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ORIGINAL ARTICLE

How can we improve healthcare access and general self-rated health among orphans and vulnerable children? Findings from a Kenyan cross-sectional study

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Abstract
Objectives This study analyzes healthcare access and general self-rated health (GSRH) among orphan and vulnerable child (OVC) households enrolled in an empowerment program in Eastern Province, Kenya. Analyses investigate whether reported monthly income mediates the association between program participation and medical security. Predictors of GSRH are also investigated.

Methods Cross-sectional survey data on families ($n = 707$) participating in a multisectoral empowerment program were collected in June 2012. Regression methods were used to investigate study aims.

Results Monthly income mediated 14.3 % of the total effect of program participation on healthcare accessibility. Program participation was not significantly associated with higher GSRH.

Conclusions Increased reported monthly income predicted improved healthcare access, but only explained a portion of improved healthcare access in the study population. Partnerships between community-based empowerment programs and clinical providers might successfully target multiple outcomes among OVC, including improved healthcare access, though further research on potential synergies is required. GSRH was associated with increased access to food, medical care, literacy, safe drinking water and household income. Further research on GSRH among OVC should target measurement validity, potential sources of disparity in GSRH between OVC and non-OVC, and targets for improving GSRH among OVC.

Keywords Health care access · General self-rated health · OVC · Kenya

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Introduction

Healthcare accessibility

Access to healthcare services, defined in terms of both availability and utilization, is an important aim of developing health systems seeking universal health coverage (Gulliford et al. 2002; Basu et al. 2012). Research on healthcare accessibility among orphan and vulnerable children (OVC) is limited. Studies of healthcare-seeking behaviors in urban areas of Kenya provide evidence that healthcare is considered a top priority among caregivers with young dependents (Amuyunzu-Nyamongo and Taffa 2004). In multiple studies, cost and inconvenience (e.g., due to distance and transportation) remain important barriers for Kenyans (Awiti 2014; Taffa et al. 2005; Nyambedha et al. 2001; Chuma et al. 2007).

Increased spending on healthcare in sub-Saharan Africa is associated with increased household income, higher education level of the head of household, mothers working outside the home, and households with a higher number of

young children (Taffa et al. 2005; Chuma et al. 2007; Ogundari and Abdulai 2014). Yet out of pocket payments for healthcare are linked to catastrophic health spending (Chuma and Maina 2012) for impoverished families by which money for food, clothing, and children's education is used instead to pay for healthcare. The Kenyan health system is largely reliant on point of service fees to finance care, with a disproportionately higher burden on poorer households (Chuma and Maina 2012).

In Kenya, there are an estimated 2.6 million children (under 18 years) considered orphaned or vulnerable (Lee et al. 2014). Vulnerable children may have experienced abuse in some form, be from more economically impoverished backgrounds, or have a parent who is terminally ill (Skinner et al. 2006). Compared to non-OVC, OVC are at greater risk for negative health behaviors (Mishra and Bignami-Van Assche 2008) and negative physiologic and mental health outcomes (Cluver et al. 2007; Mishra et al. 2007). Access to healthcare may be an important protective and mitigating factor in reducing morbidity and mortality disparities among OVC. Studies of the association between orphan status and access to healthcare services vary, with some reporting significant disadvantage among OVC (Skinner et al. 2013; Mishra and Bignami-Van Assche 2008), while others report no difference between OVC and non-OVC (Watts et al. 2007).

Kenyan national policy to support care for OVC predominantly operates through cash transfer payments to caregivers of OVC (Bryant 2009). Cash transfers successfully mitigate limited access to a number of social and health-related goods (The Kenya CT-OVC Evaluation Team 2012). As access to health services is disproportionately lower among poorer people worldwide (Hosseinpoor et al. 2011), increasing household cash flow is a reasonable starting point to increase health services access.

Though important for healthcare access disparity discussions, supply and demand characteristics within a healthcare market do not explain all differences (Heck et al. 2006; Richardson and Norris 2010). Beyond purely financial exchanges, additional factors associated with access include inter alia health insurance, racial and ethnic identity, sexual orientation, educational status, geographic location, and patient perception of healthcare quality and trustworthiness (Hammond et al. 2010; Macha et al. 2012; Heck et al. 2006). Generally poorer than non-OVC (Lee et al. 2014), OVC may also face barriers to healthcare access through social and cultural factors. As with racial, ethnic and sexual minorities in other contexts, OVC often face decreased social status including stigma and discrimination (Andrews et al. 2006). Stigma and discrimination have been used to explain some of the healthcare access disparities facing sexual, ethnic and racial minorities (Heck et al. 2006; Richardson and Norris 2010), and such factors may similarly isolate OVC from available social goods through perceived or real barriers (Link and Phelan 2006; Reidpath et al. 2005). Additionally, knowledge of the benefits and trustworthiness of available healthcare services may not be transmitted across generations in orphan households (Mohseni and Lindstrom 2007). Insofar as health access disparities operate through non-financial mechanisms, cash transfer programs alone may have limited success at decreasing such disparities.

Healthcare access has been measured through single and multiple item measures (Larson and Halfon 2010). This study examines the question of healthcare access through the lens of forgoing medical services perceived as necessary by the individual. This operationalization of the construct of access includes aspects of both availability and utilization.

General self-rated health

General self-rated health (GSRH) has been used as a generic measure of health status by a variety of health researchers (Jylhä 2009; Bailis et al. 2003). Higher self-rated health consistently predicts healthier physiology and lower mortality across diverse ethnic groups (Chandola and Jenkinson 2000) and among respondents in low-income countries (Onadja et al. 2013). After adjustment for functional status, depression, and co-morbidity, a meta-analysis of current literature on GSRH found that respondents with poor self-rated health had a mortality risk that was twice as high as respondents with excellent self-rated health (DeSalvo et al. 2006).

GSRH tends to be lower among respondents in stigmatized social groups (Janevic et al. 2012), and of lower socio-economic status (Verhaeghe and Tampubolon 2012). Young adults with lower literacy skills had lower self-rated health in Malawi (Smith-Greenaway 2014). Decreased healthcare access was associated with lower self-rated health in an American study (Shi and Starfield 2000).

Given the importance of GSRH to health outcomes including mortality rates, and the association between GSRH and determinants commonly found among OVC in sub-Saharan Africa, there is a relative lack of research on GSRH among this population. Ssewamala et al. (2009) found that self-rated health improved among AIDS-orphaned adolescents who benefitted from an economic empowerment intervention.

Methods

The present study assesses data collected from a multi-sectoral, community-based intervention targeting OVC

siblings in Meru County, Kenya. Program families are selected by a community selection process that prioritizes the most vulnerable OVC families in program regions. Program families are organized by working groups, whereby elder caregiving siblings meet weekly with approximately 19 other family representatives in a working group. Working groups elect a group leader from member families, and are supported by an adult mentor from the community. Working groups decide on allocation of program resources, including cash transfer, knowledge transfer of entrepreneurial and farming skills, and start-up kits to begin a small business. Each working group adopts a shared project which receives labor input from each participating family, and pays dividends equally to each working group family. In addition to material inputs, working groups receive life skills, health and hygiene skills training each week. The working groups are further organized into regions, of which there are 13 in the program. Regions meet monthly for a day to share successes and challenges across the working groups. The program lasts for 3 years, with a new group of participants entering and exiting each year. The location of the program offices in Maua Methodist Hospital, a private non-profit hospital, provides opportunities through formal and informal networks to increase awareness and access to clinical services.

Study aims

Prior evaluation of the study program showed consistent improvement in healthcare access, defined as accessing clinical health services to meet patient-perceived medical requirements, was positively associated with increased program participation (Goodman et al. 2014). This study furthers the previous finding by evaluating whether reported monthly income mediates this association when controlled by respondent age. This first study aim enters the debate on potential benefits of unconditional cash transfer programs by assessing what proportion of improvements to healthcare access across program years can be explained by improved material status (in the form of higher monthly income). Any direct effect between program participation and increased healthcare access, unmediated by improved material status, would suggest the need for further research into other mechanisms improving health access disparities, and potentially facing OVC more broadly. Such mechanisms may include decreased social stigma and discrimination, and increased knowledge and trust of healthcare provisions.

The second study aim is to assess whether duration of program exposure is associated with improved GSRH, and to identify other predictors of self-reported health in the present population.

Study design

The study utilized cross-sectional data acquired by program leaders using a standardized interview schedule at monthly regional meetings in June 2012. In addition to the two outcomes assessed in this paper, other data collected pertained to sexual behavior, community support and affiliation, water purification practices, and psychological variables. The sample size of the present data was determined based on other study objectives using the two-group comparison equation, stratified across regions and program years.

Data collection

Participants appearing at their respective monthly regional meetings were invited to participate and were informed that non-participation was not a requirement for program benefits and participation would not lead to further direct benefits. Participants signed consent forms prior to interview. At the 13 regional meetings where data were collected, 709 participants were randomly selected, and two abstained. Interviewers were group leaders elected by respective working groups, over the age of 18, and trained in data collection. To reduce social response bias, interviewers collected data at regions that were non-contiguous to their home region.

The structured questionnaire was translated from English to the local language, Kimeru, and back translated to English.

Outcome measures

The two outcomes of the present study are GSRH and frequency that respondents and respondent families went without needed medical attention in the previous year. GSRH was measured by asking respondents “in general, how would you describe your health?” Response categories were as follows: “excellent”, “very good”, “good”, “fair”, and “poor”. Responses were collapsed into excellent/very good and good/fair/poor for analysis. GSRH pertains only to respondent characteristics.

Frequency without needed medical care was measured by asking respondents “in the previous 12 months, how frequently have you or a member of your family gone without medicine or medical care that you needed?” Response categories were: “often”, “sometimes”, “rarely”, and “never”. Responses were dichotomized into often vs. sometimes/rarely or never. In order to measure healthcare accessibility respondents were asked about met or unmet medical needs at the family-level.

Predictor variables

The primary predictor variable was the duration of program exposure, categorized by the 3 years of program participation. Year 1 entered the year the data were collected (2012). Year 2 entered the previous year (2011). Year 3 entered 2 years prior (2010). This variable is a proxy measure for all program-derived benefits, including material transfer, social support, and increased network proximity to the hospital and its clinics.

Direct program benefits that were assessed included: amount of cash transferred from the program, investment area, and whether the respondent received a start-up kit. Investment areas were common uses of program-derived funds and included starting a business, paying school fees, buying farm animals, and making improvements to farm land.

Indirect program benefits that were assessed included: improved food security, number of sex partners in the past year, timing of most recent sex, reported monthly income and improved water purification practices. Food security and improved water purification were previously assessed in crude analysis and found to be significantly improved with more time in the program (Goodman et al. 2014). Food security was assessed by asking how frequently in the previous 12 months had respondents gone without sufficient food in the household, and dichotomized by often/sometimes vs. rarely/never. Reported monthly income was recorded as the answer to the question: "in a typical month, how much money do you earn?" Responses were recorded in Kenyan shillings and converted to US dollars (81KES = 1USD).

Unassociated with program exposure but considered potentially relevant to GSRH were: improved water source, household size and literacy skills. Improved water source was categorized into three levels: unimproved, basic and piped (Bain et al. 2012). Household size was measured as the number of people living in the household, and was considered a proxy for demand on household finances. Literacy skills were measured as the ability to read two simple sentences in the local language and were dichotomized as either being able to read all of both sentences (literate) or only able to read some or none of both sentences (not-literate).

Data analysis

Two modeling approaches were used for the two respective study aims. Since the association between healthcare access and program exposure had already been established, mediation analysis was used to explore the mediating effect of reported monthly income and cash transferred from the program on healthcare access. Insignificant mediators were dropped from the final model. Age was used in all models as a control variable. For a parsimonious mediation model, the three levels of program participation were treated as continuous.

It was considered that distribution of medical services across program regions might influence healthcare access. Thus before mediation analysis was implemented, a hierarchical logit model of healthcare access on monthly income, amount of cash transferred, program exposure and age was used to assess whether there was clustering at the regional level. A log-likelihood test showed no difference between the hierarchical model and a single-level model (χ^2: 0.01, p: 0.467).

The second study aim used a two-model approach. The first model included only program exposure, taken as a factor variable, and age as a control variable. The second model implemented a stepwise backwards approach beginning with a full model that included direct program benefits, indirect program benefits, and variables considered relevant to health but not associated with program exposure (water source and household size). The stepwise modeling process set probability for exclusion at $p < 0.30$ and for inclusion at $p < 0.20$). The model produced by the stepwise process was further refined manually to include covariates with a Wald test p value <0.10. Similarly to the mediation analysis, hierarchical modeling was used to explore whether there was significant clustering at the regional level. This proved to not be the case (χ^2: 0.23, p: 0.316).

After final models were selected, a respondent characteristic table was created to include all included predictors stratified by program year. Appropriate tests of difference were used to assess univariate differences of model predictors across program years.

All data were double entered into EpiInfo v.3.5.4 and analyzed in STATA v.13.

Ethical consideration

Informed consent was acquired from all participants prior to data collection. The Committee for the Protection of Human Subjects at the University of Texas Health Science Center provided ethical review and approval for use of program collected data for secondary analysis.

Results

Table 1 shows respondent characteristics included in the regression analyses. Respondents who had been in the program were older that the first year group. There was no difference between program years with respect to primary drinking water source. Respondents in higher program years were more likely to have spent program-derived funds to pay for school expenses. Median monthly income

Table 1 Characteristics of study sample from participants in orphan and vulnerable children empowerment program; Kenya (2012)

	Year 1		Year 2		Year 3	
	M (%)	95 % CI‖IQR	*M* (%)	95 % CI‖IQR	*M* (%)	95 % CI‖IQR
Median age (years)	19	18–20	20	18–22	20	18–20
Wilcoxon rank-sum z (*p*)	REF		−1.736 (0.083)		−3.104 (0.002)	
Primary drinking water source						
Unimproved (%)	38.91	33.11–44.71	38.04	30.05–45.57	44.44	37.12–51.77
Basic (%)	34.55	28.89–40.2	34.97	27.57–42.37	29.44	22.72–36.17
Piped (%)	26.55	21.29–31.8	26.99	20.11–33.88	26.11	19.63–32.59
Pearson χ^2 (*p*)	REF		0.033 (0.984)		1.689 (0.43)	
Pay school fees (%)	13.79	9.99–17.6	28.88	22.32–35.43	40.8	33.94–47.74
Pearson χ^2 (*p*)	REF		17.18 (<0.001)		48.97 (<0.001)	
Median monthly income, $10	0.59	0–2.35	2.35	1.18–4.71	2.35	0.59−4.71
Wilcoxon rank-sum z (*p*)	REF		−6.686 (<0.001)		−6.444 (<0.001)	
Freq. without needed medical care in past 12 months						
Often (%)	30.19	25.12–35.26	19.79	14.02–25.55	11.94	7.42–16.46
Sometimes/rarely/never (%)	69.81	64.73–74.88	80.21	74.45–85.98	88.06	83.54–92.58
Pearson χ^2 (*p*)	REF		6.568 (0.01)		23.072 (<0.001)	
General health						
Excellent/very good (%)	52.35	46.84–57.86	43.32	36.15–50.48	49.25	42.28–56.22
Good/fair/poor (%)	47.65	42.14–53.16	56.68	49.52–63.85	50.75	43.78–57.72
Pearson χ^2 (*p*)	REF		3.852 (0.05)		0.473 (0.491)	

Point estimates are median for continuous values and proportion affirming for categorical values. Pay school fees refers to use of program-derived funds to pay for school fees for self or dependent. Monthly income was originally measured in Kenyan shillings and converted to US Dollars (81 KES = 1 USD)

significantly increases with program exposure. Healthcare access was significantly higher among respondents with more time in the program. GSRH is significantly improved among respondents in year 2 compared to those in year 1, but there is no difference between years 1 and 3 with respect to self-reported health.

Table 2 shows the mediation analysis assessing whether improved monthly income mediates the association between program exposure and improved medical access. Coefficients in the table, and again in Fig. 1 depicting the values diagrammatically, are standardized and represent the variation in the standard deviation of the dependent variable given a unit increase in the predictor variable holding constant other model-included covariates. The C path shows a 0.246 increase in the standard deviation of medical access for every increase in program year. Older respondents showed significantly improved medical access. The A path shows program exposure significantly predicts an increase in reported monthly income by 0.226 standard deviations. Age was not significantly associated with reported monthly income. Both B and C' paths were significant, showing that monthly income and program exposure contributed independently to improved medical access. Cash transferred from the program was unassociated with healthcare access, and therefore left out of the analysis. The proportion of the total effect of program exposure on improved healthcare access that was mediated by monthly income was 14.3 %.

Figure 1 depicts the data presented in Table 2 as a diagram.

Table 3 shows the results of logit regression analyses of GSRH on program exposure (model 1) and selected covariates associated or unassociated with program exposure (model 2). The likelihood ratio test of Model 1 shows the model does not explain the data significantly better than the null model. Model 2 shows that respondents with unimproved or basic primary drinking water source had significantly reduced odds of excellent or very good GSRH compared to good, fair or poor GSRH. Respondents who were more medically secure had odds of higher GSRH that were twice those of medically insecure respondents. Respondents who paid school fees had significantly reduced odds of higher GSRH compared to respondents who did not use funds to pay for school fees. Respondents who were literate had odds of higher GSRH that were nearly twice those of respondents who could not read all of two simple sentences. Improved income and food security also predicted significantly higher GSRH.

Table 2 Mediation analysis of improved medical access among orphan and vulnerable child households in a multisectoral intervention ($n = 707$); Kenya (2012)

Path analysis of program participation to improved healthcare access, mediated by monthly income and controlling for age	β	p
C path (program participation → improved healthcare access, Logit)		
Years in program	0.246	<0.001
Age (years)	0.032	0.05
Likelihood ratio χ^2 (p)	28.66	<0.001
Goodness of fit χ^2 (p)	53.29	0.46
A path [program participation → typical monthly income ($10), OLS]		
Years in program	0.226	<0.001
Age (years)	0.019	0.61
ANOVA F (p)	37.43	(<0.001)
B and C' paths (program participation/typical monthly income → improved healthcare access)		
Years in program	0.221	<0.001
Typical monthly income ($10)	0.164	0.011
Age (years)	0.106	0.05
Likelihood ratio χ^2 (p)	37.96	<0.001
Goodness of fit χ^2 (p)	361.94	0.62

	β	95 % CI
Indirect effect	0.037*	0.012–0.077
Direct effect	0.221***	0.122–0.344
Total effect	0.258***	0.161–0.368
Proportion of total effect mediated by typical monthly income: 0.143		

Typical monthly income was measured in Kenyan shillings and converted to US dollars (81KES = 1USD). β—all coefficients are standardized; confidence intervals for effects are taken from bias-corrected bootstrap estimates (1000 reps). * $p < 0.05$; *** $p < 0.001$

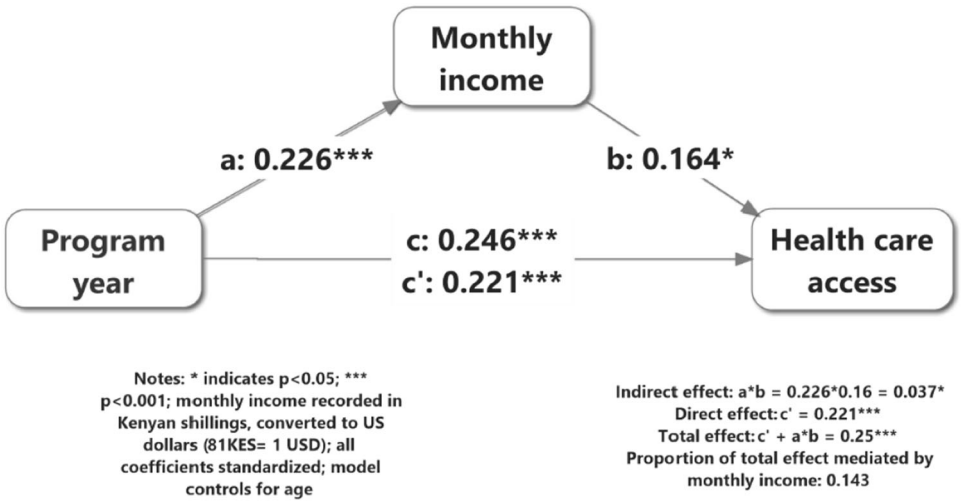

Fig. 1 Mediation pathway of program exposure to improved healthcare access, mediated by monthly income and controlling for age from a sample of orphan and vulnerable children in a multisectoral empowerment program; Kenya (2012)

Discussion

Exposure to the empowerment program showed a graded improvement in healthcare access. Thirty percent of respondents in year 1 reported they had gone "often" without needed medical care in the previous 12 months, compared to only 12 % in year 3. This association was mediated by improved monthly income, but not as much as expected; only 14.3 % of the total effect was mediated by monthly income. The fact that there seem to be program-related benefits unrelated to monthly income, or cash transferred, warrants consideration of other possibilities. As the

Table 3 Logistic regression of general self-reported health ("excellent"/"very good" vs. "good" "fair" or "poor") on program exposure, age, and other model-determined predictors; Kenya (2012)

	Model 1		Model 2	
	OR	95 % CI	OR	95 % CI
Program participation				
Year 1	REF		REF^	
Year 2	1.45	0.99–2.12	1.57*	1.02–2.43
Year 3	1.12	0.77–1.63	1.03	0.65–1.64
Age	0.99	0.95–1.04	0.99	0.93–1.05
Primary drinking water source				
Unimproved			REF***	
Basic			1.01	0.67–1.52
Piped			3.43***	1.92–6.15
Freq. without needed medical care in past 12 months				
Often			REF	
Sometimes/rarely/never			1.82**	1.16–2.86
Pay school fees			1.79**	1.16–2.75
Monthly income, $10			1.06^	1–1.12
Food secure			3.27***	2.05–5.21
Intercept	1.08	0.43–2.67	0.11	0.04–0.29
Diagnostics				
Global Wald χ^2 (p)	3.73 (0.293)		72.2 (<0.001)	
Goodness of fit χ^2 (p)	42.69 (0.818)		536.24 (0.195)	

Pay school fees refers to use of program-derived funds to pay for education expenses of self or sibling-dependent. Monthly income was measured in Kenyan shillings and converted to US dollars (81KES = 1USD). All confidence intervals calculated from bootstrap (1000 replicates). ^ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Wald statistic p value for factor variables provided by "ref"

empowerment program is complex, involving psychosocial empowerment and linking OVC to other community resources, including the hospital, a number of factors potentially explain the direct effect between program participation and improved healthcare access exist.

The hospital provides low-cost and free health services to community members, such that increased knowledge of available services may increase access. Increased social exposure to program staff may increase trust and perceived accessibility of care providers. Peer and mentor support from the program may work to reduce stigma and encourage care-seeking among program participants. The large portion of unmediated association (C' path) between program exposure and improve healthcare access suggest that cash transfer programs isolated from existing health resources or not targeting psychosocial factors facing OVC may have relatively limited success in decreasing health access disparities among this population.

The lack of any appearance of dose–response from program exposure to GSRH induces uncertainty about whether the difference seen between participants in program year 1 and year 2 is due to unobserved heterogeneity or whether participants in program year 3 underperformed, or was worse at baseline. Longitudinal data are required to clarify this uncertainty, including baseline data allowing for within-subject comparison of program effects. Despite this limitation in assessing the association between program exposure and improved GSRH, a number of other important findings emerged.

Respondents with piped water had significantly better odds of higher GSRH than did respondents with basic or unimproved water. To our knowledge, this is the first paper showing a positive association between piped water and higher GSRH, though the health benefits of piped drinking water as opposed to basic water are clearly established (Bain et al. 2012).

Medically secure respondents reported significantly higher odds of higher GSRH (OR 2.04, $p < 0.01$). It cannot be stated from the present data whether an improvement in healthcare access would lead to an improvement in higher GSRH, but it is reasonable to assume that it may. Longitudinal data would allow a within-subject comparison of improvements in healthcare access and GSRH, and would allow for exploration of general benefits of increased clinical offerings within a population of OVC and other low-income community members. Given the consistent association between program exposure and healthcare accessibility, but the inconsistent association between

program exposure and higher GSRH, it appears that higher healthcare access does not mediate an association between program exposure and GSRH. If respondents in their third program year had lower baseline GSRH, then it is possible that improved healthcare access brought their GSRH to be level with the first year. There is no way to determine whether this is the case apart from longitudinal data. Further, it is possible that respondents with higher GSRH utilized fewer services. Changes in GSRH may, and likely do, change demand for clinical services, leading to an alternative interpretation of the association.

Respondents who used program funds to pay for school fees reported lower GSRH. Program participants who used program funds to pay for school fees may have had fewer resources to pay for school otherwise, or may have had families that were less educated than the average program family. This possibility would make paying for school fees a proxy for lower socio-economic resources, and would be consistent with other literature on GSRH (Verhaeghe and Tampubolon 2012). Alternatively, respondents who paid for school out of program funds may have been more interested in academic attainment for themselves and their school-age household members, and may have had higher educational motivation. Positive self-concept has been linked to higher GSRH in the literature (e.g., Ssewamala et al. 2009), making this alternative explanation less likely.

Increased monthly income and food security predicted higher GSRH, suggesting these material assets as targets for improved GSRH.

Limitations

The study is limited by a number of different factors. First, data are cross-sectional. While program exposure introduces a time-varying measure, it is not clear whether baseline characteristics were equal between program years. Some associations cannot be interpreted in one direction with certainty, while others can. Higher medical access likely had some, but marginal, effect on monthly income, and did not influence program participation. Likewise, GSRH likely had little effect on water source, but may affect material access among respondents physically unable to perform necessary market-based tasks.

Potential biases include those typical of survey data. Social response and recall biases likely had some influence in data collection. Respondents who were more comfortable with the program may have been less likely to provide socially desirable responses, e.g., over-estimating general health. This bias would lead towards the null hypothesis, as was found in regards to GSRH. Recall bias could have altered reports of frequency without sufficient medical care in the previous 12 months, with respondents who were more attuned to medical necessities more likely to remember being unable to access medical services. Given the health education component of the study program, it is likely that respondents with more program time were more sensitive to health needs and therefore health access limitations. The results from this study aim would thereby be conservative.

Conclusion

This paper assesses the association between participation in a multisectoral empowerment program for orphans and vulnerable children (OVC) and two health-related outcomes: healthcare access and general self-rated health (GSRH). Analyses found a consistent positive association between improved healthcare access and program exposure, though only partially mediated by increased monthly earnings. This suggests that only improving material status of OVC through cash transfer may not be enough to reduce healthcare access disparities. Analyses did not find a consistent association between program participation and improved GSRH. Significant predictors of improved GSRH include: piped drinking water source, improved healthcare access, ability to read two simple sentences, and improved food security. Further research on GSRH among the OVC population is required in the study setting and should include efforts to improve water access, healthcare access, literacy and food security. Further research is required to explain the direct effect between program participation and improved health access. Potential mechanisms likely include social support factors, decreasing stigma, and improving perception of healthcare resources. Present findings suggest unconditional cash transfer programs may only have partial success at reducing health access disparities facing OVC.

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