

MEASURE Evaluation Orphans and Vulnerable Children Survey Tools: Psychosocial Well-being Measurement Supplement



Cover photograph by Zahra Reynolds, MEASURE Evaluation, of children in Liberia.

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Guide



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The development of the Orphans and Vulnerable Children (OVC) Program Evaluation Tool Kit was highly participatory. Materials represent the current best practice around the measurement of OVC and caregiver well-being in the context of the U.S. President's Emergency Fund for AIDS Relief (PEPFAR)-funded OVC programs. At USAID, the development of these tools was shepherded by Dr. Shriberg and Gretchen Bachman, with key input from the wider PEPFAR Orphans and Vulnerable Children Technical Working Group, especially, Dr. Beverly Nyberg at Peace Corps and Dr. Nicole Benham at the Office of the Global AIDS Coordinator. We thank Dr. Krista Stewart for her guidance as the USAID agreement officer representative for MEASURE Evaluation.

The important contributions of implementing partners, researchers, government staff, and other stakeholders, too numerous to list, cannot be overstated. This is truly a community tool kit, and we are grateful to our colleagues for their generosity of time, resources and experience.

Measuring OVC Outcomes: A Tool Kit

MEASURE Evaluation has produced a set of tools for measuring quantitative child outcomes and caregiver/household outcomes in programs for orphans and vulnerable children (OVC). This tool kit was developed with the support of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) OVC Technical Working group to:

- standardize the production of population-level child and caregiver well-being data beyond what is available from routine surveys;
- produce actionable data to inform programs and enable mid-course corrections; and
- enable comparative assessments of child and caregiver well-being and household economic status across a diverse set of interventions and geographical regions.

Who Will Use the Tool Kit?

The tools will support OVC programs and research institutions with an evaluation agenda. The tools may be useful to answer one of these five questions:

1. Is my program having, or did my program have, an impact on the children and households it reached?
2. What are the characteristics of children and their caregivers in my area regarding education, health, protection, and psychosocial status?
3. Where do the children most in need of program support live?
4. Approximately how many children need services or support?
5. What are the needs of my program's registered beneficiaries as an entirety, in terms of education, health, protection, and psychosocial support?

While no single data collection tool can meet all OVC data needs, this set of survey tools responds to distinct information needs related to program planning and evaluation. These tools will help to standardize measures and processes for assessing child, caregiver, and household well-being at the population level.

Tools in the Kit

The *Child, Caregiver & Household Well-being Survey Tool Kit*, available at:

<http://www.cpc.unc.edu/measure/our-work/ovc/ovc-program-evaluation-tool-kit>, includes a:

- Manual and three questionnaires (Caregiver Questionnaire, Child Questionnaire Ages 0-9 Years, and Child Questionnaire Ages 10-17 Years)
- Protocol Template
- Data analysis guide
- Data management guide
- Data collector training manual and materials
- Report on a pilot test of the survey tools
- Psychosocial well-being measurement supplement (this document)

Manual: The tool kit's manual describes the tools, question by question, and outlines how the tools may be used, and how they should not be used. The manual also includes basic guidance on implementing the tools, such as the following:

- Program outcome data should be collected by trained data collectors external to service delivery.
- A documented research protocol, outlining a technically robust, peer-reviewed study is required.
- The protocol, including data collection tools, must undergo ethical review in the country of research.
- Tools should be pilot-tested in the research setting.

Protocol Template: A research protocol is a prerequisite to implementing the OVC questionnaires. The process of protocol development facilitates agreement on the implementation strategy, and child protection issues, among other things. This process improves the study design, enables matching of resources to objectives, and ultimately improves the usability of the data generated from the study. Finally, the protocol is a guidance document for all stakeholders throughout the study period, serving as a reminder to all stakeholders of the agreed strategy and timeline. The protocol template has been structured to resemble an actual research protocol, including appendices. For each section, the information that is required has been outlined, as well as issues to consider when developing your own protocol.

Data Analysis Guide: Developing a data analysis plan is the first step in data analysis. A data analysis plan is important as it enables discussion and agreement of the key points of analysis, ensures that the analysis plan will address the research questions, and that the analysis reflects the strengths and limitations of the data. In order to reduce the burden on evaluators, MEASURE Evaluation developed the data analysis guide for the tools, including suggested analyses by questions, as well as more general background and refresher information on data analysis.

Data Collectors Training Manual: The field workers who will seek informed consent and administer these questionnaires must be well-trained before data collection begins. MEASURE Evaluation developed a data collectors' training manual and materials to ensure a standard level of competency across data collectors. This manual describes the structure and content for a six-day training event (five days for data collectors and one additional day for supervisors). Microsoft PowerPoint slides and handouts for training are included.

Data Management Guide: This guide provides standardized data management procedures, steps for database design, and describes best practices in data entry and data cleaning.

Pilot Test Report: The pilot test report presents methods, findings, and lessons learned from pilot testing the OVC survey tools in Zambia and Nigeria.

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1. Purpose and Audience

This document is intended as a resource for investigators aiming to measure the psychosocial well-being of children and their caregivers.

For the purposes of tool development, MEASURE Evaluation, with the PEPFAR OVC Technical Working Group (TWG), defined psychosocial well-being in PEPFAR-funded programs in terms of six components:

- social support
- self-efficacy
- self-esteem
- hope
- functional aspects of well-being
- parental stress and self-efficacy¹

The OVC survey tools include four questions on social support only. Questions relating to the other components were not included. The four social support questions were selected, and others excluded, during a collaborative review process (described herein), which included testing of additional questions and scales in Nigeria and Zambia related to social support and the other components of psychosocial well-being. In this document, we describe these additional questions and scales and our learning around them, providing references for investigators aiming to measure these components.

¹ Resilience and life satisfaction have recently been suggested for consideration. We recommend that this document be updated to include information on measures in those areas.

2. Methodology of Selecting Indicators

The defining feature of all indicators in the MEASURE Evaluation survey tools is that they are thought to be changeable through PEPFAR-funded OVC program interventions. Early in the development phase of the tools, in discussion with the PEPFAR OVC TWG and other key stakeholders, we agreed that the following components of psychosocial well-being were changeable through PEPFAR-funded program interventions: social support, self-efficacy, self-esteem, hope, functional aspects of well-being, and parental stress/self-efficacy. We determined that PEPFAR-funded OVC programs were unlikely to result in significant changes to mental health measures, such as depression, or health-related quality of life; these components of well-being were excluded from further discussion.

We conducted an extensive literature review and stakeholder engagement process to identify key measures of child and caregiver well-being, including the six components of psychosocial well-being. All identified indicators were assessed against eight criteria (listed below on this page) to determine whether they should be included in the wider survey tools.

We agreed that measures needed to be easy to implement and relevant across different regions and countries. We also agreed to prioritize questions that could be verified through an external source. These latter criteria were particularly challenging when applied to psychosocial well-being measures, which tend to be subjective by definition and often abstract and hypothetical. Also, we committed to limiting the number of questions in the tools, precluding the inclusion of a long scale.

This said, we pilot tested a number of questions and indicators on all six components of psychosocial well-being. Scales and questions were pilot tested as part of the wider survey tools pilot tests conducted in Zambia and Nigeria, using both cognitive interviews and a household pre-test (MEASURE Evaluation, 2014). However, we ultimately agreed to include only four questions on perceived social support within the survey tools.

Eight Criteria Used to Assess Indicators

1. Does the question/measure refer to impact/outcomes?
2. Do program interventions have the capacity to change result?
3. Is the question/measure relevant across a wide range of interventions (e.g., PEPFAR/OVC, system strengthening, protection)?
4. Does the question/measure contribute to a holistic vision of child well-being?
5. Can responses be verified (by documentation or another person or source)?
6. Is the question/measure easy to implement across different data collector skill levels?
7. Is the question/measure relevant across different regions / countries?
8. Is the question/measure relevant (or easily adapted) across age and sex?

General findings of the pilot test are documented elsewhere (ibid). Here we describe each of the psychosocial measures we pilot tested and our experiences applying them. This document also includes information on additional measures that may be useful to investigators wishing to measure psychosocial well-being. For this, we updated our earlier (2011) literature review for measures of psychosocial wellbeing (specifically, social support, self-efficacy, self-esteem, hope and functional aspects of wellbeing) by conducting a wide search of key scales to identify validation work and examples of usage through both PubMed and Google Scholar. We then compiled a list of scales and measures, prioritizing measures for which a reasonable level of validation data were available, that had been applied in PEPFAR countries, and/or that were particularly relevant to PEPFAR programming. We shared this list with a number of psychosocial well-being measurement experts by email and through presentations, seeking feedback on whether the list of measures was sufficiently complete (and whether we were missing any key measures). We then finalized the list of measures for inclusion here.

3. Measures of Psychosocial Well-being

Table 1 lists the scales and questions that we identified that measure social support, self-efficacy, self-esteem, hope, and functional aspects of well-being in adult caregivers and children. This is not meant to be an exhaustive list of all measures on these topics.

Table 1. Select Measures of Psychosocial Well-being in Adult Caregivers and Children

Scale Name	Authors	Target Group	Year
<i>Social support</i>			
Medical Outcomes Survey Social Support Survey (MOS-SSS)*	Sherbourne and Stewart (RAND)	Adults/Caregivers	1991
Multidimensional Scale of Perceived Social Support (MPSSP)	Zimet, Dahlem, Zimet, and Farley	Adults/Caregivers; Children aged 10-17 years	1988
Social Support Questionnaire (SSQ) and Short Form (SSQ-6)	Sarason, Levine, Basham, Sarason Sarason, Sarason, Shearin, and Pierce	Adults/Caregivers	1983 1987
The Oslo 3-item Social Support Scale (OSS-3)	Dalgard	Adults/Caregivers	1996
KIDSCREEN-52 social support subscale	KIDSCREEN Group Europe	Children aged 8-18 years	2001
<i>Self-efficacy</i>			
General self-efficacy scale*	Jerusalem & Schwarzer	Adults/Caregivers	1995
Self-Efficacy Questionnaire for Children	Muris	Children aged 14-18 years	2001
<i>Parental self-efficacy and stress</i>			
Parental Stress Scale*	Berry and Jones	Adults/Caregivers	1995
Parenting Scale	Arnold, O'Leary, Wolff and Acker	Adults/Caregivers	1993
<i>Self-esteem</i>			
Rosenberg Self-Esteem Scale (RSES)*	Rosenberg	Children aged 10-17 years	1965
Self-Esteem Questionnaire (SEQ) Youth instrument	Dubois, Felner, Brand, Phillips and Lease	Children aged 11-17 years	1996
Coopersmith Self-Esteem Inventory	Coopersmith	Children aged 8-15 years	1967
<i>Hope</i>			
Children's Hope Scale*	Snyder, Hoza, Pelham, Rapoff, Ware, Danovsky, Highberger, Rubinstein, and Stahl	Children aged 8-16 years	1997
Hope Scale for Youth*	Abler	Children aged 10-17 years	2012
<i>Functional aspects of well-being</i>			
Strengths and Difficulties Questionnaire (SDQ) - Parent/Teacher*	Goodman	Adults/Caregivers of children aged 4-10 years	1997
Strengths and Difficulties Questionnaire (SDQ) - Self-Administered*	Goodman, Meltzer, and Bailey	Children aged 10-17 years	1998

*Pilot tested by MEASURE Evaluation.

In this section, we describe the measures and scales that we pilot tested and our experiences using them, by component of well-being. Please see appendix 1 for additional scales that we identified, but did not pilot test.

3.1 *Social Support*

The support an individual has in his or her life from friends, family, or other persons has been shown to be an important contributing factor to mental and physical health and well-being in numerous studies (Atih et al., 2007). We pilot tested one social support scale: the Medical Outcomes Survey Social Support Survey (MOS-SSS).

The 19-item self-administered *Medical Outcomes Study Social Support Survey* was first validated in 1991 in a two-year study of patients with chronic conditions (Sherbourne & Stewart, 1991). The focus of the questionnaire is perceived availability of functional support. Functional support categories are supported by the literature (Cohen & Syme, 1985; Cohen & Willis, 1985; House & Kahn, 1985) and include emotional/informational support, affectionate support, tangible support, and positive social interaction. Respondents are asked to respond using five-point Likert scale response categories indicating how often this support is available to them, with response options: none of the time, a little of the time, some of the time, most of the time, or all of the time. This scale has been adapted and validated for use in China (Yu, Lee & Woo, 2004; Wang, Zheng, He & Thompson, 2013), Brazil (Soares et al., 2012) and in other countries, among both chronically ill patient populations and non-chronically-ill populations (Giangrasso & Casale, 2014). A modified, eight-item instrument was validated in a 2014 study of outpatients in Spain (Gomez-Campelo et al., 2014).

In Zambia we adapted and pilot tested four questions from the MOS-SSS among adult caregivers:

- Do you have someone in your life that you can confide in or talk to about yourself or your problems? (emotional support).
- Do you have someone in your life that can take you to the doctor if you needed it? (tangible support).
- Do you have someone in your life that shows you love and affection? (affectionate support).
- Do you have someone in your life that you can have a good time with? (positive social interaction).

We revised MOS-SSS response options to enable yes/no responses. The majority of pilot test respondents reported that they had all types of “support” (17/19).

In Nigeria, we pilot tested the full MOS-SSS with caregivers so that we could conduct a reliability analysis to determine the best performing questions for each type of social support. The four question version was piloted with children aged 10-17 years. Results indicated strong social support among both caregiver and child respondents. Caregivers were most likely to report tangible support, followed by emotional/information support, then affectionate support, and finally positive social interaction. During the cognitive interviews, some children had difficulty understanding the intent of the question: *Do you have someone in your life that can take you to the doctor if you needed it?* Some interpreted the question to be asking if they had access to health care or if their parents would take them to the doctor or the pharmacy if they were sick, rather than assessing if they had someone to provide instrumental support. The reliability analysis was conducted (see appendix 2) and three of the four social support questions were changed in the final tool to the following:

- Do you have someone to turn to for suggestions about how to deal with a personal problem? (emotional support).
- Do you have someone to help with daily chores if you were sick? (tangible support).
- Do you have someone to show you love and affection? (affectionate support).
- Do you have someone to do something enjoyable with? (positive social interaction).

These four social support questions are the only psychosocial well-being related questions that we included in the final tools.

3.2 Self-Efficacy

Self-efficacy describes a person's belief in his or her ability to employ behaviors needed to achieve specific results (Bandura, 1977; Bandura, 1986; Bandura, 1997). Having self-efficacy means that an individual is confident in his or her ability to control motivation and regulate behavior. We piloted the General Self-Efficacy scale.

The **General Self-Efficacy (GSE)** scale (Schwarzer & Jerusalem, 1995) is comprised of 10 items, each referring to successful coping. Respondents answer through a four-point scale: not at all true, hardly true, moderately true, or exactly true. The score is calculated by summing the responses to all 10 items. Criterion-related validity is documented in numerous correlation studies. The scale has been found to have high internal reliability in a vast number of studies globally, with Cronbach's alphas ranging from 0.76 to 0.90, with the majority in the high 0.80s (see <http://userpage.fu-berlin.de/health/selfscal.htm>). The GSE scale has been widely used and translated into 33 languages. Authors suggest that the scale score can predict adaptation after life changes, and also quality of life at any point in time.

In Zambia, we pilot tested the full GSE scale among adult caregivers. Generally, pilot test respondents reported high self-efficacy and responses between items were moderately correlated. However, in cognitive interviews, respondents reported that such questions and concepts as “resourcefulness” and “coping abilities” were challenging to understand. For this reason, we did not include this scale in the final tools. For investigators seeking to include this measure of self-efficacy into their tools, we recommend piloting the scale thoroughly and adapting it for local use.

3.2 *Parental Stress and Self-Efficacy*

There is a clear established link between parental self-efficacy and stress. We piloted select questions from the Parental Stress Scale.

The ***Parental Stress Scale*** is an 18-item self-report instrument testing parental stress. Items relate to positive themes of parenthood (emotional benefits, self-enrichment, personal development) and negative components (demands on resources, opportunity costs and restrictions) (Berry & Jones, 1995). Respondents are asked to consider the usual relationship they have with their child or children and agree or disagree with each of these items using a five-point scale. Originally validated in 1995, the scale has also been adapted to the Spanish setting (Oronoz, Alonso-Arbiol & Balluerka, 2007) and the Chinese setting (Tsang, 2010), and in both settings it was found to be an effective measurement instrument of parental stress. The scale has also been used in multiple U.S.-based studies (e.g., Okech, 2012; Baker, Perilla & Norris., 2001; Lantz, House, Mero & Williams, 2005).

In Zambia, we pilot tested three questions from this scale:

- I enjoy spending time with my child(ren). Do you...?
- Caring for my child(ren) sometimes takes more time and energy than I have to give. Do you..?
- I can meet the needs of the children in my care? Do you...?

Items were well understood. All respondents reported that they enjoy spending time with their children; the latter two questions elicited some variability. We recommend pilot testing of the entire scale.

In Nigeria, we piloted the question “Compared to other households in your community, how well do you feel you can meet the needs of the children in your care? Would you say ...?” Response options were: much better than other households; a bit better than other households; about the same as other households; a bit worse than other households; or much worse than other households. The majority

(12/20) of respondents reported that they could meet the needs of the children in their care about the same as other households.

3.4 Self-Esteem

Self-esteem reflects an individual's reflection of his or her self-worth. We piloted select questions from the Rosenberg Self-Esteem Scale.

The *Rosenberg Self-Esteem Scale (RSES)* is a 10-item scale (Rosenberg, 1965). Respondents report agreement/disagreement with items using a four-point Likert-type scale. The RSES was initially published and validated by Rosenberg among a sample of more than 5,000 high school students. Since its publication, the unidimensionality or multidimensionality question around this scale has received a great deal of attention in the literature (Goldsmith, 1986; Hagbord, 1993). Studies have continued to test the number of dimensions of the instrument (e.g., Franck, De Raedt, Barbez & Rosseel, 2008). The scale has been used in multiple contexts and countries and has been found to be a valid and reliable instrument, despite the ongoing debate on dimensionality.

In Zambia, we adapted pilot tested two questions from the RSES:

- I feel that I have a number of good qualities; and
- I am able to do things as well as most other people.

We added one response category to the RSES (neither agree nor disagree) to enable a five-point scale: strongly agree; agree; neither agree nor disagree; disagree; and strongly disagree. Responses to the two questions were highly correlated. We recommend further pilot tests of the entire scale in this context to determine if a subset of this scale could be used to measure self-efficacy.

3.5 Hope

Hope implies the desire to achieve an intended result, as well as thinking on how to achieve those results (Snyder et al., 1997). We piloted the Children's Hope Scale, the Hope Scale for Youth, and several other hope-focused questions.

The *Children's Hope Scale* is a six-item dispositional self-report index that reflects agency and pathways thinking with active questions, such as "I think I am doing pretty well". The scale includes the following response categories for all items: none of the time; a little of the time; some of the time; a lot of the time; most of the time and all of the time. The Children's Hope Scale was validated in a 1997 study by Snyder

and colleagues and was then adapted and validated by Dew-Reeves and colleagues (Dew-Reeves, Athay & Kelley, 2012). Snyder (2003) has provided an overview of the validation research on this scale. Since the tool's development, it has been subject to six laboratory tests by the scale's authors, and the scale has been used in at least eight other studies by other researchers, generally among children in the United States aged 7-16 years.

In Zambia, MEASURE Evaluation piloted an adapted version of the full Children's Hope Scale with children aged 10-17 years. We revised response categories to: strongly agree; agree; disagree; and strongly disagree. This adaptation meant that we were not able to calculate a score for hope. However, responses were highly variable and the questions were well understood.

Abler developed a *Hope Scale for Youth* aged 10-17 years (2012). The scale items were developed to measure three domains of hope: anticipation of a positive future; personal motivation to achieve goals; and influence of others on hope. This scale was tested in South Africa.

MEASURE Evaluation pilot tested this scale in Nigeria. During cognitive interviews, some children found the concept of trust in one of the questions to be challenging. Variability in the Likert scale, responses were limited, with most respondents reporting strongly agree or agree. For future use, we recommend testing fewer response categories to increase variability.

In Zambia, we also pilot tested *other hope questions*:

- You are hopeful about your future. Do you...? (adult caregivers and children aged 10-17 years).
- You are hopeful about your children's future. Do you...? (adult caregivers).

Response options were strongly agree, agree, disagree, and strongly disagree. Most respondents were "hopeful". Nearly all caregivers (17/19) reported that they were hopeful about their future, although only 15 reported that they were hopeful about their children's future. Eleven children agreed, and two (strongly) disagreed that they were hopeful about their future.

3.6 Functional Aspects of Well-being

Functional aspects of well-being may be defined as behaviors associated with psychosocial well-being. We pilot tested the Strengths and Difficulties Questionnaires.

The *Strengths and Difficulties Questionnaires (SDQ)* measure functional aspects of well-being among children aged 4-10 years and children aged 10-17 years (Goodman, 1997; Goodman, Meltzer & Bailey,

1998). The questionnaire for children aged 4-10 years is a 25-item instrument developed primarily for screening childhood behavior problems. It is administered to a parent, teacher, or another adult caregiver of the child. The questionnaire for children aged 10-17 years is a 25-item self-administered questionnaire. Both questionnaires can be administered rapidly. Questions relate to behaviors and response categories are limited to three: somewhat true; not at all true; and certainly true. The questionnaire seeks to assess children across five domains (emotional symptoms, conduct problems, hyperactivity, peer problems, and prosocial behavior), producing scores for each, as well as a “total difficulties” score.

The SDQ is currently one of the most frequently used screening instruments for child and adolescent mental health. The scales have been used and validated in multiple studies in various settings and among diverse populations. Borg and colleagues (Borg et al., 2012) tested the parent/teacher version of the questionnaire in Finland and found good internal consistency, inter-rater and cross-informant agreement, and strong reliability. The tool has been found to be an effective and efficient screening tool for child and adolescent mental health problems in the United States (Bourdon et al., 2005) and for possible psychiatric disorders in Brazil (Cury & Golfeto, 2003). However, some questions remain. Dickey and Blumberg (2004) demonstrated that the predicted five-component structure (emotional, hyperactivity, prosocial, peer problems, conduct) was not entirely confirmed. Some items intended to assess conduct problems were more closely related to hyperactivity, and some items intended to assess peer problems were more strongly correlated with emotional or prosocial problems. Also, the sex and age of the child as well as cultural differences in reporting styles have been found to affect results (Borg et al., 2012).

The self-administered questionnaire has also been used in multiple settings (Almaqrami & Shuwail, 2004; Giannakopoulos et al., 2009; Lukumar, Wijewardana, Hermansson & Lindmark, 2008), including in Africa (e.g., Chapman, Ngunga, Kamwanga, & Simbaya, 2012; Nyangara, Obiero, Kalungwa & Thurman, 2009). Mellor (2004) found that the SDQ demonstrates sound inter-informant and test-retest reliability. However, Nyangara and colleagues (2009) found that the emotional symptoms and prosocial behavior sub-scales had low internal reliability (0.53 and 0.60, respectively) when used among Tanzanian youth. The self-administered questionnaire has also been tested for use among children younger than 11 years (Curvis, McNulty & Qualter, 2014; Mellor, 2004) who were found to be reliable in their responding, although not as reliable as older children. Some issues remain. Mellor (2004) found the peer problems subscale to have questionable internal reliability for both older and younger child respondents. Looking beyond Western settings, Perera and colleagues (Perera et al., 2013) found that the factor structure and internal consistency of the current Sinhalese version of the self-reported SDQ was not

satisfactory. Others have found that the SDQ is not adequately sensitive to pick up change over time and therefore not appropriate for use in impact evaluation (Cluver, 2014).

MEASURE Evaluation applied the self-administered SDQ in Zambia. We had some challenges with the translations into local languages in that some of the nuances between questions were lost. As well as affecting the validity of responses, this frustrated respondents as they felt they were being asked the same question over and over, compromising reliability. That said, respondents produced variable scores across the normal and slightly abnormal range, as expected. We recommend further testing of this instrument.

4. Recommendations for Evaluators

For evaluators seeking to measure the impact of programs that have interventions designed to improve psychosocial well-being as defined herein, these scales and questions may be useful. However, we recommend that all questions and scales measuring psychosocial well-being, especially if translated, are pilot tested in the local context and revised if necessary prior to use. In pilot testing, we suggest that investigators validate translations through focus groups, test concepts for comprehension using cognitive interviews, or another qualitative method. Children and adults living in non-Western cultures may be less introspective and unpracticed in conducting the self-reflection required to answer many psychosocial well-being questions (Johnston, 2008). Questions may need to be contextualized or concretized so that they are easier to answer. We also recommend that evaluators conduct reliability testing of scales (test-retest), and pilot full scales if planning to select limited items from a scale, to determine which items to select. Further, we recommend that investigators pilot test and consider response categories to determine their suitability. In our pilot tests, both adult and child respondents struggled with four- or five-point Likert-type scale response options, finding it challenging to differentiate between options such as “strongly agree” and “disagree”. Others have found that five or more response options to be overwhelming for children (Johnston, 2008).

We hope that you share your learning as you apply these measures so that we can build our community’s understanding of the utility of these measures in the development context.

Appendix 1. Other Psychosocial Well-being Measurement Scales

Social Support

Multidimensional Scale of Perceived Social Support — The Multidimensional Scale of Perceived Social Support (MSPSS) was first published by Zimet and colleagues in 1988 (see also Zimet et al., 1990; Dahlem, Zimet & Walker, 1991; and Canty-Mitchell & Zimet, 2000 for authors' reliability and validation testing findings). The MSPSS is a 12-item instrument (with seven-point Likert scale response categories), developed to assess perceived social support. The original English version has been widely used, translated and validated in multiple settings and populations including among South Asian migrants in Hong Kong (Tonsing, Zimet & Tse, 2012), Arab Americans (Ramaswamy, Aroian & Templin, 2009), and in multiple contexts including Europe (Ekback, Benzein, Lindberg & Arestedt, 2013; Pedersen, Spinder, Erdman & Denollet., 2009), Iran (Bagherian-Sararoudi et al, 2013), Thailand (Wongpakaran, Wongpakaran & Ruktrakul, 2011), Malaysia (Ng et al., 2010; Guan, Huai Seng, Hway Ann & Ong Hui, 2013a; Guan et al., 2013b), Uganda (Nakigudde et al., 2009), and South Africa (Bruwer et al., 2008). The scale divides perceived social support into three distinct constructs: support derived from family members, support derived from friends, and support derived from significant others.

Social Support Questionnaire (SSQ) and Short Form (SSQ-6) — The Social Support Questionnaire (SSQ) was first published by Sarason and colleagues in 1983 (Sarason, Levine, Basham & Sarason, 1983). The SSQ is a 27-item questionnaire measuring (a) the perceived number of social supports and (b) satisfaction with social support that is available. Each item has two parts. Part 1 asks the respondent to list all the people that they can turn to for specific needs. Part 2 asks the respondent to rate their degree of satisfaction with these people.

The SSQ Short Form (SSQ-6) is a shortened, six-item measure validated in 1987. The SSQ-6 also yields scores for perceived number of social supports and satisfaction with social support. The SSQ six-item short form was validated through two studies (Sarason, Sarason, Shearin & Pierce, 1987).

A study by Rasclé and colleagues (Rasclé, Bruchon-Schweiter & Sarason, 2005) tested the SSQ-6 in France for applicability in this context and also tested the correlation of social support variables with personality measures for extraversion, neuroticism, and depression. Findings supported use of the scale in France. We did not find any relevant research or validation of the tool in a developing country or in a sub-Saharan African setting.

The Oslo 3-item Social Support Scale — The Oslo 3-item Social Support Scale (OSS-3) was developed by Dalgard in 1996. It includes the following questions: How many people that you are close to can you count on if you have a big personal problem?; How much interest do people show in what you do?; and How easy is it to get practical help from neighbors?. Questions two and three have five-point Likert scale response options. Question one requires respondents to select a range from four categories: none; 1-2; 3-5; or 5 or more. The total score is calculated based on responses to all three questions. The scale was included in a set of recommended common instruments in the EUROHIS project (Meltzer, 2003)². The scale has been widely used in Europe, and has also been tested outside of the European context. For example, a study of medical students in Nigeria concluded that the scale held potential for measuring social support in this population (Abiola, Udofia & Zakari, 2013).

KIDSCREEN-52 Social Support Sub-Scale — The KIDSCREEN instruments assess children's and adolescents' subjective health and well-being (health-related quality of life - HRQOL) (e.g., Ravens-Sieberer et al., 2001; Ravens-Sieberer et al., 2014). Social Support and Peers is a six-item subscale. The instruments were developed as self-report measures applicable for healthy and chronically ill children and adolescents aged 8 to 18 years. Convergent and discriminant validity were tested using information about the children's and adolescents' physical (Children with Special Health Care Needs screener for parents, Bethell et al., 2002) and mental health (Strength and Difficulties Questionnaire, SDQ (Goodman, 1997; Goodman, Meltzer & Bailey, 1998)). The scale has been tested in Germany (Schlarman, Metzger-Blau & Schnepf, 2008), Norway (Haraldstad et al., 2011), Greece (Tzavara et al., 2012), Serbia (Stevanovic et al., 2013), Argentina (Berra et al., 2013), Chile (Sepulveda et al., 2013), and in Korea (Hong et al., 2007) and found it to have acceptable levels of reliability and validity in those contexts. The KIDSCREEN instrument was pilot tested and heavily adapted for use in East Africa; authors note that the parent instrument was not suitable for use in this context (Masquillier et al., 2008). However, a study in South Africa found that the parent instrument had adequate reliability and validity in this context (Taliep & Florence, 2012). (Also, the social acceptance sub-scale was used and validated in Tanzania, see: Nyangara et al., 2009). The Social Support and Peers sub-scale has been used among youth-headed households in Rwanda (Boris et al., 2006).

Self-Esteem

Self-Esteem Questionnaire (SEQ) — The Self-Esteem Questionnaire (SEQ) was first published in 1996 by Dubois and colleagues. The SEQ is a 42-item self-report tool for adolescents. The SEQ includes six

² This was a project to develop common instruments to measure health across European countries with support from the World Health Organization Regional Office for Europe.

subscales measuring self-esteem in peer relations, family, school, sports/athletics, body image, and global self-worth. The peer relations sub-scale was validated among children aged 8-14 years in Scotland (Hunter Boyle & Warden, 1996). The scale was used in multiple studies of adolescents throughout the early 2000s, including in South Africa (Wild et al., 2004) and Tanzania (Nyangara et al., 2009: family and global self-worth sub-scales only). Nyangara and colleagues (2009) found that the family and global self-worth sub-scales had reasonable internal reliability (0.65 and 0.76, respectively) when applied among Tanzanian youth.

Coopersmith Self-Esteem Inventory — The Coopersmith Self-Esteem Inventory (CSEI) is a 50-item scale developed by Coopersmith in 1967 to measure self-esteem among children aged 8-15. The CSEI was adapted by Ryden in 1978 for use among adults. The CSEI includes a number of statements about feelings that are posed to respondents, such as “Things usually don’t bother me”, and the respondent reports whether this is usually “like me” or “unlike me”. The full scale has been found to have acceptable reliability (internal consistency and test-retest) and validity (convergent and discriminant) (Kokenes, 1978; Blascovich & Tomaka, 1991) among both males and females (Abad, Francis & Hills, 2008).

A school short-form of the CSEI was developed by Argyle and Lee in 1972; however, the short-form has come under criticism for not allowing differentiation between the major individual sources of self-esteem (e.g., Gibbs & Norwich, 1985). Hills and colleagues (2011) tested the school short-form CSEI and found that, if shortened further, the scale contains three clear factors: personal self-esteem, self-esteem derived from parents, and self-esteem derived from peers.

The CSEI has been translated into Arabic, Chinese, German, Greek and Spanish and may be ordered here:

<http://www.mindgarden.com/products/cseissc.htm#data>.

Self-Efficacy

Self-Efficacy Questionnaire for Children — The Self-Efficacy Questionnaire for Children (SEQ-C) is a 24-item scale developed by Muris in 2001 for youth aged 14-18 years. Items measure three aspects of self-efficacy: social self-efficacy (children’s capability to deal with social challenges); academic self-efficacy (children’s perceived capability to master academic affairs); and self-regulatory efficacy (children’s capability to resist peer pressure to engage in high risk activities). Questions regarding functional well-being are posed to youth, who then respond according to a five-point scale from “not at all” to “very well”.

The SEQ-C has been validated for use among Americans (Muris, 2002; Suldo & Shaffer, 2007) and Persian adolescents (Habibi, Tahmasian & Ferrer-Wreder, 2014). As well as a measure of self-efficacy, the SEQ-C has also been found to predict the development of depression (Muris, 2002).

Parental Stress and Self-Efficacy

Parenting Scale — The Parenting Scale was first published by Arnold and colleagues (Arnold, O’Leary, Wolff & Acker, 1993). It is a 30-item measure of dysfunctional discipline practices in parents. Three discipline styles have been identified: laxness (permissive discipline); over-reactivity (displays of anger, meanness and irritability); and verbosity (lengthy verbal responses or reliance on talking). A number of studies piloted the scale but found the factors problematic (e.g., Irvine, Biglan, Smolkowski & Ary., 1999; Reitman et al., 2001; Collett et al., 2001; Prinzie, Onghena & Hellinck, 2007; Arney et al., 2008). In 2007, the Parenting Scale’s authors issued advice regarding recommended changes to the way the Parenting Scale was to be interpreted (Rhoades and O’Leary, 2007). It now yields a total score and three recently revised factors: laxness (permissive, inconsistent discipline); over-reactivity (harsh, emotional, authoritarian discipline and irritability); and hostility (use of verbal or physical force). Reitman and colleagues (2001) proposed a revised two-factor analysis which Karazsia and colleagues (Karazsi, Dulmen & Wildman, 2008) confirmed to be a better fit for the data in their study of parents of children aged 2-16 years. While the scale has been widely used in the United States and in some other developed country contexts (such as Australia), we were unable to find any studies employing the scale in a developing country.

Appendix 2. Description of the Reliability Analysis Conducted on the Full Social Support Scale

We calculated Cronbach's alpha for the full social support scale. Alpha was equal to 0.93, which is very high. (Cronbach's alpha may have values from 0 to 1; the closer to 1, the higher the reliability of the scale.)

We then calculated Cronbach's alpha for each of the four social support sub-scales. Alpha for the emotional support section (P502-509) was 0.93, for tangible support (P510-513) it was 0.79, for affectionate support (P514-516) it was 0.93, and for positive social interaction (P517-519) alpha was 0.93.

The output that we received indicated how each item was correlated with the total score and what the alpha would be if that variable were to be deleted. We wanted to keep one item from each scale that would "represent" well the rest of the items in the corresponding sub-scale. We selected the item that had high correlation with the total score and had high impact on alpha; i.e., if the item were to be deleted, alpha would decrease greatly.

As a result, we decided to replace the question, Do you have someone in your life that you can confide in or talk to about yourself or your problems? (correlation with the total score of 0.67, alpha would be 0.92 if this variable were to be deleted) with the question, Do you have someone to turn to for suggestions about how to deal with a personal problem? (correlation with the total score of 0.83, alpha would be 0.91 if this variable were to be deleted) because its correlation with the total score was one of the highest and people did not have different understanding of the meaning of the item during the pilot test. Please see table A1, output 1 below.

We decided to replace the question, Do you have someone in your life that can take you to the doctor if you needed it? (correlation with the total score of 0.54, alpha would be 0.80 if this variable were to be deleted) with the question, Do you have someone to help with daily chores if you were sick? (correlation with the total score of 0.75, alpha would be 0.70 if this variable were to be deleted) because its correlation with the total score was one of the highest and alpha would be much lower if this item were to be deleted. Please see table A2, output 2 below.

Table A1. Output 1, Cronbach Coefficient Alpha with Deleted Variable (P502-509)

Deleted Variable	Raw Variables* ³		Standardized Variables*		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
P502	0.666906	0.921834	0.677513	0.920841	Someone you can count on to listen to you when you need to talk.
P503	0.514010	0.931221	0.520477	0.932554	Someone to give you information to help you understand a situation.
P504	0.867502	0.906854	0.871336	0.905620	Someone to give you good advice about a crisis.
P505	0.666906	0.921834	0.661792	0.922039	Someone to confide in or talk to about yourself or your problems.
P506	0.867502	0.906854	0.871336	0.905620	Someone whose advice you really want.
P507	0.764350	0.914593	0.754687	0.914884	Someone to share your most private worries and fears with.
P508	0.827967	0.909143	0.824098	0.909409	Someone to turn to for suggestions about how to deal with a personal problem.
P509	0.815301	0.910114	0.803212	0.911068	Someone who understands your problems.

Table A2. Output 2, Cronbach Coefficient Alpha with Deleted Variable (P510-513)

Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
P510	0.757271	0.654028	0.747519	0.723356	Someone to help you if you were confined to bed.
P511	0.537086	0.800000	0.533721	0.822481	Someone to take you to the doctor if you needed it
P512	0.483916	0.788845	0.537095	0.821010	Someone to prepare your meals if you were unable to do it yourself.
P513	0.745601	0.703125	0.767239	0.713592	Someone to help with daily chores if you were sick.

³ As can be seen from the outputs, Cronbach Alpha procedure returns two coefficients. Raw coefficient is based upon item correlation. Standardized coefficient is based upon item covariance. The standardized Alpha is used when scales are comparable. You may report Raw coefficient because our items are measured on the same scale.

We decided to keep the question Do you have someone in your life that shows you love and affection? because its correlation with total was high (0.92) and alpha would be reduced from 0.93 to 0.83 if this item were to be deleted. Please see table A3, output 3 below.

Table A3. Output 3, Cronbach Coefficient Alpha with Deleted Variable (P514-516)

Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
P514	0.922139	0.838095	0.928371	0.839737	Someone who shows you love and affection.
P515	0.922139	0.838095	0.928371	0.839737	Someone to love and make you feel wanted.
P516	0.723747	1.000000	0.723747	1.000000	Someone who hugs you.

Last, we decided to replace the question, Do you have someone in your life that you can have a good time with? (correlation with the total score of 0.79, alpha would be 0.95 if this variable were to be deleted) with the question, Do you have someone to do something enjoyable with? (correlation with the total score of 0.92, alpha would be 0.85 if this variable were to be deleted) because its correlation with the total score was the highest and alpha would be much lower if this item were to be deleted. Please see table A4, output 4 below.

Table A4. Output 4, Cronbach Coefficient Alpha with Deleted Variable (P517-519)

Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
P517	0.791548	0.949868	0.791647	0.949874	Someone to have a good time with.
P518	0.862662	0.895349	0.860793	0.895788	Someone to get together with for relaxation.
P519	0.922539	0.845921	0.921398	0.846464	Someone to do something enjoyable with.

We calculated Cronbach's alpha for the reduced social support scale (items 508, 513, 514, 519), as shown in table A5. Item 513 had the lowest correlation with the total score and item 514 had the highest correlation with the total score. In our data set with 20 observations,⁴ alpha was equal to 0.77, which is good.

⁴ There were 20 observations in our dataset. Therefore, coefficient alpha may not be robust against the violation of the normality assumption. However, according to Sheng and Sheng (Is Coefficient Alpha Robust to Non-Normal Data? available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3279724/#B17>), researchers have various recommendations regarding the sample size for alpha coefficient calculation. The recommendations range from 15-20, a minimum of 30 to a minimum of 300.

Output 5. Cronbach Coefficient Alpha with Deleted Variable (P508, 513, 514, 519)

Cronbach Coefficient Alpha	
Variables	Alpha
Raw	0.772888
Standardized	0.773262

Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
P508	0.589256	0.710937	0.602770	0.704332	Someone to turn to for suggestions about how to deal with a personal problem.
P513	0.387783	0.808929	0.392197	0.809788	Someone to help with daily chores if you were sick.
P514	0.799187	0.580952	0.753541	0.620121	Someone who shows you love and affection.
P519	0.614088	0.705357	0.576708	0.718136	Someone to do something enjoyable with.

Based on this analysis, the final suggested social support scale items are:

1. Someone to turn to for suggestions about how to deal with a personal problem (P 508)
2. Someone to help with daily chores if you were sick (P 513)
3. Someone to show you love and affection (P 514)
4. Someone to do something enjoyable with (P 519)

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