttraumatic stress disorder (PTSD).

Nyamukapa et al. (2006) in Zimbabwe utilized factor analysis to compare HIV/AIDS orphans and non-orphans ($n = 5,321$), aged 12 to 17 years. A 16-item non-standardized scale, with items from the child behavior checklist, Rand mental health inventory and Beck depression inventory were used to measure psychosocial disorders. Findings showed more psychosocial disorders amongst HIV/AIDS orphans ($p < 0.05$), which remained when controlling for poverty, gender, age of household head, school enrolment and adult support. Depression showed group differences, whereas anxiety did not. In Zimbabwe, Gilborn et al. (2006) interviewed 1258 HIV/AIDS orphans and vulnerable children, comparing groups by exposure to various psychosocial support programmes. A non-standardized instrument was developed from formative qualitative research and included six items suggestive of depression and two items suggestive of poor psychosocial well-being. HIV/AIDS orphans reported higher stress ($p < 0.05$) and more psychosocial distress ($p < 0.05$).

In the Eastern Cape of South Africa, Wild et al. (2006) completed a study with 10 to 19 years old adolescents. They compared 81 HIV/AIDS orphans, 78 non-HIV/AIDS orphans and 43 non-orphans. HIV/AIDS orphans were

recruited through NGOs. They used the revised children's manifest anxiety scale (Reynolds and Richmond, 1978), the 10-item child depression inventory (Kovacs, 1992), items from the child behavior checklist (Achenbach, 1991) and items from the self-esteem questionnaire (DuBois et al., 1996). The study also looked at potential moderating factors of adult, peer and neighborhood connection and regulation and psychological autonomy. Findings showed that non-HIV/AIDS orphans reported more depression ($p < 0.05$) and anxiety ($p < 0.05$) than non-orphans, with HIV/AIDS orphans scores falling between the two groups and not differing significantly from either. There were no group differences in terms of externalizing problems. Non-HIV/AIDS orphans showed lower self-esteem than both non-orphans and HIV/AIDS orphans. Of the potential protective factors for all orphans, greater autonomy from caregiver and greater neighborhood regulation were significantly associated with lower anxiety ($p < 0.001$). Greater connection with caregiver and greater peer regulation were associated with lower depression ($p < 0.001$).

In China, He and Ji (2007) assessed the influence of HIV/AIDS orphanhood on children's nutritional status, psychological well-being and life quality. 186 children aged 8 to 15 years (93 HIV/AIDS orphans and 93 non-orphans) from a rural area of Henan Province were surveyed in a cross-sectional and matched pairs study on nutritional status, psychological health and life quality. They found no compelling evidence for poorer nutritional status in orphans. The nutritional status of both HIV/AIDS orphans and non-orphans was extremely poor according to the prevalence of stunting, underweight, wasting and anemia. Depression, low self-esteem and lower quality of life were common in orphans. These differences mainly existed in boys' groups. No significant differences were found between paternal, maternal and double orphans or orphans in orphanages or extended families. Regression analysis revealed that orphanhood leads to low self-esteem and high depression which contributes to lower quality of life and mediates the association between orphanhood and quality of life.

In Cape Town, South Africa, Cluver et al. (2007) interviewed 1061 children. 455 were HIV/AIDS orphans, 278 were non-orphans and 243 were orphans as a result of deaths from other causes and 85 orphans as a result of deaths from unknown causes. Standardized psychological questionnaires used were: child depression inventory (Kovacs, 1992), the revised children's manifest anxiety scale (Reynolds and Richmond, 1978), the child behaviour checklist (Achenbach, 1991) and the children's PTSD checklist (Amaya-Jackson et al., 2000) with many scales matched to those used in the South African Eastern Cape study (Wild et al., 2006) to allow for cross-provincial comparison. HIV/AIDS orphans reported higher levels of depression, peer problems, post-traumatic stress, conduct problems and delinquency ($p < 0.001$) than both non-orphans and orphans as a result of deaths

from other causes. Differences remained when controlling for socio-demographic factors such as age, gender, poverty, migration and household composition. No differences were found in terms of anxiety.

In Zimbabwe, Chitiyo et al. (2008) sought to ascertain the effectiveness of psychosocial support (PSS) among AIDS orphans in improving their schooling outcomes. A total of 20 HIV/AIDS orphans with ages ranging from 10 to 14 years, attending four different primary schools located in the rural wards of Mberengwa district were involved in this study. All the HIV/AIDS orphans showed signs of emotional need and they were lagging behind in their academic work. Psychosocial support was provided to these children over a period of eight months resulting in improvements in several areas, including schoolwork during and after the intervention period. In Zimbabwe Nyamukapa et al. (2008) measured the psychosocial effect of orphanhood on a sub-Saharan African population. He used data from 5321 children aged 12 to 17 years who were interviewed in a 2004 national survey in Zimbabwe. A measure was constructed using principle components analysis to measure psychosocial distress. A regression analysis was used to obtain standardized parameter estimates of psychosocial distress and odds ratios of early sexual activity. Results found that HIV/AIDS orphans had more psychosocial distress than non-orphans. For both genders, paternal, maternal and double orphans exhibited more-severe distress than did non-orphans and non-vulnerable children. Orphanhood remained associated with psychosocial distress after controlling for differences in more-proximate determinants. Maternal and paternal orphans were significantly more likely than non-orphans, non-vulnerable children to have engaged in sexual activity. These differences were reduced after controlling for psychosocial distress.

In South Africa, Cluver et al. (2008) examined associations between AIDS-orphanhood status, poverty indicators and psychological problems (depression, anxiety, post-traumatic stress, peer problems, delinquency, and conduct problems) among children and adolescents in townships surrounding Cape Town, South Africa. One thousand and twenty-five children and adolescents completed standardized and culturally sensitive cross-sectional surveys. HIV/AIDS orphans had more psychological problems including depression, peer problems, post-traumatic stress, and conduct problems. Specific poverty indicators including food security, access to social welfare grants, employment in the household and access to school were associated with better psychological health. Poverty indicators mediated associations of HIV/AIDS-orphanhood with psychological problems. Food security showed the most consistent association with reduced psychological problems. It was concluded that poverty alleviation measures have the potential to improve psychological health for HIV/AIDS-orphans in South African townships.

Kuzinger et al. (2008) compared HIV/AIDS orphans

and non orphans regarding educational status and delay in school using data collected in 3 low income communities affected by AIDS in Tanzania and Burkina Faso. HIV/AIDS orphans were significantly more likely not to attend school than were non-orphans and also to be delayed when in school, though after controlling for confounders the risk was borderline and non-significant. Multivariate analysis indicated that variables such as age, religion, and origin of family, the relation between the child, the head of household and the dependency ratio of the household better explained the differences in education than orphan status.

In China, Zhang et al. (2009) designed to explore the effect of future orientation in mediating the relationship between traumatic events and mental health of HIV/AIDS orphans in rural China. Cross sectional data were collected from 1221 children affected by HIV/AIDS (755 AIDS orphans and 466 vulnerable children). Future orientation among children was measured using three indicators (future expectation, hopefulness toward the future, and perceived control over the future). Measures of mental health consisted of depression, loneliness and self-esteem. Children's experience of any traumatic events was measured using a modified version of the Life Incidence of Traumatic Events-Student Form. Mediation analysis was conducted using structural equation modeling (SEM) methods. Results found that most of the traumatic indicators were negatively associated with future expectation, hopefulness, perceived control, self esteem and positively associated with depression and loneliness. The SEM of mediation analysis demonstrated an adequate fit. Future orientation fully mediated the relationship between traumatic events and mental health and accounted for 67.9% of the total effect of traumatic events on mental health.

In China, Lin et al. (2010) conducted a study on 755 HIV/AIDS orphans (children who had lost one or both parents to HIV/AIDS), 466 vulnerable children (who lived with HIV-infected parents) and 404 non-orphans (who did not experience HIV-related illness and death in their families) with three objectives: (1) Examine the psychometric properties of two parallel measures of HIV-related stigma (that is, perceived public stigma and children's personal stigma against PLWHA) among HIV/AIDS orphans, vulnerable children and comparison children; (2) examine whether expressions of stigma measures differ by child's sex, developmental stage, family socio-economic status or orphanhood status (that is, HIV/AIDS orphans, vulnerable children, and comparison children) and (3) examined the association between HIV-related stigma and children's psychosocial adjustments among status HIV/AIDS orphans, vulnerable children, and comparison children. The measures included perceived public stigma, personal stigma, depressive symptoms, loneliness, self-esteem, future expectations, hopefulness about the future, and perceived control over the future. Results found that both stigma scales were positively

associated with psychopathological symptoms (for example, depression, loneliness) and negatively associated with psychosocial wellbeing (for example, self-stigma, positive future expectation, hopefulness about future, and perceived control over the future). Both stigma measures contribute to children's psychosocial problems independent of their orphanhood status and other key demographic factors.

In China, Xu et al. (2010) did a study to explore the main influencing factors of the health related quality of life (HRQL) of children living in HIV/AIDS-affected families. The HRQL of 116 children aged 8 to 17 years from HIV/AIDS-affected families and of 109 children from unaffected families was evaluated by the Chinese Version of PedsQL TM 4.0. Some potential influencing factors were investigated like demographic characteristics, the families' social and economic status, foster models, children's self-esteem etc. The HRQL of the children's caregivers may also have been among the influencing factors, as measured by the SF-36. Multiple regression analysis was used to explore the influence of independent variables on children's HRQL. Results showed that lower scores of children's self-esteem and caregivers' SF 36 reduced the majority of the PedsQL domains and children from HIV/AIDS-affected families reported lower scores of HRQL than those from unaffected families, especially in the psychosocial functioning, emotional functioning and school functioning domains. Children living with grandparents reported higher PedsQL scores in psychosocial health, social functioning and school functioning. Disclosure of parental HIV/AIDS status reduced children's PedsQL scores in emotional functioning and social functioning. Caregivers spending more hours accompanying the children appeared to increase the PedsQL scores in psychosocial health and school functioning.

In China, Zhao et al. (2010) compared psychological symptoms among double HIV/AIDS orphans (that is, children who lost both of their parents to HIV/AIDS) who were in the care of different family-based caregivers (that is, surviving parent, grandparents, other relatives, and non-relatives) before they were replaced in orphanages. The participants included 176 double HIV/AIDS orphans from four HIV/AIDS orphanages in rural China. Prior to being replaced in AIDS orphanages, these children had received family-based care by different caregivers, which included surviving parent (38%), grandparents (22%), other relatives (19%) and non-relatives (22%). Both bivariate and multivariate analyses suggested that children who were previously cared for by non-relatives scored significantly higher in traumatic symptoms, depression and loneliness scales than children who were previously cared for by their surviving parent, grandparents and other relatives. Children in the care of grandparents reported the best scores on all psychological measures among children in the care of non-parent relatives. Multivariate analysis, controlling for

children's gender, age, length in orphanages, number of household replacements and total duration of replacement revealed that the type of caregivers were significantly associated with psychological problems.

In China, Hong et al. (2010) examined the relationship between perceived social support (PSS) and psychosocial wellbeing among HIV/AIDS orphans. A cross-sectional survey was administered to 1,625 children (aged 6 to 18 years) in Henan Province, an area with a large number of HIV cases due to unhygienic commercial blood/plasma collection. The sample included 296 double orphans (children who lost both parents to HIV/AIDS), 459 single orphans (children who lost one parent to HIV/AIDS), 466 vulnerable children (children living with HIV-infected parents) and 404 non-orphans (children who did not experience HIV-related illness and death in family). Data suggests that vulnerable children reported the lowest level of PSS compared to HIV/AIDS orphans and non-orphans. Level of PSS was significantly and positively associated with psychosocial wellbeing even after controlling for potential confounders. The study underscores the importance of providing social support and mental health services for AIDS orphans in China.

In China, Zhao et al. (2010) compared psychosocial well-being between paternal and maternal orphans on a sample (N = 459) of children who had lost one parent to HIV and who were in family-based care. Measures included academic marks, education expectation, trusting relationships with current caregivers, self-reported health status, depression, loneliness, posttraumatic stress and social support. No significant differences were found between maternal and paternal orphans, except that paternal orphans reported better trusting relationships with caregivers than maternal orphans. Children with a sick parent reported significantly higher depression, loneliness, posttraumatic stress and social support scores than children with a healthy surviving parent. Findings underscore the importance of psychosocial support for children whose surviving parent is living with HIV or another illness.

In China, Zhao et al. (2011) assessed the relationship between perceived social support (PSS) and psychosocial wellbeing on 1,299 rural HIV/AIDS orphans in central China. They examined the relative importance of PSS functional measures (informational/emotional, material/tangible, affectionate and social interaction) and PSS structural measures (family/relatives, teachers, friends, and significant others) in predicting psychosocial outcomes including internalizing problems, externalizing problems and educational resilience. Both functional and structural measures of PSS provided reliable measures of related but unique aspects of PSS. The findings of the study confirmed the previous results that PSS is highly correlated with children's psychosocial wellbeing and such correlations vary by functions and sources of the PSS as well as different psychosocial outcomes. The findings in the study suggested the roles of specific social

support functions or resources needed to be assessed in relation to specific psychosocial outcome and the context of children's lives. The strong association between PSS and psychosocial outcomes underscores the importance of adequate social support to alleviate stressful life events and improve psychosocial wellbeing of HIV/AIDS orphans.

In China, Hong et al. (2011) examined the relationship between HIV/AIDS orphans' care arrangement and their psychosocial well-being among a sample of HIV/AIDS orphans in rural China. A total of 296 children who lost both parents to HIV/AIDS participated in the study, including 176 in orphanages, 90 in kinship care and 30 in community-based group homes. All participants completed a cross-sectional survey assessing their traumatic symptoms, physical health and schooling. Data revealed that the HIV/AIDS orphans in group homes reported the best outcomes in three domains of psychosocial well-being, followed by those in the orphanages and then the kinship care. The differences in psychosocial well-being among the three groups of children persist after controlling for key demographic characteristics. The finding suggests that the appropriate care arrangement for HIV/AIDS orphans should be evaluated within the specific social and cultural context where the orphans live. In resource-poor regions or areas stricken hardest by the HIV/AIDS epidemic, kinship care may not sufficiently serve the needs of HIV/AIDS orphans.

In South Africa, Cluver et al. (2012) investigated a 4-year longitudinal follow-up of HIV/AIDS-orphans with non-HIV/AIDS orphans and non-orphans. 1021 children (M = 13.4 years, 50% female, 98% isiXhosa-speaking) were interviewed in 2005 and followed up in 2009 with 71% retention (49% female, M = 16.9 years), in poor urban South African settlements. Children were interviewed using socio-demographic questionnaires and well-validated standardized scales for assessing depression, anxiety, and post-traumatic stress. Data was analyzed using mixed-design analysis of variance (ANOVA) and backward-stepping regression. Results revealed that AIDS-orphans showed higher depression, anxiety and post-traumatic stress disorder scores in both 2005 and 2009 when compared with non-HIV/AIDS orphans and non-orphans. Backward-stepping regression, controlling for baseline mental health and socio-demographic cofactors such as age, gender and type of bereavement revealed that being HIV/AIDS orphans in 2005 was associated with depression, anxiety and PTSD scores in 2009. This was not the case for non-HIV/AIDS orphans or non-orphans. Age interacted with orphan status, such that there was a steep rise in psychological distress in the HIV/AIDS-orphans group, but no rise with age amongst non-HIV/AIDS orphans and non-orphans.

In South Africa, Cluver et al. (2012) conducted a study on 1025 youth, they were interviewed in 2005 and followed up in 2009 (71% retention). Participants completed standardized measures of anxiety, depression, and posttraumatic stress. Comparison groups were youth

who were HIV/AIDS-orphans, non-HIV/AIDS orphans and non-orphans and those whose caregivers were sick with HIV/AIDS, sick with another disease or healthy. Results of longitudinal analyses showed that both HIV/AIDS-orphanhood and caregiver HIV/AIDS sickness predicted increased depression, anxiety and posttraumatic stress symptoms over a 4-year period, independently of socio-demographic cofactors and of each other. Caregiver sickness or death by non-HIV/AIDS causes and having a healthy or living caregiver did not predict youth symptomatology. Youths simultaneously affected by caregiver HIV/AIDS sickness and HIV/AIDS-orphanhood showed cumulative negative effects.

Qualitative study

Xu et al. (2009) investigated the psychosocial well-being of children in HIV/AIDS-affected families in rural China from the child's and caregiver's perspectives. Semi structured interviews were conducted among children living in HIV/AIDS-affected families (n = 16), their caregivers (n = 16) and key community informants (n = 5). Findings showed that all of the children relied heavily on caregivers and peers to gain psychological support. Children's psychosocial problems included fear, anxiety, grief, loss of self-esteem and confidence. Stigma towards children existed including isolation, ignorance and rejection. The study illustrates that HIV/AIDS has impacted negatively on the psychosocial wellbeing of orphans.

Quantitative and Qualitative data studies

In Zimbabwe, Nyamukapa et al. (2010) used quantitative and qualitative method to measure the effects of orphanhood on psychological distress. Depression and anxiety scales were adapted from WHO self-report questionnaire and 14 group discussions with children were done to assess psychological distress. AIDS orphans were found to suffer greater psychological distress than non-orphans (sex- and age-adjusted coefficient: 0.15; 95% CI: 0.03 to 0.26; P = 0.013). Trauma, being out-of-school, being cared for by a non-parent, inadequate care, child labor, physical abuse, stigma and discrimination were the contributing factors for increased level of distress in AIDS orphans. Increased mobility and separation from siblings did not contribute to greater psychological distress in this study. Over 40% of HIV/AIDS orphans in the sample lived in households receiving external assistance. However, receipt of assistance was not associated with reduced psychological distress. In Ethiopia, in Addis Ababa, Getachew et al. (2011) compared the psychological distress of HIV/AIDS orphans to non-HIV/AIDS orphans and factors related to it. Comparative cross-sectional design combining both quantitative and qualitative methods was used. An equal number of 438 subjects were included in

this study with each group of HIV/AIDS and non-HIV/AIDS orphans between 11 to 18 age groups.

Structured interviewer administered questionnaire and scales including Hospital Anxiety and Depression Scale (HADS), Rosenberg's self-esteem scale and multidimensional perceived social support scale (MPSS) scale were used. Results found that among the study participants, 279 (34.7%) orphans where 157 (39.1%) of HIV/AIDS and 122 (30.3%) of non-AIDS orphans were depressed in the week before the survey. Moreover, 301 (37.4%) orphans where 164 (40.8%) of HIV/AIDS and 137 (34.1%) of non-HIV/AIDS once were anxious. However, the difference observed in depression and anxiety [OR (95% CI) = 1.164 (0.733, 1.754) and 0.88 (0.57, 1.33)] was not statistically significant. The main predictor variables of depression and anxiety in both study groups were their perceived social support and self-esteem. Factors such as discrimination, school enrollment, physical abuse, child labor were also identified as predictors.

Literature review also provides some conflicting and contradictory data related to anxiety of HIV/AIDS orphans. High anxiety level of HIV/AIDS orphans have been found in some studies and factors like recent death in the family (Nyamukapa et al., 2010), seriously ill or sick (AIDS-affected) caregivers (Cluver et al., 2012), inadequate care, child labour, physical abuse, school dropout, food insecurity, unemployment (Nyamukapa et al., 2010), stigma and discrimination, changes in the interpersonal relationship (Xu et al., 2009) and the events of bad happenings in life (Gilborn et al., 2006) seem to be attributing it. On the other hand, anxiety was found to be low in some studies. The possible explanation could be the same state of all children – death of parents, same living situations, receipt of good welfare grants, government initiatives, good caregivers, and healthy psycho-social environment of the rehabilitation centre.

The nature and effects of psychosocial support also appeared to vary across studies. High PSS level of HIV/AIDS orphans was found in China and it is due to the initiative of Chinese government (Hong et al., 2010). They have paid more attention to HIV/AIDS double orphans in terms of welfare and social support. Whereas others had low PSS level because they experience more HIV-related stigma and stigmatization due to ongoing parental HIV infections, inadequate care, child labour, physical abuse, school dropout, food insecurity, unemployment (Nyamukapa et al., 2010), changes in the interpersonal relationship (Xu et al., 2009) and less care and support from the rehabilitation centres and caregivers.

Mental health of HIV/AIDS orphans

Death of parents introduces a major change in the life of a child. This change may involve moving from a middle or

upper-class urban home to a poor rural relative's home, separation from siblings, forced to live on own and constituting child-headed families. All these changes easily affect not only the physical but also the psychological well-being of a child. Review of the literature suggests that possible factors such as socioeconomic status, abuse, social support, family disruption and stigma pose psychological difficulties on HIV/AIDS orphans. Parental illness and death also increase their economic burden causing HIV/AIDS orphans to suffer from inadequate food insecurity, stigma, bullying, shelter, material goods, access to health services and withdrawal from school (Cluver and Orkin, 2009). On the basis of literature review, the following mental health status of HIV/AIDS orphans comes into light. They severely experience negative emotions like anxiety (Atwine, 2005; Pelton and Forehand, 2005; Xu et al., 2009), high emotional and psychological distress (Nyamukapa et al., 2010), hopelessness, loneliness, frustration (Mbozi et al., 2006; Lin et al., 2010), depression (Tyrer, 2010; Kaggwa and Hindin, 2010; Getachew et al., 2011), suicidality (Makame et al., 2002) and post-traumatic stress symptoms (Cluver and Gardner, 2006; Cluver et al., 2007).

Behavioral problems like peer problems (Draimin et al., 1992), conduct problems (Rotheram-Borus, 2004; Lee et al., 2007), delinquency (Cluver et al., 2007), antisocial behavior (Wild et al., 2006). They also experience low self-esteem (Xu et al., 2010; Lin et al., 2010; He and Ji, 2007), lower future expectation and optimism (Zhao et al., 2010; Segendo and Nambi, 1997) and higher levels of psychological difficulties like emotional detachment, behavioral regression, withdrawal, guilt, fear (Stein, 2003; Foster and Germann, 2002; Cluver et al., 2008), poor school functioning and academic performances (Xu et al., 2010). HIV/AIDS orphans living with grandparents, in community and orphanages, had better mental health and psychological well-being than children living with non-relatives and kinship care (Hong et al., 2011; Zhao et al., 2010).

RECOMMENDATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

HIV/AIDS is an emerging area of research and researches are being conducted in understanding the state of HIV/AIDS orphans. Still, there are needs for more aggressive and systematic quantitative research aimed to assess: (1) what are the psychological risks to HIV/AIDS orphans (mental health, psychological well-being, quality of life etc.); (2) the causes underlying them and mediating processes responsible for them; (3) the factors that might enhance mental health, psychological well-being, overall development and quality of life; (4) evidence based intervention programmes that can be imparted for their well-being. For this, well designed studies are required

which would compare HIV/AIDS orphans in multiple domains with non-HIV/AIDS orphans and non-orphans drawn from the same communities and who live in different institutional cares. Such research is important for determining which components of the non-HIV/AIDS orphan's and non-orphan's responses are common to HIV/AIDS orphans and what is unique about HIV/AIDS orphans that require special attention and resources to meet their needs.

Long-term, prospective longitudinal studies are also required to assess HIV/AIDS orphan's mental health, physical health status, medication, psychosocial needs and coping strategies at various periods of life, to investigate how short-term problems, difficulties and distress relates to long-term outcomes and to evaluate the effectiveness of intervention programs. Such quantitative research should be supported by qualitative studies describing children's experience of living with HIV/AIDS in the orphanage, how they obtain emotional support and how these variables are associated with their good mental health.

Researchers investigating the mental health of HIV/AIDS orphans may confront several methodological challenges for example, lack of consensus about how to define the population, availability of sample, small sample sizes, recruitment of research team, interest of researchers, availability of required measures, construction of new measures, data collection and data analysis etc. It is also tough for the researchers to elicit valid data from children relating to sensitive topics like emotional and behavioral responses, attitudes toward their current caretaker, and data relating to physical or sexual abuse. It is important to be aware of these methodological issues and how they might influence the results obtained. Nevertheless, it is not that these difficulties cannot be overcome and they should not stop researchers from attempting to learn more about the experiences and needs of HIV/AIDS orphans. As the numbers of HIV/AIDS orphans is rapidly growing into a pandemic, providing them with care and protection is an increasing national and global concern. We need to know how to identify HIV/AIDS orphans, how their mental health is at risk and develop evidence based prevention and intervention programmes. Methodologically rigorous research is required in this field, so that grass root realities are made available to the programmes and policies makers that are attempting to work for their wellbeing and betterment.

The authors being Indian wants to share that HIV/AIDS is an emerging topic of research in India. The research is basically focused regarding the medical and psychological aspects of HIV/AIDS. AIDS orphans are a highly ignored issue in India still. The researchers have explored it as a disadvantaged group and researches have started in this field. Several Indian researches can be found on HIV/AIDS related to adherence, risk-behaviors, mobile populations etc. and research has started in this field also.

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