



## JOURNAL ON EDUCATION IN EMERGENCIES

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Source: *Journal on Education in Emergencies*, Vol. 7, No. 2 (December 2021), pp. 104-151

Published by: Inter-agency Network for Education in Emergencies

Stable URL: <http://hdl.handle.net/2451/63539>

DOI: <https://doi.org/10.33682/rhqb-fy8u>

### REFERENCES:

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Olayemi, Moses, Melissa Tucker, Mamour Choul, Tom Purekal, Arlene Benitez, Wendy Wheaton, and Jennifer DeBoer. 2021. “Creating a Tool to Measure Children’s Wellbeing: A PSS Intervention in South Sudan.” *Journal on Education in Emergencies* 7 (2): 104-51.  
<https://doi.org/10.33682/rhqb-fy8u>.

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# CREATING A TOOL TO MEASURE CHILDREN'S WELLBEING: A PSS INTERVENTION IN SOUTH SUDAN

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## ABSTRACT

*Since 2015, more than 560,000 South Sudanese primary school children have received psychosocial support (PSS) through the USAID-funded Integrated Essential Emergency Education Services program, which is implemented by UNICEF. Several South Sudan-based nongovernmental organizations partnered with UNICEF to train local teachers to implement the PSS activities in child-friendly spaces. To evaluate the impact this intervention had on students' wellbeing and academic performance, a multi-institutional consortium of multidisciplinary partners purposively sampled 2,982 students and 580 teachers in 64 schools from five states in the Republic of South Sudan. Critical to the evaluation's aims was the design of a contextually relevant, rigorously validated instrument to measure students' wellbeing in a region where research on PSS outcomes in education in emergencies is needed. In this article, we first present the process by which these survey instruments were designed, including the collaborative efforts of experts on measuring PSS outcomes in conflict settings and experts on the local context. We then describe how we tested for the construct validity of the resulting instrument and present the results of our confirmatory factor analysis of its three-factor model of social wellbeing, emotional wellbeing, and resilience/coping. Finally, based on our process and the resulting instrument, we make recommendations for future research on PSS outcomes in emergency settings.*

Received January 27, 2020; revised February 23, 2021, and October 1, 2021; accepted November 8, 2021; electronically published December 2021.

*Journal on Education in Emergencies*, Vol. 7, No. 2

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ISSN 2518-6833

## INTRODUCTION

Incidents of violence and war have caused an extremely high level of displacement of South Sudanese children and youth both within and outside the geographic boundaries of the world's newest nation. Unfortunately, these forced displacements have worsened the country's already struggling education system. In 2015, for example, South Sudan reported an illiteracy rate of 84 percent for females and 73 percent for males (Republic of South Sudan Ministry of Education, Science, and Technology 2015). The 2016 clashes in Juba, South Sudan's capital and largest city, left close to one-third of the country's primary school learning spaces partially or completely destroyed. Data collected and analyzed in 2018 from South Sudan's Education Management Information System (EMIS) revealed a marked increase in the student dropout rate, which was compounded by a decline in enrollment (UNESCO 2018). However, the disruption of the education system is only one of the consequences the war and violence have had for South Sudan's youth population.

The research is clear: forced displacement can have profoundly negative effects on the uprooted populations (Amnesty International 2016; Kamau et al. 2004; UN Children's Fund [UNICEF] 2015a). The literature on the psychological wellbeing of displaced populations paints a concerning picture. Subjects who experience armed conflict and are forced to flee to temporary shelters, such as protection of civilians (POC) sites and refugee camps, are prone to sadness and depression, and have poor social and emotional skills (IASC 2007). Some medical practitioners warn that exposure to adversity can impair children's cognitive, physical, and mental health (Shonkoff, Boyce, and McEwen 2009). This suggests that, left unchecked, the negative consequences of forced displacement and exposure to violence can prevent children and youth from living up to their full potential as fully functional, productive members of the community. It is of critical importance, therefore, not only to seek effective ways to foster the social and emotional wellbeing of children in conflict settings alongside their academic needs, but to do so with a sense of urgency.

This article is divided into five sections. In the first section, we provide a backdrop for the study, including a short summary of the South Sudan context and current efforts at nation-building, followed by a discussion of the theoretical constructs of wellbeing we operationalized in our study, and of interventions that have been implemented and instruments that are used to measure wellbeing in conflict settings. In the second section, we review the purpose of this study and the broader research from which this paper emerged. We also discuss the implementation of psychosocial support (PSS) interventions in South Sudan, the modalities of PSS

activities, and child friendly-spaces (CFS). In the third section, we address our core research question and present the guiding framework for our development of the instrument. In section four we present the results of our analyses, and we conclude with a discussion of the results, policy implications, and limitations of our study, and applications for future work.

## THE SOUTH SUDAN CONTEXT

The civil war in South Sudan has caused most South Sudanese to experience some adverse event, such as physical violence or forced displacement, as well as the effects these events have had on their psychological and emotional states. The mandates of President Kiir to dismiss prominent South Sudanese government figures in mid-2013, including the vice president and the secretary-general of the Sudan People's Liberation Movement, led to the outbreak of violence in Juba in December of that year. As conditions became more volatile, security deteriorated and spread from state to state, leading to the internal displacement of a large segment of the population. There is no consensus on the cause of the violence, although the various theories include an attempted coup to silence government officials and weaken state institutions, cause an imbalance of power, and militarize government institutions (International Crisis Group 2014). An inquiry into the cause of the conflict suggested that the violence may have been more ethnically polarized than political (African Union 2014).

In July 2016, the reappointment of the vice president was marked by another outbreak of violence in Juba. While the president and vice president openly condemned the violence sparked by their loyalists and promptly ordered a ceasefire ("South Sudan Clashes" 2016), the conflict spread throughout the country. Sporadic fighting continued for much of 2017 and 2018, and much of the population from the country's southern regions fled to Uganda. In September 2018, Sudan and Uganda brokered a new peace agreement for South Sudan.

Research suggests that the relationship between the causes and effects of conflict can be intricate and complex. For example, conflict has been identified as both a cause and an effect of inequitable access to education (Burde et al. 2017), and those worst affected usually are the most vulnerable members of the population (Centre for Research on the Epidemiology of Disasters 2013). During the war in South Sudan, acts of violence were rampant, including against the elderly, women,

children, and the disabled. As the EMIS report shows, schools and learning centers were greatly affected (UNESCO 2018), with reports of sexual assaults and violence in schools (UNICEF 2015b). The effects this violence has had on South Sudanese students were illustrated in the recent education needs assessments conducted across 400 learning sites in South Sudan, which found both higher dropout rates and lower enrollment and attendance rates than in the prewar years (Education Cluster 2018).

This study is part of an ongoing intervention to attend to the wellbeing of children and youth who are victims of direct violence or have witnessed intercommunal conflict. In the next section, we review the literature on the concept of wellbeing.

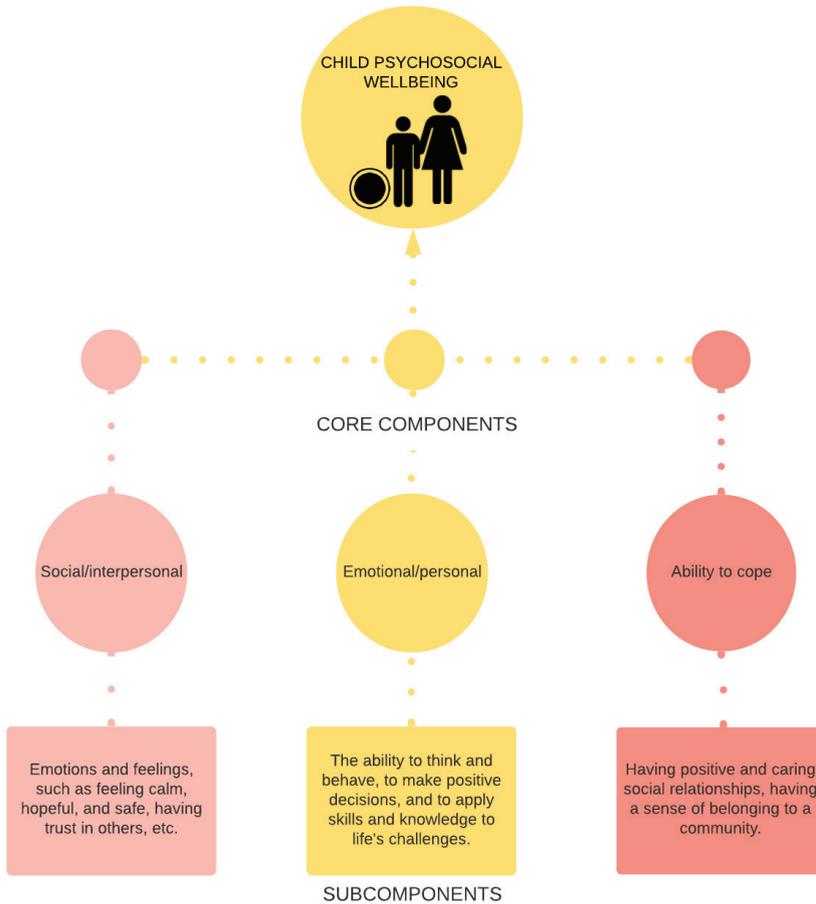
## LITERATURE REVIEW

Our review of literature reveals a sparsity of validated quantitative instruments designed to measure wellbeing among sub-Saharan African children (Kabiru, Izugbara, and Beguy 2013). This lack sharply contrasts with the availability of guidance on designing instruments to measure children's psychosocial wellbeing in emergency settings (Bohl, Dzino-Siladjic, and Ryan 2018). We specifically identified the lack of a contextually relevant instrument that could be deployed in a linguistically and culturally diverse setting like South Sudan (Lu, Lim, and Mezzich 1995). Multiple systematic literature reviews of recent developments in interventions for children affected by armed conflict and political violence recommend understanding the effects of these interventions on a range of wellbeing outcomes (O'Sullivan, Bosqui, and Shannon 2016). This paper, which is our response to these recommendations, provides evidence of the systematic process through which we identified the wellbeing outcomes that are most relevant for studies among South Sudanese children and youth. We also describe our process of measuring the change in these wellbeing outcomes in this unique context. To situate our work, we first expound on the literature that helped us to operationalize the concept of wellbeing and the construct of psychosocial wellbeing, and their subconstructs. We then describe the kinds of interventions that typically produce these outcomes, thus situating the intervention we evaluated. We conclude the section with a description of the specific informed decisions we made during this study.

**OPERATIONALIZING WELLBEING, PSYCHOSOCIAL WELLBEING,  
AND THEIR SUBCONSTRUCTS**

Wellbeing is generally perceived as a condition of holistic health (Bohl et al. 2018). This perception comprises such a broad range of physical, cognitive, mental, psychological, social, and spiritual states that it often complicates the operationalization of what we mean by wellbeing (Dodge et al. 2012). Therefore, we subscribe to the definition of psychosocial wellbeing found in the guidance on measuring children's psychosocial wellbeing, which states that psychological wellbeing refers to "the inter-connection between psychological sub-components—such as emotions, thoughts, and behaviors, including coping strategies—and social sub-components, such as interpersonal relationships, social roles, norms, values, traditions and community life, that contribute to the overall well-being of a person" (Bohl et al. 2018, 2). The guidelines also suggest that there are three subconstructs of psychosocial wellbeing, namely, emotional wellbeing, social wellbeing, and resilience. We define these as follows: emotional wellbeing is a person's internal state, as demonstrated through their emotions and feelings; social wellbeing is the nature of an individual's interactions with others; and resilience refers to an individual's ability to cope in an uncertain or changing environment, which stems from their sense of agency. In this paper, we focus on these subcomponents of children's psychosocial wellbeing.

Figure 1: Subcomponents of Psychosocial Wellbeing



Source: Extracted from Bohl et al. (2018)

### INTERVENTIONS THAT INFLUENCE CHILDREN'S WELLBEING

This study is a component of ongoing interventions to support children and youth who are victims of direct violence or have witnessed intercommunal conflict. A review of the literature on the impact of interventions for children affected by armed conflict (Jordans, Pigott, and Tol 2016) suggests that learning environments can provide nurturing, supportive relationships and a sense of safety, which are key to recovery and can help distressed school-age children and youth acquire social and emotional skills (Alliance for Child Protection in Humanitarian Action 2020). Access to schools and CFS can help children build relationships with teachers, spend time in a safe and protected space, and learn key life skills

(Tol et al. 2011). This is consistent with the view that education mitigates the psychosocial impact of conflict and disasters by providing a sense of normalcy, stability, structure, and hope for the future (Convery, Balogh, and Carroll 2010; Nicolai and Triplehorn 2003; Alliance for Child Protection in Humanitarian Action 2020). In fact, a Global Education Monitoring report (UNESCO 2019) describes learning environments as safe spaces in which teachers observe the psychosocial wellbeing of children and teach coping skills that improve their social and emotional wellbeing by providing access to “therapeutic rapport,” which enables children to express emotion without experiencing a moralistic or judgmental response (Bosqui and Marshoud 2018).

A systematic review found that more than one-fifth of mental health and psychosocial wellbeing interventions in humanitarian settings involved the provision of CFS (Tol et al. 2011). In these environments, children and youth typically experience the programmatic interventions of social and emotional learning (SEL) and PSS. Although the two are often used interchangeably, there is a comprehensive treatise on the difference between SEL and PSS (see INEE 2016).

In this paper, we define SEL as activities that help learners gain the social and emotional competencies that enable them to recognize their feelings and emotions, and to manage them in a way that makes it possible for them to set and achieve positive goals. The aim of SEL is to enable them to do this without losing sight of the societal constraints in which they are situated and the need to be empathetic toward others (Collaborative for Academic, Social, and Emotional Learning 2003). One clear characteristic of SEL is that it is specifically designed to align with academic goals. Many studies have investigated what constitutes quality SEL programs (Aspen Institute 2018), how they affect students’ retention and attrition (Bridgeland, Dilulio, and Morison 2006), the benefits SEL brings to students’ academic performance (Zins et al. 2007; Payton et al. 2008), teachers’ impressions of its impact (Bridgeland, Bruce, and Hariharan 2013), and the benefits of SEL in marginalized settings, in public governance, and in social functioning (USAID 2019).

In contrast, PSS typically refers to a holistic system that recognizes how intrinsically connected people’s internal experiences are with their social perspectives, actions, and interactions with others. This holistic view discourages compartmentalizing the social, attitudinal, and aptitudinal aspects of a person’s wellbeing while emphasizing the need to view them within their broader environmental contexts (Action for the Rights of Children 2009). Thus, PSS has been defined as “processes and actions that promote the holistic wellbeing of people in their social world, including support provided by family and friends” (INEE 2010, 121). There is

strong evidence to support the view that PSS interventions have a positive impact in school-based settings.

The positive role PSS and SEL interventions play in recovery after a crisis is widely acknowledged (INEE 2016), and research suggests that they have both short- (Zins et al. 2007) and long-term (Elias et al. 2002) benefits. This primarily stems from the environments where PSS and SEL activities take place, such as CFS and learning spaces, where distressed students and youth can interact with their peers, communicate with trained instructors and trusted adults, participate in recreational activities designed to help them recognize and cope with their feelings, and, in the process, learn openness and social skills (see, e.g., Global Protection Cluster 2011). Efforts to achieve and measure these effects are described in the following section.

#### **IMPLEMENTING AND MEASURING THE IMPACT OF PSS INTERVENTIONS IN CONFLICT SETTINGS**

Conventional concepts of wellbeing have been measured indirectly using proxies based on observable, countable factors, such as personal income, physical health parameters, the local economy, etc. (Mguni and Bacon 2010). The use of indicators such as individual self-reports is now generally accepted, as they are a direct reflection of what people think, feel, and metacognitively reflect on (Steuer and Marks 2008). We identified some construct- and criterion-validated instruments used to measure wellbeing outcomes. Some of the scales and measures used in this study were initially developed for other contexts. They included the Strengths and Difficulties Questionnaire, the KIDSCREEN questionnaires, the Self-Description Questionnaire II, the Child and Youth Resilience Questionnaire, the California Healthy Kids Survey (California Department of Education 2007), the New Philanthropy Capital (2011) wellbeing measure, the UNICEF Actions for the Rights of the Children (ARC) Resource Pack (2009), the Rosenberg Self-Esteem Scale (RSES), and the New Economics Foundation (Thompson and Aked 2009) guide to measuring children's wellbeing.

The Child and Youth Resilience Measure is a measure of the individual, relational, communal, and cultural resources available to individuals to bolster their capacity to sustain wellbeing (Ungar and Liedenberg 2016). Originally designed to be used with 9- to 23-year-old youth, it was developed as part of the International Resilience Project implemented in 14 communities around the world. Three of those communities were in Africa: Serekunda, The Gambia; Njoro, Tanzania; and Cape Town, South Africa. The rest were in North America, Asia, and Europe

(Ungar and Liebenberg 2011). In a separate study, the measure was validated for a Canadian population (Liebenberg, Ungar, and Van de Vijver 2012). The KIDSCREEN questionnaires (Ravens-Sieberer and the KIDSCREEN Group Europe 2016) were developed through a collaborative effort of European pediatric researchers for use in epidemiologic public health surveys, clinical intervention studies, and research projects. To warrant cross-cultural applicability, different versions of the questionnaire were developed simultaneously in 13 European countries (Ravens-Sieberer et al. 2014). Although the 2014 KIDSCREEN technical document affirms the reliability, validity, sensitivity, and conceptually/linguistic appropriateness of this questionnaire in 38 countries/languages, only two African countries were included, Uganda and Kenya (Ravens-Sieberer et al. 2014, 799; Ravens-Sieberer and the KIDSCREEN Group Europe 2016, 46).

The Self-Description Questionnaire II is another well-validated instrument whose normative archive sample comprised Australian high school students who were predominantly ages 12-18 (Marsh et al. 2005). The Children's Hope Scale, used extensively in the United States, measures such constructs as a child's belief in their ability to achieve their goals, and to initiate and sustain movement toward those goals (Snyder et al. 1997). The RSES aims to measure a single dominant factor representing global self-esteem (a measure of how individuals value themselves) by measuring one's positive and negative feelings about oneself (Rosenberg 1965). According to the meta-analytic database from the Longitudinal Internet Studies for the Social Sciences, in studies that used the RSES from 1966 to 2016, only 4 percent of the samples included African contexts; the rest were predominantly in Europe, North America, and Asia (Gnambs, Scharl, and Schroeders 2018). Other scales specifically designed to measure both the feeling and functioning aspects of positive mental wellbeing have been widely reported in population surveys in the UK, including the national health surveys for England (Michaelson, Mahony, and Schifferes 2012) and New Zealand (Medvedev and Landhuis 2018).

Our point is that there is a strong evidence base for construct- and criterion-validated instruments that measure psychosocial wellbeing in high-income national contexts, whereas the vast majority of studies (approximately 92%) of the delivery and implementation of PSS interventions for vulnerable populations in conflict settings are situated in sub-Saharan Africa, the Middle East, and North Africa (Jordans et al. 2016). The modalities of these interventions are varied; most involve randomized control trials (Panter-Brick et al. 2018) that have a significant impact on children's social and emotional wellbeing and their ability to cope. The most frequent interventions were school-based and involved creative, expressive,

and psycho-educational and cognitive-behavioral strategies (O’Sullivan et al. 2016). Creative, expressive approaches in these settings emphasized interactive activities, such as drama, music, role-playing, and drawing (Jordans et al. 2016). PSS was the intervention reported to be delivered most frequently, partly because of its potential to recognize and strengthen resilience and local coping capacities (UNICEF 2009). A significant gap we found in the literature was the lack of reports on the development and effectiveness of contextualized measures in low- and middle-income settings, let alone in conflict settings (Kamali et al. 2020).

We also reviewed the literature for reports of contextualized instruments to measure the impact of PSS interventions on wellbeing outcomes. Several studies based in Northern Uganda described the development of a monitoring and evaluation tool to collect data on the process and outcomes of locally relevant and participatory intervention (Ager, Akesson et al. 2011; Claessens et al. 2012). These studies were deemed necessary, as previous scientifically validated questionnaires were judged to be inaccurate, due to their cultural and linguistic incongruencies with the Northern Ugandan population. The authors of one article suggested that existing instruments not only seemed unsuitable for the character of the interventions, they also failed to respond to practitioners’ need to identify social changes at the individual and group levels (Claessens et al. 2012).

To satisfy the need for cultural adaptability, a participatory research tool developed for a study in South Sudan was based on research conducted in Sri Lanka (Hart et al. 2007) and Sierra Leone (Stark et al. 2012). The tool was used to compare local perceptions of wellbeing and to determine the tool’s relevance and cultural fit (Eiling et al. 2014). A similar approach was used in Kenya (Kostelny, Ondoro, and Wessells 2014). Although these studies satisfied cultural relevance, the need for scientifically validated instruments remained. Impact studies conducted in Burundi (Jordans et al. 2013), Nigeria (Sheikh et al. 2014), and Rwanda (Chauvin, Mugaju, and Comlavi 1998) revealed the consistent challenges researchers face in interpreting cross-cultural validity and in validating measures to evaluate psychosocial wellbeing outcomes in these settings. These findings emphasize the need for instruments that are both culturally adapted and scientifically validated, and thus appropriate for evaluating the impact of PSS provided to children in low-resource communities.

In summary, our study focused on the measurement of psychosocial wellbeing outcomes using the subconstructs of emotional wellbeing, social wellbeing, and resilience. The clear impact school-based interventions have on students’ academic and wellbeing outcomes justify the setting of our study. As we sought to provide

rigorous evidence for the contextualization and validation of the instrument in a setting as unique as South Sudan, we reflected on the limitations of the existing scales and measures identified in the literature. Our work has clear implications for the methodology that should be adopted for the measurement of wellbeing in South Sudan and similar contexts. We demonstrate that how social wellbeing, emotional wellbeing, and resilience are understood is specific to our study setting.

### **PURPOSE OF THIS STUDY**

As our review of the literature demonstrated, the impact of PSS on the social wellbeing, mental wellbeing, and academic outcomes of students living predominantly in North America and Western Europe is well established. While the literature on PSS and SEL in North America provides strong construct- and criterion-validity evidence of wellbeing measurement instruments, these instruments are primarily tested on and validated with sample populations in a nonemergency context. We argue that the study of wellbeing, PSS, and SEL demands careful consideration of the distinct way social wellbeing, emotional wellbeing, and resilience domains can be observed and measured in diverse and complex settings, such as South Sudan. To achieve the overarching objective of this research project—that is, to measure the effectiveness of PSS interventions on children’s wellbeing in South Sudan—a more contextually aligned view of the instrument design, its domains, and its interpretation is needed.

### **IMPLEMENTING PSYCHOSOCIAL SUPPORT INTERVENTIONS IN SOUTH SUDAN**

There is evidence that children in conflict-affected settings are more likely to start school with lower levels of social-emotional skills (Ursache, Blair, and Raver 2012). Additional research suggests that school-based interventions help to build children’s early social-emotional competencies, such as behavior regulation (Blair 2002), attention regulation, and problem-solving (Diamond and Lee 2011), all of which affect their academic outcomes (McCormick et al. 2015). As a result, the US Agency for International Development (USAID) requested an impact evaluation study in South Sudan to test these assumptions and build an evidence base for including PSS in education programs in conflict settings, with a particular emphasis on isolating the impact PSS has on academic skills, such as reading and math.

Since 2015, UNICEF South Sudan has attempted to implement PSS activities in schools throughout the country. A training manual of PSS resources that UNICEF developed for use in CFS, schools, and communities offered instructions for conducting activities at a variety of age levels, which were centered around play, learning, and wellbeing. Due to the wide variation in learning environments and in the age of students participating in the programming, and the fact that implementation in South Sudan is carried out through several subimplementing partners involved in relief interventions, there is no unified curriculum that fits the needs of all learners. Many of the PSS activities were carried out in temporary learning spaces or CFS developed by UNICEF, which trained teachers to implement PSS interventions across much of the country. Several nongovernmental organizations (NGOs) also trained PSS facilitators. Most of these organizations employed consultants who were either South Sudanese or international workers. The psychologists and practitioners engaged by NGOs also were both local and international. However, high attrition rates among teachers resulted in inconsistent implementation of the program.

One of our authors participated in and observed a PSS training session offered by UNICEF. The main PSS activities were designed to help teachers identify children with unique needs and problems and to support them in dealing with their grief, suffering, loss, and a gradual return to normalcy. These activities were categorized into seven themes: creative, imaginative, physical, communicative, manipulative, cultural/traditional, and participatory.

- *Creative activities* were designed to help children express their feelings and ideas. Activities included painting, drawing, clay molding, making dolls, etc.
- *Imaginative activities* were intended to help children develop creative social skills, and to gain an understanding or make sense of what happened or is happening in their lives. Activities included dance, theatre/drama, music/singing, role-play, etc.
- *Physical activities* were conceived to help children develop self-confidence and motor skills, and to facilitate peer interactions. Activities included football, volleyball, outdoor team games, and traditional games.
- *Communicative activities* aimed to help children express their feelings in words and to discuss important issues in their lives. Activities included stories read from books and oral storytelling, reading, and focus group discussions and debates.

- *Manipulative activities* had the goal of improving children’s problem-solving and cognitive skills. Activities included doing puzzles, using building blocks, and molding clay.
- *Cultural/traditional activities* were intended to help children appreciate their own culture and to give them a sense of being part of the community, despite what they had gone through. Activities included dancing, singing, traditional games, storytelling, poetry, etc.
- *Participatory activities* were developed to enhance children’s and youths’ resilience and adaptability, create good relations among the children, give them a sense of civic responsibility, and help them develop cognitive functioning. Activities included learning life skills such as reading and numeracy, landmine awareness, health education, and joining in community events.

All the PSS activities were categorized according to the children’s ages and, where possible, gender.

Teachers were trained to identify and respond to students who were experiencing distress while at school, and to offer what could be termed psychological first aid; they were instructed to refer serious cases to specialists. The implementing agencies and their partners constructed CFS in or near schools where the PSS activities could be carried out. The CFS in South Sudan were largely structured to handle “relatively short to medium-term program responses. They are very often operated from tents and/or temporary structures (e.g. in schools, under a tree or a vacant building)” (Davis and Iltus 2008, 9). Many CFS in South Sudan were set up to enhance what the formal learning spaces offered. This involved providing key PSS/SEL interventions in a context where students and teachers had been under attack by armed forces, and were subjected to sexual and gender-based violence, forced recruitment, and other threats. While regular classroom teachers were not expected to be equipped to deliver PSS/SEL services, teachers working in CFS were uniquely trained to deliver these interventions to children and youth affected by conflict and crisis.

Displacement often brings large numbers of children into local classrooms. CFS were set up to provide spaces where the schools could run double shifts, and thus be able to provide all children with learning opportunities. Communities also created CFS to provide nurturing environments where children could enjoy both free and structured play, recreation, leisure, and learning activities. CFS, which are

designed and operated in a participatory manner, also provide health, nutrition, psychosocial support, and other activities that restore children's sense of normality and continuity. In South Sudan, the children's local language, ethnic make-up, and education level influence which social skills, emotional competencies, and psychosocial supports are provided.

Since 2015, more than 560,000 South Sudanese children and youth have received PSS through the Integrated Essential Emergency Education Services, a USAID-funded program that was implemented by UNICEF with the aim of reaching South Sudan's 2.2 million out-of-school children and youth. The authors of this paper were part of a multi-institutional consortium of multidisciplinary partners who evaluated the impact of these interventions in order to inform the future allocation of resources. The overarching objective of the research project was to investigate the impact of the PSS intervention on the wellbeing and academic outcomes of the South Sudanese children who received it. Thus, our larger research team set out to test the theory that children who receive PSS and SEL interventions will have a greater sense of wellbeing, as well as higher math and literacy outcomes, than their peers who did not receive the intervention. The study we describe in this article, which was developed as a subset of the larger study, specifically aimed to develop a more contextually aligned instrument that we could use to measure the impact of these interventions on local perceptions of wellbeing outcomes.

### RESEARCH QUESTIONS

Our study was guided by the following research questions:

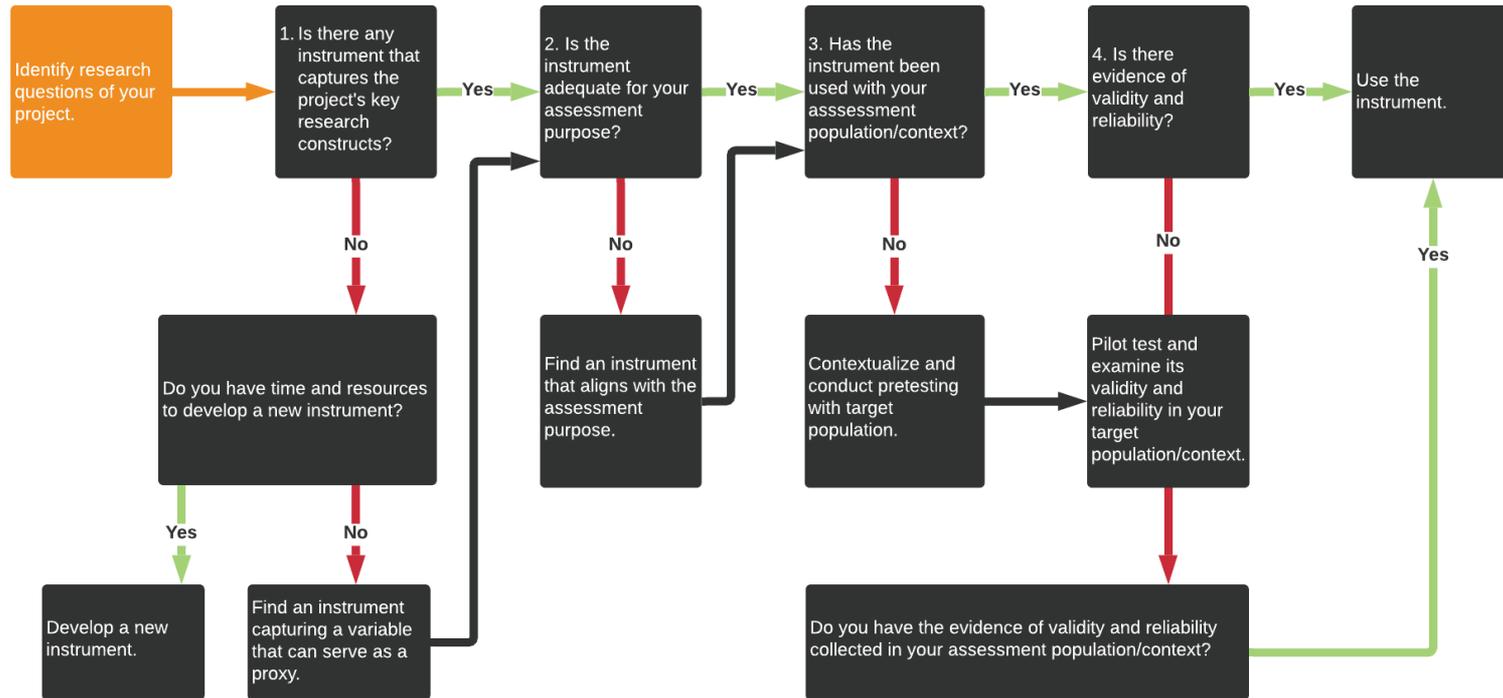
- What is a relevant and inclusive process for teams to follow to identify constructs and questions and to test the adaptation of instruments to measure the wellbeing of students in South Sudan or similar contexts?
- What is the evidence of the validity of an instrument that was adapted to measure the wellbeing of students in South Sudan? What information do confirmatory and exploratory factor analyses provide for understanding wellbeing in conflict settings?
- What is the structure of the wellbeing domains when measured in the specific context of South Sudan?

## METHODOLOGY

### FRAMEWORK

The instrument we developed for this study follows the recommendations provided in *Measure Guidance: Choosing and Contextualizing Assessment Measures in Educational Contexts* (Diazgranados Ferráns and Lee 2019). The procedure outlined in this guidance document specifies five consecutive steps for instrument development: (1) identify the key research questions, (2) identify an assessment that matches the needs of the research, (3) review evidence of the validity and reliability of existing instruments for the target population in the setting of interest, (4) contextualize the instruments to meet the specific contextual needs, and (5) conduct a validation study. The guidance document also presents a decision tree (Figure 2), with recommendations for alternative steps to take if the requirements of any step are violated.

Figure 2: A Decisionmaking Tree to Guide the Process of Choosing and Contextualizing Measures in Unique Contexts of Conflict and Crisis



Source: Extracted from Diazgranados Ferrás and Lee (2019)

### INSTRUMENT DEVELOPMENT

Following the five steps outlined here, we present our approach to the development of the instrument we used in this research (Figure 3). A consortium of researchers and stakeholders from North American and African universities and NGOs, with representatives from USAID, the USAID South Sudan Mission, and UNICEF, met at a workshop in early 2019 to develop a common understanding of the objectives of this research project. At the meeting, we consulted with our team's experts on psychosocial wellbeing measurement to discuss the availability and suitability of instruments to measure specific aspects of child psychosocial wellbeing in emergency settings. Using existing guidance (Bohl et al. 2018; Ager, Ager et al. 2011), we itemized three broad measurement domains: emotional wellbeing (comprising emotions/feelings and behaviors), social wellbeing, and the ability to cope (resilience and skill-building). Researchers and research associates who were indigenous to South Sudan and had intimate knowledge of the population commented on the local conceptualization of these wellbeing outcomes. Their comments were crucial to our final selection of instruments to measure these outcomes.

Eleven measures and instruments were originally presented for consideration:

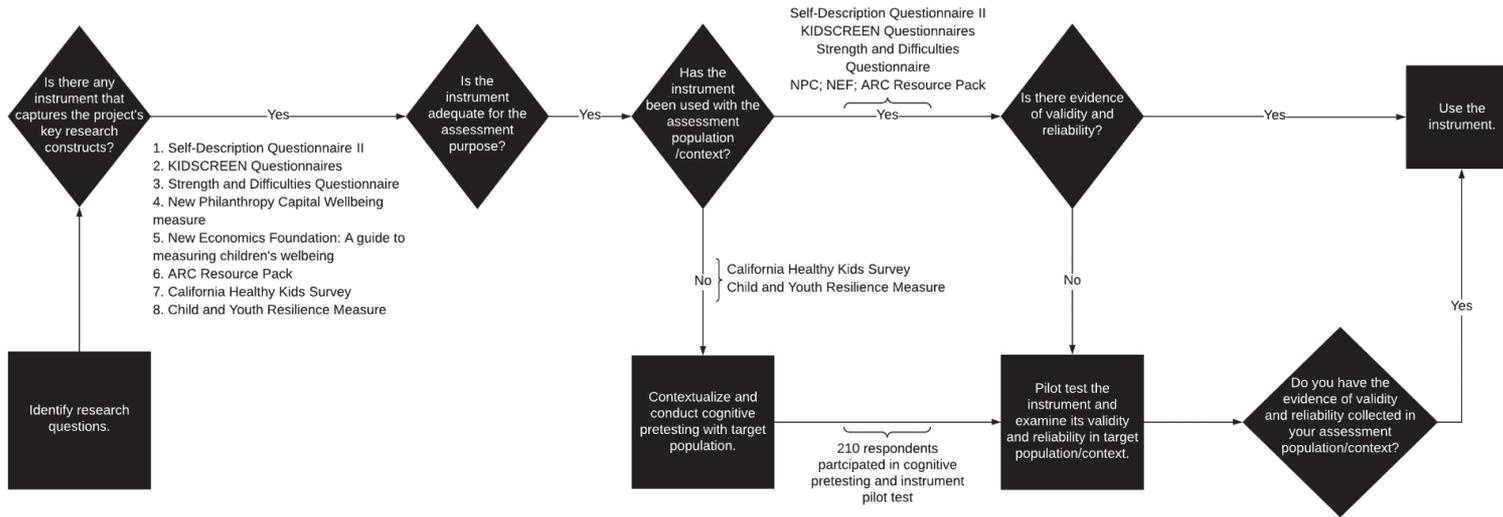
- The California Healthy Kids Survey (California Department of Education 2007)
- The Child and Youth Resilience Questionnaire (Ungar and Lidenberg 2016)
- The KIDSCREEN questionnaires (Ravens-Sieberer and the KIDSCREEN Group Europe 2016)
- The Multidimensional Students' Life Satisfaction Scale MSLSS (Huebner et al. 1998)
- The New Philanthropy Capital wellbeing measure (2011)
- The New Economics Foundation guide to measuring children's wellbeing (Thompson and Aked 2009)

- The Resilience Scale (Wagnild and Young 1993)
- The Rosenberg Self-Esteem Scale (Rosenberg 1965)
- The Self-Description Questionnaire II (Marsh et al. 2005)
- The Strengths and Difficulties Questionnaire (Goodman 1997)
- The UNICEF ARC Resource Pack (2009)

These 11 were chosen because they are the ones most commonly used as quantitative measures with children, for their validity and reliability, and because they measured the subdomains being evaluated. Measures that had not been tested in similar contexts were eliminated. Those that would overlap with the subdomains targeted in the UNICEF PSS activities were selected.

Participants discussed the cultural appropriateness of the different measures and instruments for the South Sudanese population. Three instruments were excluded (MSLSS, RSES, and the Resilience Scale) based on relevance, and on the local experts' and implementing partners' knowledge of and experiences in the South Sudan context. For instance, the RSES focuses mainly on personality, such as an individual's feelings about him- or herself, while the MSLSS looks at children's satisfaction across six subdomains—satisfaction with school, family, friends, living environment, self, and overall life satisfaction. These constructs are captured in the instruments adopted. To avoid duplicating questions and to keep the questionnaire a reasonable length, we decided to exclude the MSLSS, RSES, and the Resilience Scale instruments. Moreover, it's generally known that children in conflict-affected areas often experience abuse and may avoid talking about family and personal matters. Such discussions could bring back painful memories (Bohl et al. 2018), and with the low self-esteem children in such situations often exhibit, it was judged prudent to exclude the three instruments in question. Thus, three measurement outcomes and eight instruments were judged relevant to the study participants. Consequently, the first and second steps of the measure guide were fully satisfied.

Figure 3: Adapted Decisionmaking Tree to Guide the Process of Choosing and Contextualizing Measures of Wellbeing in South Sudan



Source: Adapted from Diazgranados Ferrás and Lee (2019)

The third step of the decision tree resulted in a split response. Some of the instruments identified in step two were being used by the implementation partners as part of their programmatic formative assessment, whereas the other identified instruments had not been used. However, there was no evidence of the validity of either set of instruments for South Sudanese children and youth. Thus, with insights and guidance from the South Sudanese researchers who had a firsthand understanding of the context and its population, and of the challenges that may arise from translations into different languages, the likelihood of survey fatigue from filling out long questionnaires, and the appropriateness or seeming complexity of certain terms and items for different age groups, we proceeded to adapt an instrument from the existing ones.

### CONTEXTUALIZATION OF THE INSTRUMENT

South Sudan is a multilingual republic. Most of the residents speak English, Juba Arabic, Nuer, or Dinka, depending on their location and ethnic affiliation. In conducting the instrument designs, our research team also noted other languages; in Juba, for example, some students in the sampled schools spoke Acholi, Balanda, Anuak, and other indigenous languages. However, the majority in the states we covered spoke the seven languages mentioned previously. We translated the instrument into these seven languages and then translated it back to English to see if it retained its intended meaning. We then conducted pretesting and cognitive interviews. Research associates and enumerators asked students to explain to them how they understood the instruments. The pilot testing took one day and was conducted in three sites, one Juba POC school and two Juba non-POC schools. It involved approximately 70 students per school, and 210 students across grades three (P3) and eight (P8). Although students in grades six, seven, and eight were included in the pilot study, the research team experienced some difficulty in finding students in the higher grades across the schools. This was in part due to the prohibitively high dropout rate of students at higher grade levels. Consequently, the final study focused on students in grades 3 (P3) and 6 (P6).

We categorized the final survey items into three sections. Section one (10 items) collected demographic information and measures of students' home resources, like the frequency of meals. Section two (20 items) was a general wellbeing section intended for all respondents, and section three was a six-item section with questions specifically for adolescents. In total, 26 items specific to the measurement of wellbeing were adapted from validated instruments we found in the literature, from UNICEF's monitoring and evaluation tool, and from concepts the South Sudanese researchers identified as relevant to the context (see Table 1 for a full list). All 26

items were worded and scored on a four-point agreement Likert scale (1, “strongly disagree”; 2, “disagree”; 3, “agree”; and 4, “strongly agree”). The questionnaires contained no neutral responses.

With these items developed and contextualized for the specific population, the final step of the decision tree was to investigate whether the newly adapted instrument we had developed actually measured the study’s intended factors of interest. We conducted a factor analysis test to obtain this evidence, and the findings are the focus of this paper.

We employed an iterative set of confirmatory factor analyses (CFA) and exploratory factor analyses (EFA). We began with a CFA, using the constructs of emotional wellbeing, social wellbeing, and resilience, and their associated variables in the surveys they were drawn from (Table 1). Because the model did not fit well in the South Sudanese context, we then conducted an EFA to suggest more fitting models and, finally, a CFA to confirm the new model in this context. Below we describe the specific variables that we moved from their original constructs.

*Table 1: Items of the PSS Wellbeing Student Survey*

Item	Item Description	Code
<i>Demographics</i>		
School Name	Name of school	None
Class	Which class are you in?	1 = “P3” 2 = “P6”
Gender	Are you a boy or girl?	1 = “Male” 2 = “Female”
Age	How old are you? Please write age in years.	None
Mother Tongue	What is your mother tongue? Please write in the space provided.	
Language of Instruction	In what language do you learn in school?	1 = “English” 2 = “Arabic” 3 = “Other (write here)”
Time Spent in School	How long have you been in this school? Please tick one choice.	1 = “Less than 1 year” 2 = “1 to 3 years” 3 = “3 to 5 years” 4 = “5 or more years”

MEASURING WELLBEING AMONG CHILDREN IN SOUTH SUDAN

Item	Item Description	Code
Breakfasts/ Week	How many times do you eat breakfast in a week?	1 = "Not at all" 2 = "1 to 3 days per week" 3 = "4 to 6 days per week" 4 = "Every day of the week"
Lunches/Week	How many times do you eat lunch in a week?	
Suppers/Week	How many times do you eat supper in a week?	
<i>Wellbeing Questions</i>	<i>In the last two weeks, have you...</i>	
Worry	...been worried about anything?	Self-Description Questionnaire II
Calm	...been able to calm yourself down when you are upset or angry?	CONTEXT
Teacher Listening	...felt that your teacher listened to you and respected your ideas?	KIDSCREEN Questionnaires
Sadness	...felt sad?	Strength and Difficulties Questionnaire
Mood Understanding	...been able to understand your moods or feelings?	California Healthy Kids Survey
Bullying	...been bullied in school?	Strength and Difficulties Questionnaire
Dispute Resolution	...been able to find friendly ways to solve misunderstandings or disputes?	Child and Youth Resilience Measure
Concentration in Class	...been able to concentrate or pay attention in the classroom?	Strength and Difficulties Questionnaire
School Environment	...felt that your school is a nice place to be in?	New Philanthropy Capital
Someone to Trust	...felt that you had someone you trust to help you when you were in need?	New Economic Foundation (NEF)
Do Free Time	...been able to do the things you wanted to do in your free time?	KIDSCREEN Questionnaires
Good Mood	...been in a good mood?	KIDSCREEN Questionnaires; NEF
Time with Friends	...spent time with your friends?	KIDSCREEN Questionnaires

Item	Item Description	Code
Helping Others	...been helpful to others?	Strength and Difficulties Questionnaire
Lost Temper	...gotten angry and lost your temper?	Strength and Difficulties Questionnaire
Feeling Helpless	...been in situations where you felt helpless?	KIDSCREEN Questionnaires
Understanding Others	...tried to understand how others feel?	California Healthy Kids Survey
Parents Listening	...felt that your parents/guardians listened to you and respected your ideas?	ARC Resource Pack
Suggest Games	...suggested activities or games to do with your friends?	KIDSCREEN Questionnaires
Bad Dreams	...had bad dreams?	Strength and Difficulties Questionnaire
Adolescent Questions		
Acting Responsibly	In the last two weeks, have you had opportunities to show others that you can act responsibly?	CONTEXT
Feeling Pressure	In the last two weeks, have you felt under pressure?	KIDSCREEN Questionnaires
Care of Tasks	In the last two weeks, have you done well taking care of your tasks at home or at school?	CONTEXT
Confidence during Hard Times	Do you believe that your confidence or trust helps you to get through hard times?	CONTEXT
Things Me Good	A lot of things about me are good.	New Philanthropy Capital
Friends Stand By	My friends stand by me during difficult times.	Child and Youth Resilience Measure
If I Try	If I really try, I can do almost anything I want to do.	Self-Description Questionnaire II

*Note:* Self-Description Questionnaire II (Marsh et al. 2005), KIDSCREEN Questionnaires (Ravens-Sieberer and the KIDSCREEN Group Europe 2016), Strength and Difficulties Questionnaire (Goodman 1997), California Healthy Kids Survey (California Department of Education 2007), Child and Youth Resilience Measure (Ungar and Liedenberg 2011), New Philanthropy Capital (2011), New Economics Foundation (Thompson and Aked 2009), ARC Resource Pack (UNICEF 2009)

## SAMPLING

We employed a two-stage sampling strategy. First, we purposively sampled 64 schools from 5 states (Central Equatoria, Western Equatoria, Upper Nile, Unity, Jonglei) in the Republic of South Sudan that had the potential to provide both treatment and control schools. To provide a sample that included diverse locations, we chose the five states in consultation with UNICEF, the implementers, and members of the USAID South Sudan Mission. We chose the five states based primarily on the areas where USAID had been implementing its activities for the longest time. Accessibility was another major consideration. Other parts of the country were receiving similar interventions but for a shorter time, so we were concerned that we would not detect an equally strong effect.

In line with the “do no harm” principle of emergency education settings (European Commission 2019), we secured access to the research sites only after the South Sudan Ministry of General Education and Instruction (MoGEI), which served as the review board for the study, had granted permission. With the notable exception of the demographic data described in the previous section, we did not collect any identifying data from participants of the quantitative study.

The final school selection comprised 36 treatment schools that had received the PSS intervention at the time of the study (targeted teacher training by UNICEF and implementing partners) and 28 control schools that had not received it but were located relatively close to the treatment schools or shared a similar profile. It is worth noting that all the POC schools were treatment schools. Teachers in most of the schools (even control schools) had previously been trained in PSS.<sup>1</sup> What differentiated the treatment schools from the control schools was the inclusion of a class or session during the school day where children would have participated in more dedicated and purposeful activities.

Second, we selected 2,982 students and 580 teachers, including on average 10 teachers per school, 15 students randomly sampled from grade P3, and 35 students randomly selected from grade P6. We selected these grades to provide a mix of younger and slightly older students who had the literacy skills to complete the surveys. The students were randomly selected to complete the PSS outcomes survey we review in this article, and the teachers were required to answer a questionnaire.

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<sup>1</sup> Although we also gathered data on the teachers, their characteristics are not within the scope of this paper.

Of the 2,982 students randomly sampled for this study, 40.3 percent were in the control schools. Boys accounted for about 60.7 percent of the participants (Table 2). Grade P3 respondents were between ages 8 and 22, with a median and modal age of 13, while grade P6 respondents were between ages 10 and 37, with a median and modal age of 16. In our sample population, 96 percent of the male respondents and 99.5 percent of the female respondents fell within the age range of 8 to 20 (Table 3). As previously noted, in this factor analysis we focused only on data from students' responses to questions about their wellbeing.

Due to the overall age distribution of primary school students in South Sudan and the high rate of overage students, the sample of student respondents spanned a broad range of ages—8 to 34, with a median age of 13 in P3 and 16 in P6. The age breakdown of primary and secondary school students in South Sudan is significantly affected by several factors, including late entry into school, migration or displacement, and frequent school closures or interruptions due to conflict. As of 2016, nearly 90 percent of students in South Sudan's primary schools were considered overage, and 93 percent of secondary students (MoGEI 2017). In the later primary and secondary school years (P6-P8), the population of significantly overage students (defined as more than five years over age) is more than 50 percent for boys. The percentage of significantly overage girls declines at that point, as they become more likely to drop out due to early marriage or pregnancy. While this trend is true across the nation, it is particularly evident in the most vulnerable and conflict-affected states, where conflict frequently interrupts schooling and efforts are made to reintegrate former child soldiers back into school (Skårås 2017). For these reasons, we decided not to drop the overage students' data from our study. However, we suggest that readers interpret the results of this study as tentatively generalizable to this broad age range.

*Table 2: Frequency Distribution of Survey Respondents by Gender, Location, and Class*

Category	Groups	Frequency	Percentage	Age (in years)		
<i>Students (n=2982)</i>		Min	Max	Median		
<i>Gender</i>	Male	1750	60.7			
	Female	1131	39.3			
<i>Class</i>	P3	986	33.1	8	22	13
	P6	1996	66.9	10	37	16
<i>Intervention Status</i>	Control	1201	40.3			

Category	Groups	Frequency	Percentage	Age (in years)		
<i>Location</i>	Treatment	1781	59.7			
	Unity	1042	34.9			
	Jonglei	780	26.2			
	Upper Nile	251	8.4			
	Western Equatoria	420	14.1			
<i>Schools (n=64)</i>	Central Equatoria	489	16.4			
<i>Intervention Status</i>	Control	28	43.8			
	Treatment	36	56.2			

Table 3: Age Distribution of Survey Respondents by Gender

Gender		Male	Female	Frequency	Percentage
		Frequency	Percentage		
<i>Age Distribution (in years)</i>	8-20	1674	95.7	1125	99.5
	21-30	67	3.8	5	0.4
	30-37	9	0.5	1	0.1

**DATA COLLECTION**

To facilitate data collection in the field, we printed paper copies of the survey questionnaires. The surveys were administered by research associates (RAs) who were either members of the community or had a general knowledge of the community’s cultural norms. They were supported by enumerators who were native speakers of the indigenous languages spoken in the study sites. The RAs and enumerators were trained twice before each data-collection phase. They performed mock demonstrations during the training sessions and at the piloting stage. No RA or enumerator was allowed to work alone. Each data-collection team consisted of one RA and one or two enumerators. The teams traveled to peri-urban and rural areas to survey treatment schools and corresponding control schools. During the data collection, questions that had been identified as difficult to understand during the pilot testing were explained in the local languages.

Participation was voluntary. Participants were informed that they could choose not to participate in any activity they did not properly understand or felt uncomfortable with. If a student felt like stopping at any time, she or he was permitted to do so without being pressed for their reasons. The aims, objectives, and significance of the study were explained to the participants, and those who did not raise their hands to volunteer were not forced to. Where necessary, teachers from the participant schools were involved to allay students' suspicions, providing their presence did not appear to make the students uneasy. All the supports crucial for the success of the study and to comply with the "do no harm" policy (Bonis Charancle and Lucchi 2018) were strictly followed.

The support, translation, and supervision the enumerators and RAs provided were very effective, and we ultimately achieved the high response rate of 99.16 percent. All data collected in the field were scanned and saved in a secure repository. The scanned files were then entered into Qualtrics (an online survey tool) and reviewed by an assigned data custodian prior to the analysis that was conducted by the multinational team and reviewed by an assigned data custodian.

## RESULTS

### VALIDITY TESTS

We used both EFA and CFA in this study. EFA is particularly useful in investigating latent variable structures from continuous data (Costello and Osborne 2005), as it examines assumed underlying characteristics of items/variables through correlation patterns between them. However, since we had a theoretical model recommended by our expert on psychosocial wellbeing measurement, we began by conducting a CFA using the three suggested latent constructs: intrapersonal, interpersonal, and ability to cope factors (Henson and Roberts 2006). After determining that the model functioned poorly in this context with this population (results of the original CFA did not meet thresholds for model fit, with RMSEA=0.068; TLI=0.642), we then used EFA to analyze the data collected from the survey instruments for the latent factor structure (see parallel analysis scree plot, Figure 5). This process revealed possible factor models that we evaluated using indices of fit and procedural recommendations for the elimination of poor models (Bandalos 2018). Having eliminated poor factor models, we then used an acceptable model in the next stage of CFA. We employed an iterative process of consulting theory to make informed decisions about our factor structures and to

connect the well-fit models to theoretical support for the psychosocial constructs they were measuring.<sup>2</sup>

Following recommendations about EFA and CFA data preparation from the methodological literature (Costello and Osborne 2005), we first randomized our data before splitting it into two halves. We used the first half of the data (1,400 cases) for EFA and the second half (1,582 cases) for CFA.

### **CONFIRMATORY FACTOR ANALYSIS OF THE THEORETICAL THREE-FACTOR MODEL**

For CFA, we analyzed two three-factor models for fit and convergence. The first model was our initial structure, which, based on the literature, assumed three factors. Note that these loadings (shown in Figure 4) differed from the EFA-informed three-factor model.

We used a latent variable analysis (Lavaan) package for the analysis. Since the existing factor structure did not meet thresholds for model fit, we then conducted EFA to modify our latent structure.

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<sup>2</sup> While procedures suggested conducting a multivariate and univariate normality test prior to the factor analysis, we observe that our four-point Likert response scales are on an ordinal scale and would not align with this assumption.

Figure 4: Confirmatory Factor Analysis Path Diagram of Theoretical Three-Factor Model

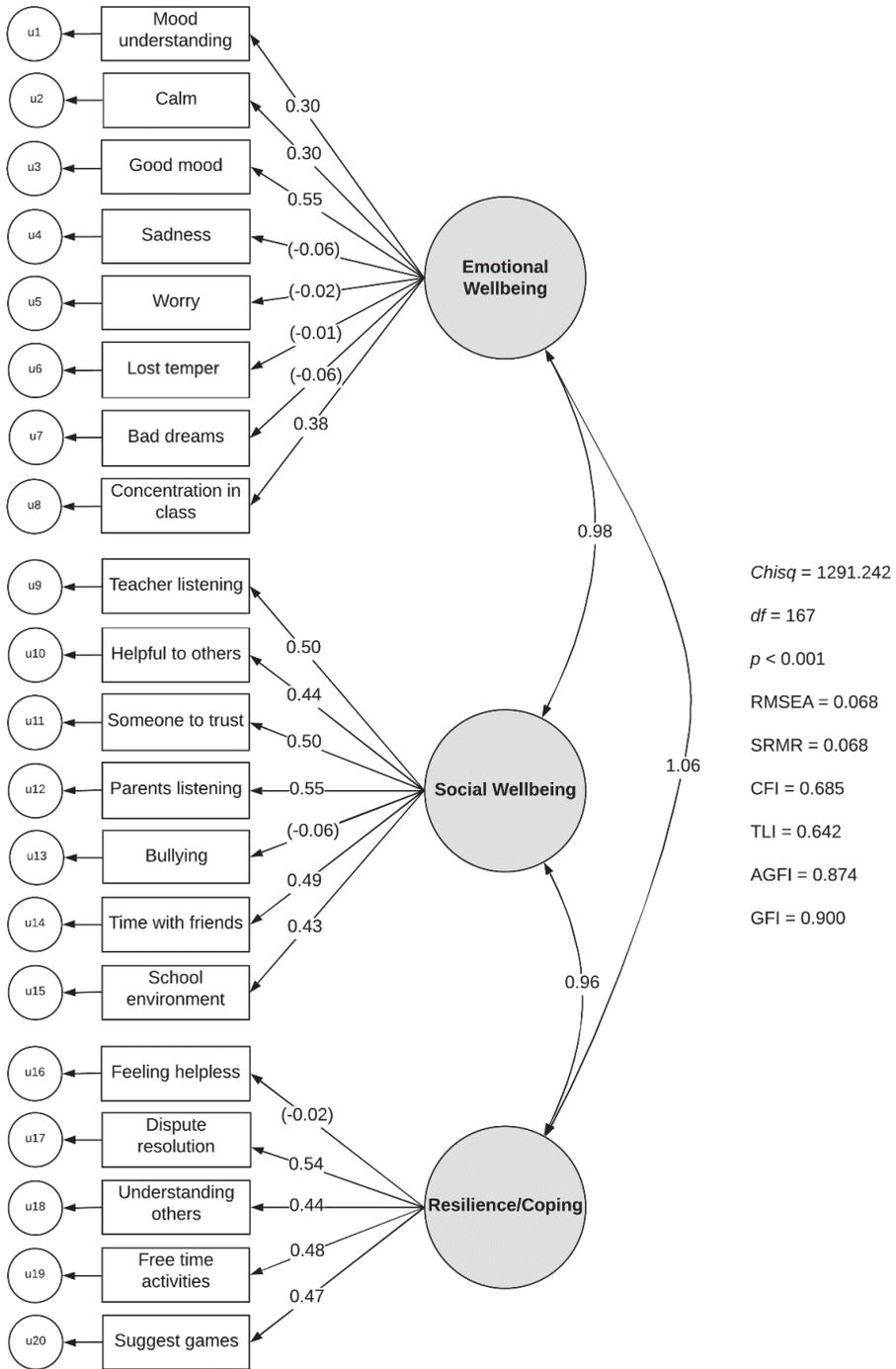


Table 4: Confirmatory Factor Analysis of Theoretical and EFA-Informed Model

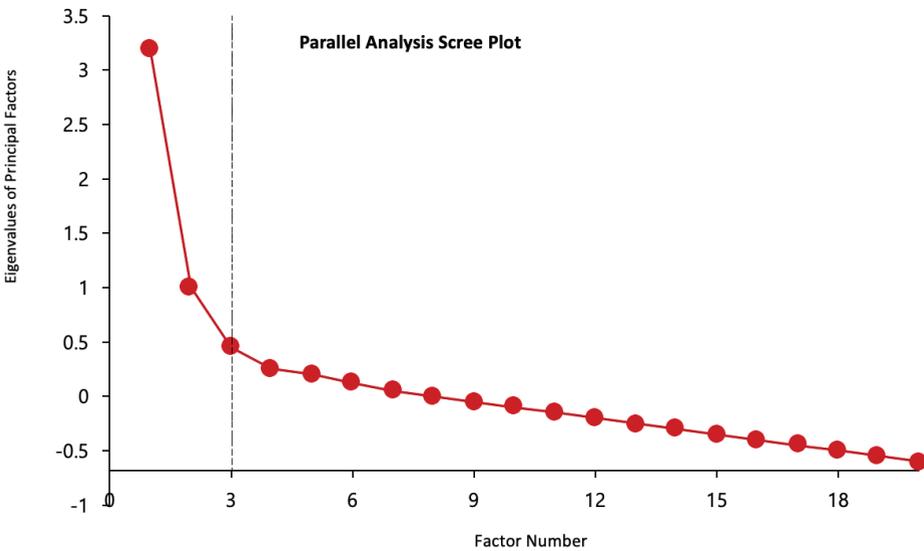
Models	2	df	2/df	p	RMSEA	TLI	CFI	GFI	AGFI
<i>Thresholds for Acceptable Fit</i>			$\leq 5.00$	$\geq 0.05$	$\leq 0.05$	$\geq 0.80$	$\geq 0.85$	$\geq 0.80$	$\geq 0.85$
Theoretical Model	1291.242	167	7.732	<0.001	0.068	0.642	0.685	0.900	0.874
EFA Model	629.703	167	3.771	<0.001	0.043	0.853	0.870	0.956	0.945

Note: Recommendations for acceptable fit are based on Hu and Bentler (1999). RMSEA, root mean square error of approximation; TLI, Tucker-Lewis index; CFI, comparative-fit index; GFI, goodness-of-fit index; AGFI, adjusted goodness-of-fit index; NFI, normed-fit index; BIC, Bayesian information criterion.

**EXPLORATORY FACTOR ANALYSIS**

Because the established model did not function well, we explored potential two-, three-, four-, and five-factor solutions to identify a statistically and substantially viable alternative model. Each of these factors was examined for fit. In the two-factor structure, factor 1 comprised 14 items, all with single-factor loadings ranging from 0.3 to 0.5, and factor 2 had 6 items with single-factor loadings from 0.4 to 0.5. However, the fit was poor (RMSEA=0.039; TLI=0.886). The four- and five-factor model analyses revealed insignificant variable loadings and were discarded.

Figure 5: Scree Plot



For the three-factor model (see Table 5, informed by the scree plot), factor 1 was composed of nine items with single-factor loadings from 0.35 to 0.55. Factor 2 comprised five items with factor loadings from 0.36 to 0.51. Factor 3 had five items with loadings from 0.39 to 0.46. The model also had acceptable fit indices (see Table 5; RMSEA=0.029; TLI=0.939). The EFA suggested that a three-factor model was indeed the most fitting structure, although the loading differed slightly and in informative ways from our initial theoretically prescribed model.

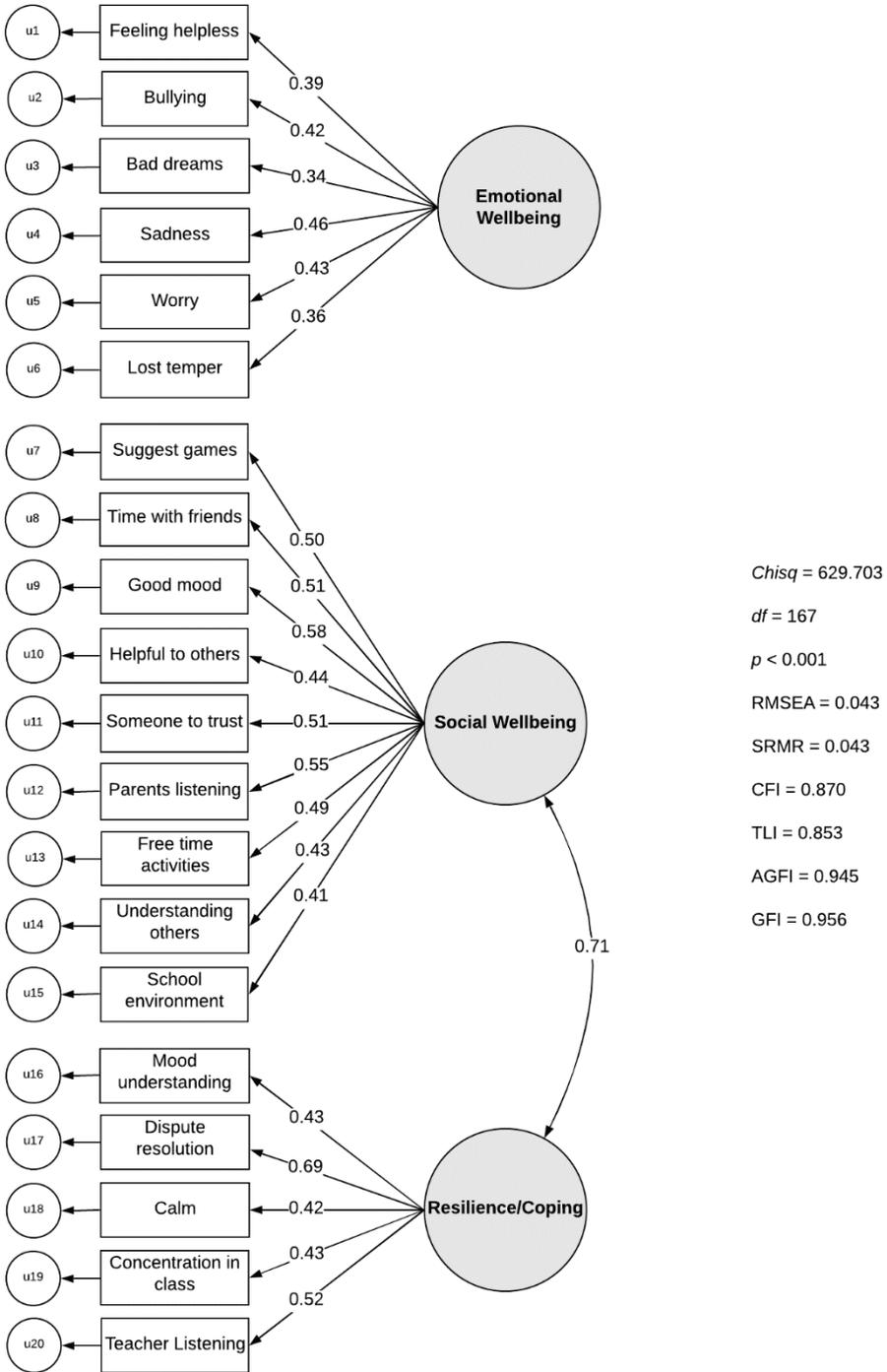
*Table 5: Exploratory Factor Analysis of the General Wellbeing Items (RMSEA=0.029; TLI=0.939)*

Items	Factor	Dimension		
	<b>1</b>	<b>2</b>	<b>3</b>	
Good Mood	<b>0.52</b>	-0.01	0.06	Social Wellbeing
Do Free Time	<b>0.53</b>	-0.00	0.04	
Time with Friends	<b>0.54</b>	0.03	-0.09	
Someone to Trust	<b>0.55</b>	-0.04	-0.05	
Suggest Games	<b>0.52</b>	0.00	0.02	
Parents Listening	<b>0.45</b>	-0.12	0.10	
Helping Others	<b>0.48</b>	0.03	0.08	
Understanding Others	<b>0.38</b>	0.12	0.13	
School Environment	<b>0.35</b>	-0.09	0.15	
Calm	-0.03	0.03	<b>0.48</b>	Resilience/Coping
Dispute Resolution	0.14	0.02	<b>0.51</b>	
Mood Understanding	-0.04	0.00	<b>0.47</b>	
Concentration in Class	0.21	-0.01	<b>0.36</b>	
Teachers Listening	0.20	-0.05	<b>0.36</b>	
Feeling Helpless	0.15	<b>0.45</b>	-0.12	Emotional Wellbeing
Sadness	-0.11	<b>0.46</b>	0.10	
Lost Temper	0.05	<b>0.44</b>	-0.11	
Bullying	-0.11	<b>0.42</b>	0.09	
Bad Dreams	0.02	<b>0.40</b>	-0.02	
Worry	-0.06	<b>0.39</b>	0.14	

*Note:* Extraction method; maximum likelihood; Rotation method; Oblimin with Kaiser normalization. Loadings larger than 0.30 are in bold

The EFA-informed three-factor model showed a better model fit (as noted in all fit metrics given in Table 4).

Figure 6: Confirmatory Factor Analysis Path Diagram of EFA-Informed Three-Factor Model



## SUMMARY

After our iterative factor analysis, the questions still fell into the three commonly used categories or domains. However, as a result of our CFA of the three-factor model, some of the questions no longer matched with their expected factors. As noted in Figures 4 and 6, three questions that were expected to measure resilience/coping skills (“understanding how others think or feel,” “doing things you want in your free time,” and “suggesting activities with friends”) were instead matched to the social wellbeing factor. This added to the number of items in this factor, and it also suggests that the questions were understood in relation to others, rather than as individual experiences or skills.

The question asking whether a child “had been bullied or picked on” moved from the social wellbeing factor to the emotional wellbeing factor, suggesting that being bullied is perceived much more as having individual impact, rather than as how one relates with others. Additionally, “feeling helpless,” which would reflect a child’s self-efficacy and ability to reach out to others, was moved from the resilience factor to emotional wellbeing. This fits well conceptually, as the question focuses on feelings of helplessness (in other words, a state of being), rather than acting on the feeling, as a behavior or skill.

The third factor, which we labeled resilience, gained “teacher respected you” from the social wellbeing factor, as well as “concentrating in class,” “calming yourself,” and “understanding your mood,” all of which were former subdomains of emotional wellbeing. This shift, combined with the remaining item, “finding friendly ways to solve problems,” transitioned from a more general resilience or skills-for-life domain to a more specific domain, which we now call self-regulation. This self-regulation factor seems to relate more specifically to skills that can be applied in a classroom setting. We will investigate this construct further in future work.

The social wellbeing factor has become more broadly inclusive, perhaps indicating that students related the questions more strongly to their social interactions than to individual actions or reactions. The focus in the resilience domain (skills and knowledge) on self-regulation skills consolidates positive skills that one might learn in PSS activities, with the exception of “teacher listened to me and respected my opinions.” This raises the question of whether teacher behavior toward a student connects to their use of their skills. One possibility is that each question in this factor was understood by students specifically in relation to their school environment, and that teachers are included in that environment. It is also possible

that these are skills teachers desire, and that a teacher is more likely to listen to a student who is able to use them. The inverse is equally possible—that a teacher listening to a student will encourage them to use these skills. Given the intervention’s focus on training teachers in PSS, this would be reasonable. Where the skills are tied to interactions with the teacher, this would suggest that the self-regulation domain is also closely tied to social interaction.

## DISCUSSION

The original construction of the instrument drew questions from a set of widely used and tested instruments. These instruments contained questions that reflected the three domains and measured the subdomains that were identified by our multinational, multi-institutional working group as most relevant to the children surveyed (see Table 1). We adapted the questions from the instruments, from the UNICEF IEEF evaluation form, and from context-specific questions we constructed from recommendations made by the South Sudanese researchers on our team, including questions about feeling under pressure and taking care of responsibilities.

Our work has both methodological and conceptual implications for scholarship in the area of measurement in education in emergencies. We demonstrate in this entire study the importance of a methodological approach that requires local leadership, a review and revision of questions even in established instruments before they are distributed, and a validity check when using an instrument in a new environment.

Our work shows that wellbeing factors look slightly different in the South Sudanese context than what we find in the literature. We see that a number of specific coping skills are viewed as relevant to the individual, but also in social interactions and processes. These coping skills influence the way students see themselves relating to others. This suggests the importance of social connections in South Sudanese students’ conceptions of their wellbeing, and of the fact that PSS and the behaviors it supports are taught in the communal context of schools and child-friendly spaces. This adjustment fits with the value children place on types of learning in conflict settings beyond school subjects, including practical knowledge of social norms (Winthrop 2011).

The other major shift we see is greater specificity in the resilience factor in what we now call self-regulation. For students in South Sudan, the broad concept of resilience is understood specifically in the context of the school or CFS as skills that can be applied with knowledge gained from PSS activities. This construct of self-regulation may in fact be more precisely supportable in PSS interventions. Our work clearly shows that the way wellbeing is understood by students in South Sudan is closely related to the context of where their skills are built and practiced, and with whom they are practicing these skills and knowledge.

### **LIMITATIONS, AND IMPLICATIONS FOR POLICY AND FUTURE WORK**

Although the team used well-accepted measures and local experts to inform the construction of the tool, the changes found in the factor analysis may demonstrate that these measures still do not fully capture the nuances of psychosocial wellbeing as understood by the participants. Many additional factors could be considered in further development of the tool, including the culturally situated concepts of wellbeing and the meaning of the subdomains, the linguistic construction of questions, and how location might affect those differences. For example, the concept of resilience may make sense to academics and those who work for NGOs, but it may be less consequential in contexts where shocks or violence are ongoing and bouncing back is less relevant than persistence. The concept of wellbeing may indeed vary across states, security status, identity groups, and languages, thus causing subtleties that threaten the validity of the measure. Without the engagement of students, caregivers, and teachers to help co-construct these definitions, we clearly will not understand these differences.

However, this tool does appear to capture the general aspects of psychosocial wellbeing that are experienced across cultures and contexts, and it seems suitable for looking at large cohorts. We did find the three domains previously validated in other settings, but there were notable differences particular to the population we studied. The tool also captured one aspect of child wellbeing that local experts identified as specific to South Sudanese children: whether or not children are taking care of their responsibilities. This explains that children who are thriving are able to fulfill their responsibilities. While this is captured in the social domain through the questions about helping others, it also appears to be connected to the self-regulation domain through the behaviors expected of children in their role as students. The fulfillment of these behaviors in school also maps onto some of the skills that are central to SEL.

Triangulating the results of the survey with qualitative data will give us greater confirmation of our findings, as well as deeper insight into what remains central to wellbeing across cultures and what varies. Although we discussed overage students in South Sudan, we invite readers to exercise caution in generalizing the results of our study across a broad age range, due to the fact that less than 3 percent of our sample population was older than age 20. As part of the larger study, we conducted a second phase of qualitative data collection between September and November 2019. We selected five intervention schools, one from each state, for the interviews. We conducted two separate structured focus groups in each school with five randomly selected boys and girls from grade P6. We also conducted interviews with the PSS-trained teachers, members of the school management committee, head teachers, students' parents/guardians, in addition to the county education director, the PSS implementing partner, and the UNICEF or implementing partner's child protection officer in the area. In each of the 60 schools previously covered, we randomly selected 10 students from grade P5 to take a modified numeracy and literacy test. These data provided triangulation by allowing our team to study the relationship between PSS outcomes and students' academic performance.

This instrument will serve as a model for measuring the psychosocial wellbeing of learners under pressure from conflict and recurring crises. We will adapt it for use in ongoing South Sudan USAID-funded projects that aim to build resilience and support the recovery of children and youth. We developed a tool that could be used routinely to assess the effectiveness of mental health and psychosocial support programs in education in emergencies and will share it widely among our donors and other implementing partners working on these programs. We will share the tool in particular with the more than 60 education-focused agencies currently working to provide education in conflict-affected areas of South Sudan and will provide information about its use, intent, and results through workshops we will hold for donors, partners, and MoGEI officials. We introduced the MoGEI to this tool and took part in reviewing questions about its usefulness and providing feedback about its adaptation. We are also working with USAID South Sudan to help educators gain access to conflict-affected communities in order to conduct fieldwork on the tool.

PSS programming is mentioned in the education-sector plan led by the MoGEI relative to activities for the most vulnerable and out-of-school populations. The implementing partner, USAID, was at the forefront of the support given the MoGEI in developing its 2017-2022 plan. USAID also convenes education authorities from around the country to attend an annual meeting where all state-level education ministry representatives report on progress of the plan and discuss the challenges they are facing.

## CONCLUSION AND RECOMMENDATIONS

We find evidence for the need to establish the reliability and validity of PSS instruments when deploying them in emergency settings. Notably, the questionnaires we used had previously been used extensively, but in very different sociopolitical and cultural contexts. We find overall that the three core domains we measured (emotional wellbeing, social wellbeing, and resilience) emerged as factors in the South Sudanese context, albeit with important changes. The domain of resilience, in particular, is identified as a significant self-regulation factor in South Sudan.

One important outcome of this work is the modified instrument we present in this study. We recommend that the academic and practitioner communities use it as and when appropriate to assess wellbeing outcomes in South Sudan or similar contexts. While our results are broadly generalizable to South Sudan, we would recommend conducting appropriate reliability and validity confirmations if it is implemented in similar contexts.

Another equally important recommendation is the process through which we adapted, implemented, and reassessed the instruments we used to measure wellbeing outcomes. From the beginning of the process, local researchers prioritized domains of interest and modified the questions as appropriate. We strongly recommend that this level of collaboration and local leadership be a core facet of any work on psychosocial support and, more broadly, on the study of education in conflict settings.

## ACKNOWLEDGMENTS

The authors would especially like to acknowledge the contributions of our South Sudanese research associates—Akwero Christine Okumu, Batheng Babouth Rut, Sister Georgina Victor, and Grace Chunyua Marious Said—without whom this research would have been impossible. Also, special thanks to Wonki Lee for her insightful methodological suggestions. Thank you to all the LASER PULSE research team members, far too many to count, who made this project a success. This research is supported in part by the USAID South Sudan Mission and USAID/LAB/CDR through the LASER PULSE Consortium, under cooperative agreement No. 7200AA18CA00009.

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