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ORIGINAL PAPER

Socio-economic Status and Socio-emotional Health of Orphans in South Africa

Michele Pappin · Lochner Marais · Carla Sharp · Molefi Lenka · Jan Cloete · Donald Skinner · Motsaathebe Serekoane

Abstract This paper investigates the relationship between socio-economic status and emotional well-being of orphans in Mangaung, South Africa. Five hundred orphans aged 7–11 years participated in the cross-sectional study between 2009 and 2012. Data was collected by trained fieldworkers, who conducted face-to-face interviews and questionnaires with the orphans, their teachers and caregivers, and the heads of the households where the orphans resided. The caregivers, children and teachers all completed the Strengths and Difficulties Questionnaire in order to measure the orphans' mental health, while heads of household provided information about socio-economic indicators. STATA version 12 was used to perform multivariate data analyses to identify socio-economic factors associated with the mental health of orphans. Food security, access to medical services and a male caregiver were factors associated with better emotional well-being of orphans, whereas other variables such as household asset index and monthly household expenditure were not linked with the orphans' mental health. Two of the three variables (food security and access to medical services) associated with better emotional well-being of orphans are also government interventions to assist orphans. Further research is needed to determine whether other government programs also impact the emotional well-being of orphans.

Keywords Orphans · Emotional well-being · Socio-economic status · South Africa

M. Pappin (✉) · L. Marais · M. Lenka · J. Cloete
Centre for Development Support, University of the Free State, Third Floor, Flippie Groenewoud, Block E, IB 100, PO Box 339, Bloemfontein 9300, South Africa
e-mail: Pappinm@gmail.com

C. Sharp
Department of Psychology, University of Houston, 126 Heyne Building, Houston, TX 77024, USA

D. Skinner
Faculty of Health Sciences, Stellenbosch University, 9 Avoca Road, Rondebosch, Cape Town 7700, South Africa

M. Serekoane
Anthropology, University of the Free State, Third Floor, Flippie Groenewoud, Block E, Bloemfontein 9300, South Africa

Introduction

Recent estimates suggest that approximately 18 million children in Africa under the age of 18 have been orphaned as a result of HIV and AIDS [1], and it is projected that by 2015, between 9 and 12 % of South Africa's children will be orphans [2]. Although there is a growing body of research related to orphans and vulnerable children in Africa, there is only limited research on their mental health status [3–12].

Meanwhile, the link between socio-economic status (SES) and health status (both physical and mental) has been well established, although causality is still being debated. For instance, a range of studies has shown a relationship between lower SES and higher incidence of mental health problems [13–19]. As the World Health Organization's report on mental health states, "Mental disorders occur in persons of all genders, ages, and backgrounds. No group is immune to mental disorders, but the risk is higher among the poor, homeless, the unemployed, persons with low education" [20].

Specific SES indicators that have been found to be correlated with poor mental health outcomes include low income, unemployment, insecurity in respect of

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employment, hopelessness, social change (including newly urbanised populations), discrimination, lack of electricity, lack of tap water, arguing with one's spouse for economic reasons, over-crowding, educational status or illiteracy (in the case of children, the educational status of the caregiver), neighbourhood quality and a lack of material possessions [9, 17–19, 21–25]. Gender also plays a role, with the link between mental health problems and low SES being stronger for women [17]. Other researchers have demonstrated that there is a relationship between food insecurity and mental health, arguing that programmes to combat food insecurity will help to address mental health problems [26]. Particularly relevant to this research study, poverty and food security have been identified as factors that play a role in the mental health of orphans in South Africa [8, 12].

Although research has considered a variety of indicators of SES, there is no agreement regarding which indicators are the most important when it comes to health status [27]. Reijneveld and Schene [16] write that SES itself is the dominant factor in relation to mental health and that "Contextual factors of deprived urban areas give hardly any additional risk above that resulting from a low individual SES". On the other hand, some scholars argue that the relationship between poverty and mental illness may be the result of higher levels of stress and deprivation faced by the poor, while the World Health Organization identifies poor access to health care as a contributing reason [28, 29]. Others have claimed that the larger degree of vulnerability and poor physical health associated with poverty contribute to poorer mental health outcomes [17, 30]. This is an important point, as the comorbidity of poor mental health and poor physical health has been well established in the literature [17, 29].

Based on the established relationship between SES and mental health (for both children and adults), some have argued that improving the socio-economic conditions of poor households would lead to improved mental health outcomes. For instance, an Australian study concluded that: "Improving the social, economic and psychological conditions of families with Indigenous children has considerable potential to reduce the mental health inequalities within Indigenous populations and, in turn, to close the substantial racial gap in mental health" [31]. Other researchers have argued that programmes to combat food insecurity would address mental health problems [26].

Having considered the general relationship between SES and mental health, the focus now turns to SES and the mental health of children, orphans in particular. Children growing up in high-SES neighbourhoods perform better academically, even after controlling for family income and education. In contrast, children living in low-income neighbourhoods are more likely to have mental health issues, particularly externalising behaviours such as aggression or acting out [27, 32]. Research conducted in the Global North has even provided specific figures about the relationship between SES and the mental health of children. In Canada, for instance, poor children are 2.5 times more likely to have a mental illness than children from a higher SES [33]. Granted, the authors note that "the mechanisms through which income influences child psychosocial morbidity are poorly understood" [34].

Research examining the mental health of orphans and vulnerable children has largely focused on the impact that orphanhood has on mental health outcomes [3, 4, 8]. However, mental health outcomes are increasingly being linked not only to orphanhood, but also to poverty [8], and more specifically to malnutrition or food access [8, 17, 35]. Other factors found to correlate with the mental health of orphans include clothing, the presence of a father in the house and the attitudes of fostering families [35]. In fact, researchers argue that "the vulnerability effect of being an orphan is outweighed frequently and substantially by other factors—such as whether the child is urban or rural or whether his or her household is rich or poor" [36]. In other words, although orphanhood is an important aspect of vulnerability amongst children, other factors such as household wealth also play a significant role [36]. Notwithstanding the fact that their study produced inconclusive results, Lipman et al. [34] argue that the "elimination of child poverty remains a worthwhile goal". More recently, however, Huxley et al. argued that "The effects on mental health of major interventions designed to alter these inequalities are poorly understood" [37]. Other than the research cited above, there are few studies which investigate the relationship between the SES and mental health of orphans.

Against the above background, this paper investigates the relationship between SES and the mental health of orphans in Mangaung (Bloemfontein), South Africa. The study looks at most of the SES indicators discussed above (as independent variables) and the teacher- and caregiver-reported results from the Strengths and Difficulties Questionnaire (SDQ) (as dependent variables). A comparison of the responses from the two target groups will allow for a more complex understanding of the issues at hand.

Methods

Setting and Participants

This cross-sectional study was conducted in Mangaung Metropolitan Municipality, which is the largest urban settlement in the Free State province of South Africa. Five

hundred orphans aged 7–11 years (m = 9.2; SD = 1.3) were recruited into the study between 2009 and 2012 with the aid of faith based and community based organisations. Study participants included the orphans, their caregivers, their teachers and heads of household.

Data Collection

Data was collected by means of face-to-face interviews conducted by trained fieldworkers. Written informed consent was obtained from the teachers, heads of household and caregivers; the caregivers also consented to the orphans' participation in the study. The caregivers, orphans and teachers completed the SDQ (all responding to the children's mental health status), and the heads of household participated in a household interview. The orphans' self-reported data will not be discussed in this article because child self-report has poor predictive validity for mental health disorders and the developers of the SDQ recommend that self-report not be used for children younger than 11 years [38]. The current study was approved by all relevant institutional review boards.

Measures

Dependent Variable

The dependent variable in the study was the total difficulties (TD) score, derived from the SDQ. The SDQ is a 25-item screening measure of emotional and behavioural disorders designed for children aged 3–17 [39]. It has been translated into more than 60 languages and is available as a free download from www.sdqinfo.com. The SDQ utilises a three-point likert scale with response categories of 'not true', 'somewhat true' and 'certainly true'. Five sub-scales can be derived from the questionnaire, each comprised of five items. The sub-scales measure conduct problems, inattention-hyperactivity, emotional symptoms, peer problems and pro-social behaviour. The TD score is derived by summing the responses to the four problem behaviour sub-scales (i.e. emotional symptoms, conduct problems, inattention-hyperactivity and peer problems). Excellent reliability for the TD score has been demonstrated in European [40], American [41] and South African [4] populations, and clinical cut-offs for the TD score have been suggested based on research conducted in the United Kingdom (www.sdqinfo.com). The TD score can range from 0 (normal) to 40 (clinically diagnosable).

The data analysis was conducted using TD score as reported by caregiver (normal 0–13; borderline 14–16; clinically diagnosable 17 and above) and TD score as reported by teacher (normal 0–11; borderline 12–15; clinically diagnosable 16 and above). The internal consistency of the caregiver (0.72) and teacher (0.89) TD scores is good, and the teacher- and caregiver-reported TD scores are used as indicators of the overall socio-emotional health of the orphans.

Independent Variables

The independent variables analysed in this study were based on the literature review and included the following: gender of child; age of child; gender of caregiver; number of meals eaten per day by orphan; whether there was a day in the week that the orphan went without food; caregiver's level of education; whether the household had salary or business income; total monthly household expenditure; number of members in the household; number of household members per room; household asset index; presence of a refrigerator; total amount received in grants; and whether or not the family received a child support grant, foster care grant, disability grant, or old age pension. The household asset index was determined using Principal Component Analysis. The following variables were included in the asset index: brick house; electricity for cooking; electricity for lighting; electric stove; refrigerator; flush toilet; tap inside home; radio; television; phone; car; and access to medical services.

Data Analysis

STATA version 12 was used to perform quantitative data analysis. First, descriptive characteristics of the orphans and their SES were generated. Second, bivariate analyses were conducted between all the independent variables and the TD scores as reported by caregivers and teachers. Third, bivariate analyses were conducted between the independent variables in order to identify co-linearity of variables. Last, multivariate linear regression models were generated with TD score caregiver and TD score teacher as the dependent variables, alternating independent variables because of co-linearity. Independent variables significant at $p < 0.10$ in the bivariate analysis were included in the linear regression models.

Results

Demographic and Household Characteristics

Data was available for 499 of the 500 orphans interviewed. Two hundred and twenty three of the children (45 %) were AIDS orphans, and 55 % were orphaned by other causes. The mean TD score as reported by the caregivers was 14.5

Table 1 Demographics characteristics of study participants

Characteristic	Sample	Percentage (%)
Orphan type		
AIDS orphan	233	45
Orphaned by other causes	266	55
Total	499	100
Gender—orphan		
Female	253	51
Male	246	49
Total	499	100
Gender—caregiver		
Female	443	95
Male	23	5
Total	466	100
Education—caregiver		
No education	74	15
Primary school	207	41
Secondary school	210	42
Tertiary education	8	2
Total	499	100

	Years	Min–Max (years)
Age—orphan	9.2 (SD 1.3)	7–11
Age—caregiver	49.0 (SD 14.6)	21–91

(SD 6.2; min 1–max 35). The mean TD score as reported by the teachers was 12.9 (SD 7.4; min 0–max 33). The average age of the orphans was 9.2 years (SD 1.3; min 7–max 11 years), and 51 % of them were female. Of the caregivers, 95 % were female (for whom there was no missing data), 15 % had no education, 41 % had a primary school education, 42 % had a secondary education and 2 % had a tertiary qualification (Table 1).

Forty-three percent of the orphans received four meals per day, 51 % three meals per day and 6 % two meals a day. Just under half of the orphans were without food at least 1 day in a week (49 %).

The mean household size was 5.3 (SD 2.2; min 2–max 16), and the mean number of people per room was 2.5 (SD 1.9; min 0.4–max 12). Seventy-two percent (72.1 %) of the orphans lived in a brick house. Ninety-two percent (92.4 %) of the households used electricity for cooking, 89.2 % used electricity for lighting, 88.0 % had an electric stove, 75.6 % had a refrigerator, 63.9 % had a flush toilet, 28.7 % had a tap inside the home, 77.2 % had a radio, 79.4 % had a television, 61.9 % had a phone and 6 % had a car. Two-thirds of the orphans had access to medical services. The mean household expenditure per month was R1203 (SD 786; min R100–max R6458). (At the time of writing in May 2014, 1 USD = R10.60. However, between 2009 and 2012, the South African rand was stronger against the US dollar, ranging between 1 USD = R6.5 and 1 USD = R8.5.) (Table 2)

Table 2 Bivariate analysis of total difficulties score by demographic and socio-economic variables

Variable	Statistical test	TD score: caregiver report		TD score: teacher report	
		Test	*p* value	Test	*p* value
Child—female	*T* test	1.26	0.10	4.31	0.001
Child—age	Pearson correlation	0.06	0.14	−0.07	0.10
Caregiver—female	*t* test	2.07	0.02	0.22	0.41
Caregiver—education	One-way ANOVA	0.65	0.58	3.56	0.01
Number of meals per day	One-way ANOVA	11.84	<0.001	0.28	0.75
A day a week with no food	*t* test	6.06	<0.001	−1.93	0.03
Access to medical services	*t* test	1.81	0.03	0.07	0.47
Household expenditure	Pearson correlation	−0.08	0.06	−0.03	0.45
Household asset index	One-way ANOVA	0.67	0.61	0.74	0.56
Refrigerator present	*t* test	0.57	0.28	0.89	0.18
Employed household member	*t* test	0.70	0.24	1.37	0.08
Crowding	Pearson correlation	−0.03	0.49	0.04	0.34
Number of household members	Pearson correlation	0.005	0.91	0.04	0.30
Grants					
Child care grant	Pearson correlation	0.07	0.13	−0.01	0.69
Foster care grant	Pearson correlation	−0.06	0.21	0.05	0.24
Disability grant	Pearson correlation	0.005	0.91	−0.04	0.32
Old age pension	Pearson correlation	−0.02	0.59	0.09	0.04
Total grant income	Pearson correlation	−0.02	0.62	0.06	0.15

Caregiver-Reported TD Score

The bivariate analysis reported a statistically significant association between caregiver-reported TD score and the following independent variables: female caregiver, number of meals per day, going at least 1 day a week without food,

access to medical services and household expenditure. Orphans with female caregivers had a mean TD score of 14.72, whereas those with male caregivers had a mean TD score of 12.0 ($t = 2.07$; $p = 0.02$). It is important to note, though, that only 23 of the 499 caregivers were male.

The TD score of orphans declined with each additional meal they received in a day ($F = 11.84$; $p < 0.001$). The mean TD score of an orphan who received two meals a day was 17.06, while an orphan who received three meals a day had a score of 15.45, and an orphan who received four meals a day had a score of 13.09. Furthermore, orphans who did not receive food at least 1 day in a week had a TD score of 16.20, which was higher than the score of 12.96 for orphans who received food every day ($t = 6.06$; $p < 0.001$).

Orphans who had access to medical services had a TD score of 14.19, which was lower than the score of 15.26 for orphans who did not have access to medical services ($t = 1.81$; $p = 0.03$). Finally, higher household expenditure was associated with a lower TD score ($p = 0.08$; $p = 0.06$).

Teacher-Reported TD Score

The bivariate analysis showed a statistically significant association between the teacher-reported TD score and the following variables: female child, caregiver education, going at least 1 day a week with no food, an employed household member and an old age pension. Female orphans had a lower TD score (11.51) than male orphans (14.33) ($t = 4.31$; $p < 0.001$). The higher the level of education of an orphan's caregiver, the lower the orphan's TD score. Orphans whose caregiver had a tertiary education had a TD score of 11.0, compared to scores of 11.8 for orphans whose caregivers had a secondary education, 13.58 for orphans whose caregivers had a primary education and 14.48 for orphans whose caregivers had no education ($F = 3.56$, $p = 0.01$).

Orphans who did not receive food at least 1 day a week had a higher TD score (13.55) than orphans who received food every day (12.27) ($t = 1.93$; $p = 0.03$). Orphans who lived in a household where one of the household members was employed had a lower TD score (12.03) than orphans who lived in a household with no employment income (13.14) ($t = 1.37$; $p = 0.08$). Finally, orphans living in a household where a member of the household received an old age pension had higher TD scores than orphans who lived in a household where no old age pension was received ($p = 0.09$; $p = 0.04$).

Caregiver-Reported TD Score

In the multivariate linear regression models, female caregiver, four meals per day, going at least 1 day a week with no food, access to medical services and monthly household expenditure were found to have statistically significant associations with caregiver-reported TD score (Table 3). Orphans with a female caregiver had a score between 2.28 and 2.43 points higher than orphans whose caregivers were male (Model 1 and Model 2). Orphans who received four meals a day had a score between 3.64 and 3.77 points lower on the TD scale than orphans who received only two meals a day (Model 1 and Model 3). If there was at least 1 day in the week that an orphan did not receive food, the child's TD score was between 3.11 and 3.16 points higher than for orphans who received food every day (Model 2 and Model 4). Orphans with access to medical services had TD scores that were between 1.11 and 1.33 points lower than orphans who did not have access to medical services (Model 1 to Model 3). Lastly, orphans that lived in households with higher monthly expenditures had a TD score that was 0.0007 points lower than orphans who lived in households with lower monthly expenditures, but this effect size is insignificant (Model 5).

Teacher-Reported TD Score

In the multivariate linear regression models, female child, child age, caregiver education, whether anyone in the household was employed and presence of an old age pension were statistically significantly associated with teacher-reported TD score (Table 4). Female children had TD scores between 2.52 and 2.80 points lower than male children (Model 1 to Model 2). For each additional year of age, an orphan had a TD score that was 0.44–0.50 points lower (Model 1–Model 3). Orphans who had a caregiver with a secondary education had a TD score that was 2.95 points lower than orphans whose caregiver did not have any education (Model 1). Orphans who lived in a household where one of the household members was employed had a TD score 1.65 points lower than orphans who lived in a household with no employment income.

Discussion

There has been much debate surrounding the relationship between SES and mental health among the general population. The main questions raised in this debate are: (1) how should SES be measured? (2) Is the relationship too complex to understand? and (3) do researchers depend on simplistic generalisations? The results of the current study are summarised in Tables 5 and 6, and a more detailed discussion of these results follows below. It is interesting to point out that there was a difference between teacher and caregiver reported results. This confirms the complexity of measuring the relationship between SES and mental health.

Table 3 Multivariate linear regression analysis: caregiver-reported TD score

Variables	Model 1				Model 2				Model 3				Model 4				Model 5			
	Coef.	*p* value	95 % CI		Coef.	*p* value	95 % CI		Coef.	*p* value	95 % CI		Coef	*p* value	95 % CI		Coef.	*p* value	95 % CI	
Child—female (yes/no)	−0.94	0.10	−2.05	0.17	−0.89	0.11	−1.98	0.20	−0.81	0.14	−1.88	0.27	−0.71	0.19	−1.76	0.35	−0.78	0.16	−1.86	0.31
Chi ld—age	0.17	0.39	−0.22	0.57	0.27	0.17	−0.11	0.66	0.23	0.25	−0.16	0.61	0.32	0.10	−0.06	0.70	0.29	0.15	−0.10	0.68
Caregiver—female	2.43	0.03	0.30	4.56	2.28	0.05	0.01	4.54												
Number of meals per day (comparison group = two meals per day)																				
Three meals per day	−1.40	0.18	−3.44	0.63					−1.41	0.17	−3.44	0.61								
Four meals per day	−3.64	<0.001	−5.68	−1.60					−3.77	<0.001	−5.79	−1.75								
Acces s to medical services (yes/no)	−1.33	0.04	−2.58	−0.09	−1.11	0.07	−2.31	0.08	−1.17	0.05	−2.37	0.02	−0.96	0.11	−2.12	0.20				
A day in a week without food (yes/no)					3.11	<0.001	2.04	4.19					3.16	<0.001	2.11	4.22				
Caregiver education (comparison group = none)																				
Primary education									0.74	0.34	−0.76	2.23	0.89	0.24	−0.61	2.38				
Secondary education									0.42	0.60	−1.16	2.00	0.55	0.49	−1.01	2.12				
Tertiary education									−0.62	0.67	−3.48	2.25	0.78	0.54	−1.72	3.29				
Total household monthly expenditure																	<0.001	0.08	<0.001	<0.001
Statistical diagnostics																				
Sample size	466				466				499				499				499			
F statistic	5.95				8.68				4.21				6.31				2.70			
Statistical test value	<0.001				<0.001				<0.001				<0.001				0.04			
R^2	0.06				0.09				0.06				0.08				0.01			

The sample sizes for Models 1 and 2 were reduced due to missing observations in the independent variables

Table 4 Multivariate linear regression analysis: teacher-reported TD score

Variables	Model 1				Model 2				Model 3			
	Coef.	*p* value	95 % CI		Coef.	*p* value	95 % CI		Coef.	*p* value	95 % CI	
Child female (yes/no)	−2.52	<0.001	−3.88	−1.16	2.80	<0.001	−4.13	−1.48	−2.76	<0.001	−4.09	−1.43
Child age	−0.50	0.04	−0.98	−0.02	−0.48	0.05	−0.96	0.00	−0.44	0.07	−0.92	0.04
Caregiver female	−0.96	0.56	−4.14	2.23	−0.38	0.81	−3.48	2.73	−0.52	0.75	−3.69	2.65
Caregiver education (Comparison group = none)												
Primary education	−1.33	0.22	−3.45	0.80								
Secondary education	−2.95	0.01	−5.09	−0.81								
Tertiary education	−4.26	0.13	−9.75	1.24								
A day in a week without food (yes/no)	1.12	0.10	−0.20	2.44								
Employed (yes/no)					−1.65	0.03	−3.11	−0.18				
Old age grant (yes/no)									<0.001	0.01	<0.001	<0.001
Statistical diagnostics												
Sample size	463				463				463			
F statistic	5.41				6.86				6.53			
p value	<0.001				<0.001				<0.001			
R^2	0.06				0.05				0.05			

It also supports earlier research showing that the source of the report matters—different sources report different mental health outcomes for the same child [42]. In terms of the results themselves, the following key points should be mentioned.

First, it seems as if food security plays an important role in the emotional well-being of orphans. The questionnaire did not ask who provided the meals to the children. Therefore, some meals may be provided by schools and community/faith based organisations. Receiving four meals a day was the factor that had the strongest relationship with the emotional well-being of the sampled orphans, while going at least 1 day a week without food was the factor most strongly associated with poor socio-emotional health. These findings are corroborated by other South African studies [43]. In-depth follow-up interviews with the caregivers would help to determine whether the children who receive three or four meals a day are receiving these meals at home or from government feeding schemes, faith based organisations or community-based organisations.

Second, orphans who had access to medical services had better emotional well-being than those orphans without access to medical services. The data does not reveal why some orphans do not have access to medical services. South Africa offers free health care to children, but we hypothesise that distance from place of residence to health facility may be the reason why some respondents stated that the orphans lacked access to medical services. The distance may be too far to walk and many households cannot afford transport. Additional qualitative interviews with caregivers are necessary to understand why orphans are not accessing health care facilities.

Third, orphans with a male caregiver had better emotional well-being than those with a female caregiver, but only five percent of the caregivers were male. Importantly, a larger percentage of the male caregivers had a secondary or tertiary education. Other research has found that education is associated with better mental health. This, combined with the fact that women are reported to have higher levels of anxiety and depression than men, might point to the male caregivers having better mental health than the female caregivers. Furthermore, caregiver mental health has been found to impact the mental health of children [44]. One could therefore ask whether the mental health of caregivers impacted the mental well-being of orphans. Unfortunately, this study did not assess the mental well-being of caregivers. Further research would help to unpack the associations between the emotional well-being of orphans and caregiver gender, caregiver education level and caregiver mental health.

Fourth, there was no association between household asset index and the emotional well-being of orphans. Nor did total monthly household expenditure seem to play a role. This supports the findings from another study, which also used the TD score from the SDQ to measure the emotional health of orphans aged 6–12 in five countries, including Ethiopia, Kenya and Tanzania; no association was found between household wealth index and socio-

Table 5 Summary of bivariate results

Indicators	Caregiver report	Teacher report
Female child	None	Girls had a lower TD score than boys
Female caregiver	Female caregivers reported higher TD scores than male caregivers	None
Number of meals eaten by orphan per day	The more meals a child ate per day, the lower the TD score	None
Orphan going at least 1 day in a week without food	Children who went a day without food had a higher TD score than those who had a meal every day	Children who went a day without food had a higher TD score than those who had a meal every day
Caregiver education	None	The better educated the caregiver, the lower the child's TD score
Household has a salary or business income	None	Orphans living in a household that received employment income had a lower TD score (weak association)
Total monthly household expenditure	Higher monthly household expenditure was related to lower TD scores	None
Age of child	None	None
Number of household members	None	None
Number of household members per room	None	None
Household asset index	None	None
Refrigerator present	None	None
Child support grant	None	None
Foster care grant	None	None
Disability grant	None	None
Old age pension	None	The presence of an old age pension recipient in the household was associated with a higher TD score
Total amount received in grants	None	None
Access to medical services	Children with access to medical services had a lower TD score	None

emotional health of orphans in the African countries [45]. Meanwhile, a Ugandan study that looked at an economic empowerment intervention amongst 268 AIDS orphans (average age 13.7 years) reported improved self-esteem after 10 months of the intervention. However, the authors were unable to determine which part of the intervention improved the self-esteem of the orphans: (1) the workshops on asset and future planning, (2) peer mentorship on life options, or (3) savings accounts for secondary schooling or family businesses [46].

This is one of very few studies conducted in South Africa with pre-adolescent orphans. Most studies have been conducted in the developed world [39], with only limited generalizability in developing world contexts. As pointed out by Das et al. [21], there are two main reasons why the relationship between poverty and mental health might be different in developing countries than in developed countries: the nature of access to care and the presence of social networks in developing countries. In terms of the first reason, the percentage of poor people accessing mental health care facilities in the developed world is considerably higher than in the developing world. As for the second reason, the potential fall from employment to unemployment can cause much stress in developed countries, whereas in most developing countries, social networks help to mitigate this vulnerability.

Despite the strengths of this current study, the authors recognise that the study had the following limitations. First, the orphans and their caregivers were purposely sampled in one geographical area. Thus, the findings cannot be generalised to the entire Free State province or beyond. Second, the data was cross-sectional and therefore causality could not be established. Third, the analysis was based on self-reported information which may not be completely accurate, particularly in regards to the questions about number of meals per day and going at least 1 day a week without food.

Table 6 Summary of multivariate results

Indicators	Caregiver report	Teacher report
Female caregiver	Orphans with female caregivers had higher TD scores than orphans with male caregivers	*Not included in multivariate analyses because there was not a significant relationship with the outcome variable in the bivariate analyses*
Number of meals eaten per day by orphan	Orphans who ate four meals a day had lower TD scores than those who ate only two meals per day	*Not included in multivariate analyses because there was not a significant relationship with the outcome variable in the bivariate analyses*
Orphan going at least 1 day a week without food	Children who went at least 1 day a week without food had higher TD scores than those who had a meal every day	No significant association
Caregiver education	*Not included in multivariate analyses because there was not a significant relationship with the outcome variable in the bivariate analyses*	Children whose caregivers had a secondary education had lower TD scores than those whose caregivers had no education
Household has a salary or business income	*Not included in multivariate analyses because there was not a significant relationship with the outcome variable in the bivariate analyses*	TD scores were lower in cases where there was an employed adult in the home
Total monthly household expenditure	Orphans living in households with higher monthly expenditures had lower TD scores	*Not included in multivariate analyses because there was not a significant relationship with the outcome variable in the bivariate analyses*
Age of child	No significant association	The older the child, the lower the TD score
Number of household members	*These variables were not included in multivariate analyses because there was not a significant relationship with the outcome variable in the bivariate analyses*	
Number of household members per room		
Household asset index		
Refrigerator present		
Child support grant		
Foster care grant		
Disability grant		
Old age pension	*Not included in multivariate analyses because there was not a significant relationship with the outcome variable in the bivariate analyses*	Children living in households where a household member received an old age pension had higher TD scores than children living in households with no old age pension
Total amount received in grants	*Not included in multivariate analyses because there was not a significant relationship with the outcome variable in the bivariate analyses*	
Access to medical services	Children with access to medical services had lower TD scores	*Not included in multivariate analyses because there was not a significant relationship with the outcome variable in the bivariate analyses*

Conclusion

Two of the government's main interventions aimed at addressing the plight of orphans appear to be effective, as food security and access to medical services were both associated with better emotional well-being in this study. These factors are central to current government attempts to assist orphans. Further research using this data will investigate whether the other main government intervention (the Grants System) has a positive impact on the emotional well-being of orphans. Additional research is also needed on the association between poor emotional well-being of orphans and female caregivers, as the majority of orphans are raised by female caregivers.

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