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Author(s): Fernanda Soares, Nina Menezes Cunha, and Paul Frisoli

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# HOW DO WE KNOW IF TEACHERS ARE WELL? THE WELLBEING HOLISTIC ASSESSMENT FOR TEACHERS TOOL

FERNANDA SOARES, NINA MENEZES CUNHA, AND PAUL FRISOLI

## ABSTRACT

*This article reports on the development, adaptation, and validation of the Wellbeing Holistic Assessment for Teachers (WHAT) tool with a sample of 1,659 Salvadoran teachers. El Salvador is a conflict-affected country marked by high levels of gang-related violence, which interacts with education and directly affects the wellbeing of teachers. Having a contextually grounded and validated tool is imperative to further our understanding of educator wellbeing in El Salvador and other conflict-affected settings, as it enables us to generate evidence that informs policies and interventions. In this article, we describe how we reviewed and selected the measures that comprise the WHAT tool, followed by an initial conceptualization of teacher wellbeing and a description of the experiences and challenges teachers in El Salvador are facing. We describe our process for translating and adapting the selected measures to the Salvadoran context, which included conducting cognitive interviews. The results from our exploratory factor analysis provide construct validity evidence for the internal structure of the individual measures used. The exploratory factor analysis that included all the items for all the measures confirmed that each scale is indeed measuring a different construct. The results from a confirmatory factor analysis confirmed a good model fit. The process of adapting the tool and the results of our psychometric analysis provide evidence of the tool's validity, based on the content of the items in the tool, the internal structure, and its relationship to other variables.*

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## INTRODUCTION

Although teaching can be a rewarding profession, it also has been identified as one of the most stressful occupations (Grenville-Cleave and Boniwell 2012; Maslach, Jackson, and Leiter 1997). Teachers in many different contexts face multiple work-related stressors, which may include the expectation that they will manage students with behavioral difficulties; problems with parent-teacher relationships (Skaalvik and Skaalvik 2007); high job demands; a lack of autonomy and planning time; heavy emphasis on accountability measures; and school systems becoming more bureaucratic (Curry and O'Brien 2012). However, in low-income countries and countries affected by crises and conflict, teachers face a unique set of challenges, both in and out of work (Wolf et al. 2015). In these settings, classrooms may be overcrowded and underresourced, teacher-to-pupils ratios may be high. Moreover, while teachers often are expected to accommodate the mental, social, and emotional needs of their students, they themselves may need support in dealing with their personal psychosocial issues (Wessels and Wood 2019; Kirk and Winthrop 2013; Burns and Lawrie 2015). Heavy and often increasing workloads, limited incentives, and low compensation make the situation for teachers even more challenging (Bennell and Akyeampong 2007).

In crises and conflict settings specifically, students often bring the effects of poverty, trauma, and exposure to conflict into the classroom. Regulating their own negative emotional responses when dealing with students' misbehavior, which often is associated with exposure to trauma and violence, can be a major source of stress and burnout for teachers (Carson, Weiss, and Templin 2010; Montgomery and Rupp 2005; Sutton and Wheatley 2003). In such settings, the teachers themselves are also likely to have experienced conflict-related trauma, and schools may be located in high-conflict areas and be targeted for attack (Wolf et al. 2015). Teachers in conflict-affected and insecure contexts tend to play multiple roles with their students: supporting the children's overall academic and social-emotional growth; being a key caregiver, especially for children who have lost their parents to conflict or displacement; addressing children's overall development; and being their mental health provider, which involves tending to their wellbeing (Sommers 2004; INEE 2010; Frisoli 2013). Teacher wellbeing has implications for the quality of teaching, equitable student access to education, student learning and wellbeing, and the retention and sustainability of the teaching workforce (Fullan 2016; Winthrop and Kirk 2005; Gastaldi et al. 2014).

To inform policy and advance research on teacher wellbeing in low-income and crisis- and conflict-affected contexts, we need measurement tools that are reliable, valid, comparable, and feasible, and also contextually relevant. If education systems, school districts, and school-based leadership are to support teachers adequately, they must know what teachers are experiencing in order to determine how they can make that experience better. Several measurement tools with strong psychometric properties have been developed and validated in the Western context to capture different dimensions of wellbeing, but we do not know if they are adequate for collecting information about teachers' wellbeing in low-income and crisis-affected countries. Researchers and practitioners often use measurement tools that were developed for use in developed countries, with little adaptation. This raises the question of whether the tool can accurately capture the intended construct in a different context. Few studies have focused on adapting and examining the psychometric properties of wellbeing measurement tools with teacher samples in low-income and crisis-affected countries (exceptions include Aboagye et al. 2018).

With this study, we contribute to the literature and to education practice in crisis- and conflict-affected contexts by developing, contextualizing, and validating the Wellbeing Holistic Assessment for Teachers (WHAT) tool, which provides a new multidimensional measure of teacher wellbeing in El Salvador. Given the constraints on resources, logistics, and time that policymakers and practitioners often face when working in conflict-affected settings, our goal was to develop a short, self-administered tool that teachers could complete independently with minimum assessor support. In this article, we first provide a brief overview of the Salvadoran context and how current levels of violence interact with education, followed by a conceptualization of teacher wellbeing and the constructs selected for the WHAT tool. After establishing the contextual background and conceptual underpinnings, we then highlight the purposes and structure of the study.

## THE SALVADORAN CONTEXT

The rivalry in El Salvador between two local gangs, Mara Salvatrucha and Barrio 18, which emerged in the aftermath of the 1979-1992 Salvadoran civil war, has been the primary driver of the high level of violence the country has been experiencing for nearly 30 years (ECCN 2016).<sup>1</sup> Gangs in El Salvador consider certain neighborhoods

1 The phenomenon of local gangs, or *pandillas*, was influenced by a US policy launched in 1992 that led to massive deportation of Salvadorian immigrants with criminal records. Youth who had left El Salvador to flee the civil war and had gotten involved in gang violence in the United States (most notably in Los Angeles) brought the US gang culture to their homeland (Borgh and Savenije 2019). "Their deportation back to El Salvador ultimately transformed the pre-existing local *pandilla* culture and organization into the *mara* model" (ECCN 2016, 13).

their territory—mostly poor, marginalized, urban communities but also rural areas (Van Der Borgh and Savenije 2019). They use violence to defend their territory against rival gangs and to control who can cross and live within their domains (ECCN 2016). The gangs oblige local businesses, bus drivers, and other local residents to pay extortion money, which is one of their main sources of income (Van Der Borgh and Savenije 2019). Salvadoran gangs are notorious for their extremely violent behavior, which instills fear and anxiety in the local residents (ECCN 2016). While gangs are dispersed throughout El Salvador, the violence is concentrated in the municipalities; while a substantial portion of the country is homicide free, some municipalities have extremely high homicide rates (Ingram and Curtis 2014).<sup>2</sup>

The current high level of violence in El Salvador has a direct impact on education and teacher wellbeing. According to the country's ministry of education (MINED 2015), gangs directly threaten the internal security of 24 percent of the nation's schools, and 65 percent of schools are affected by a gang presence in their community. Gangs usually consider the schools in their territory to be their "property"; they often threaten and extort school staff members and prevent students from crossing into their territory to attend school (ECCN 2016). Teachers in particular are directly affected by gang violence: in 2015, 3.55 percent reported receiving threats from gangs and 2.36 percent experienced extortion; in fact, teachers in 7.35 percent of the nation's schools were extorted in or around their school (MINED 2015). The Rapid Education and Risk Analysis (RERA) ECCN conducted in El Salvador in 2016 revealed that working in an environment of intimidation is stressful for teachers and that they express a need for psychological support. The study also revealed that teachers feel overwhelmed and underequipped to handle the emotional needs of their students, who come to school burdened by the effects of violence, threats, and family difficulties. Teachers also reported feeling threatened and being afraid to teach and discipline students who are, or are related to, gang members.

## CONCEPTUAL FRAMEWORK

General wellbeing, like occupational wellbeing, is a multidimensional phenomenon comprising affect, cognition, motivations, behaviors, and physical health (Van Horn et al. 2004; Klusmann et al. 2008).<sup>3</sup> Affective wellbeing, which is commonly identified as the most central aspect of overall wellbeing, is defined as experiencing

<sup>2</sup> Forty percent of the homicides occurred in only 5 of the country's 262 municipalities in 2019: San Salvador (12%), San Miguel (10%), Santa Ana (7%), Apopa (7%), and Mejicanos (5%) (Asociación Civil Diálogos 2020).

<sup>3</sup> Teacher occupational wellbeing specifically "encompasses teachers' affections, attitudes, and evaluations of their work" (Falk et al. 2019, 2).

low levels of stress and burnout, high job satisfaction, and positive emotions. Affective wellbeing is also usually the focus of interventions that aim to promote teachers' wellbeing. While certain wellbeing dimensions, such as motivation, might be difficult to teach in short-term interventions, there is a growing interest in teaching self-regulation as a protective factor against teacher stress and burnout (Mattern and Bauer 2014). The hypothesis is that teachers with more effective emotion-regulation strategies may be better equipped to deal with the emotional demands of their work that tend to increase stress and may lead to emotional exhaustion.

Specifically, self-awareness and emotion regulation have been linked to having more positive emotions and fewer negative emotions, as well as less stress and burnout (Mattern and Bauer 2014; Roeser et al. 2013; Montgomery and Rupp 2005; Chang 2009; Brackett et al. 2010). Emotion regulation is a key skill that enables teachers to maintain their desirable emotions and reduce or modify unwanted ones (Brackett et al. 2010). As Brackett et al. (2010) explain, "when managing feelings, one must be able to monitor, discriminate among, and label feelings accurately; select and employ strategies that will alter the feelings; and assess the effectiveness of these chosen strategies" (407). In a meta-analysis of 65 studies published between 1998 and 2003 that used quantitative approaches to investigate teacher stress, Montgomery and Rupp (2005) found that emotion regulation is key to preventing stress among teachers. Teachers who have the self-awareness and self-regulatory strategies that are critical to managing stress will experience less stress and burnout and will be more effective teachers.

Several studies also found a strong negative relationship between burnout and teacher self-efficacy (Aloe, Amo, and Shanahan 2014; Skaalvik and Skaalvik 2010; Tsouloupas et al. 2010; Betoret 2009; Bümen 2010; Brouwers and Tomic 2000). Although there is no conclusive empirical evidence on the direction of this relationship, Skaalvik and Skaalvik (2007) hypothesize that the relationship between self-efficacy and teacher burnout may be reciprocal. On the one hand, self-efficacy has been considered a protective factor against burnout. Building on Bandura's (1977) self-efficacy theory, Skaalvik and Skaalvik (2007) argue that people with low self-efficacy may dwell on their coping deficiencies and construe new situations as threatening, and may resort to an escapist mode of coping that can increase anxiety and stress and lead to burnout. However, burnout may also affect self-efficacy. Building again on Bandura's (1977) self-efficacy theory, Brouwers and Tomic (2000) hypothesize that enactive mastery experiences may decrease as a consequence of emotional exhaustion; that is, "the more emotionally exhausted teachers are, the poorer their performances will generally be" (248). Since self-efficacy beliefs are based heavily on experience (Skaalvik and Skaalvik

2010), self-efficacy in classroom management may decline as a consequence of diminished performance (Brouwers and Tomic 2000).

One of the main causes of burnout among teachers is students' misbehavior and the need to discipline them; both have been linked with the emotional exhaustion dimension of teacher burnout (Chan 2006; Evers et al. 2004; Sutton and Wheatley 2003). The classroom-management dimension of teacher self-efficacy is of key importance, as teachers who feel they have less ability to organize and manage students' behavior when dealing with discipline issues could be more susceptible to feeling stressed, which may lead to emotional exhaustion (Aloe et al. 2014). Brouwers and Tomic (2000), for instance, found that perceived self-efficacy in classroom management has an effect on emotional exhaustion, and they conclude that "it is important to take perceived self-efficacy in classroom management into consideration when devising interventions to prevent and to treat teacher burnout" (249).

### CHOICE OF CONSTRUCTS

In order to keep the final WHAT instrument short, our goal was to select no more than four constructs for the final tool, each captured by individual scales or subscales. The final constructs we selected were classroom-management self-efficacy (CMSE), stress, emotional exhaustion, and emotion regulation.

The choice of constructs was largely informed by our conceptual framework, and by the experiences of teachers in El Salvador, as per the findings of the ECCN (2016) RERA study, which highlighted gang threats against teachers; extortion; challenges in disciplining students who are, or are related to, gang members; and teaching in an environment of intimidation. These constant stressors, if not resolved or coped with adaptively, can lead to various negative outcomes for teachers, including high levels of stress and burnout. Indeed, the RERA report found that the teachers in their sample often experienced feelings of stress, anxiety, and fear. Given the stressors that educators constantly face in crisis- and conflict-affected settings, and the potential for these stressors to negatively affect wellbeing, we prioritized the measurement of stress and burnout in our tool. With the goal of keeping our tool short and able to generate clear results that can be interpreted easily, we focused on the emotional exhaustion dimension of burnout. It has been argued that emotional exhaustion is the central element of burnout and that the additional weight of depersonalization and reduced personal accomplishment is limited (Betoret 2009; Shirom 1989).

For the purposes of developing this tool, we considered teacher wellbeing to be a broad phenomenon that involves nonaffective aspects. We not only adapted and validated measures of stress and emotional exhaustion, we also included the construct of emotion regulation. This is due to the consensus in the literature that emotion regulation is directly relevant to teachers' stress and burnout (Brackett et al. 2010; Gross 2002), and to the implementation of teacher wellbeing interventions by I/NGOs in crisis- and conflict-affected countries that promote this construct (e.g., through mindfulness programs and socioemotional learning interventions; Falk et al. 2019). Individual differences in emotion regulation may explain differences in teachers' responses to external stressors, which influence feelings of stress and burnout. In other words, teachers will not necessarily feel stressed and burned out when facing the same source of stress—for example, dealing with students' disruptive behavior—but they may feel so depending on how they perceive, appraise, and reinterpret the situation. We also included classroom management self-efficacy as a key construct, as it may prevent teachers' stress and burnout (teachers' low self-efficacy may result in stress and emotional exhaustion) at the same time they are influenced by it (emotional exhaustion may reduce classroom accomplishments and mastery of experiences, which negatively affects self-efficacy). This multidimensional approach enabled us to assess teachers' current level of wellbeing and the protective factors (emotion regulation and self-efficacy) that may influence their responses to different stressors.

The constructs we selected reflect both negative indicators of wellbeing, such as stress and emotional exhaustion, and positive indicators, which focus on protective factors such as self-efficacy and emotion regulation. However, we left important positive aspects of subjective wellbeing, such as positive emotions and cognition, out of our conceptualization and choice of constructs. We recognize that a lack of stress and emotional exhaustion does not equate with a flourishing, successful, and healthily functioning teacher. Nevertheless, given the constant violence-related stressors teachers in El Salvador face, and the importance of protective factors in contributing to our understanding of the nature and causes of teacher wellbeing, we decided to prioritize the negative indicators of wellbeing.

### **PURPOSES OF THE PRESENT STUDY**

The overarching purpose of this study was to develop and establish the psychometric properties of the multidimensional WHAT tool with a sample of Salvadoran teachers. The specific subpurposes of this study were to (1) review and select measures for the WHAT tool (see Appendix A); (2) translate and adapt

these measures to the Salvadoran context through cognitive interviews; (3) collect new data from a sample of Salvadoran primary and secondary education teachers in order to evaluate the psychometric properties of the measures included in the tool; and (4) assess the concurrent relationship of each measure with other variables. Following this process, we selected, translated, and contextualized four measures to El Salvador: the Perceived Stress Scale (PSS); the Emotion Regulation Questionnaire (ERQ); the Emotional Exhaustion subscale of the Maslach Burnout Inventory (MBI-EE); and the self-efficacy for classroom management subscale of the Ohio State Teacher Efficacy (OSTES-CM). Results from our psychometric analysis provided validity evidence for content, internal structure, and concurrent relation to other variables for each of the four translated and contextualized measures comprising the tool. Exploratory factor analysis (EFA), which included all the items of the tool, showed six latent factors, and the confirmatory factor analysis (CFA) confirmed a good model fit. Having a validated tool will help meet the call for research that helps to increase understanding of current levels of educator wellbeing in low-income and crises- and conflict-affected contexts, and for an exploration of the factors and interventions that can influence teacher wellbeing.

## **METHODS**

### **SELECTING MEASUREMENT TOOLS**

To select the measures that are part of the WHAT tool, we first developed an inventory of available measures that assess each of the constructs identified: perceived stress, emotional exhaustion, emotion regulation, and CMSE (see Appendix A). Subsequently, for each construct we selected measures from the inventory based on five criteria adapted from Saloviita (2015). First, we considered the extent to which the scale encompassed themes considered critical for the construct. Second, we assessed the brevity of the scale, as it would be incorporated into a questionnaire with several others. Our goal was to keep the overall questionnaire brief in order to limit responder fatigue and poor response rates. However, we were careful not to achieve brevity at the cost of reduced coverage of the target construct. Third, we looked at internal consistency as a measure of reliability, as scales containing items with high intercorrelation indicate that they measure the same construct. Fourth, we prioritized unidimensional scales to make analysis simpler and more understandable. Fifth, we aimed to include scales with items that are easy to understand.

Based on the five criteria, we selected the following measures.

**Emotion Regulation Questionnaire** (Gross and John 2003). The ERQ assesses two emotion regulation strategies: cognitive reappraisal (e.g., “When I’m faced with a stressful situation, I make myself *think about it* in a way that helps me stay calm.”) and expressive suppression (e.g., “I keep my emotions to myself.”). Cognitive reappraisal consists of examining and reinterpreting a challenging and difficult situation by reconstruing the situation in nonemotional terms and reducing its emotional impact (Gross 2002). Emotion suppression, on the other hand, involves inhibiting outward signs of inner feelings, which has been shown to increase stress and impair wellbeing (Jennings et al. 2017; Gross 2002). The ERQ consists of ten items measured on a seven-point Likert-type scale (1, “strongly disagree,” to 7, “strongly agree”).

**Perceived Stress Scale** (Cohen et al. 1983). The PSS assesses the level of perceived stress during the previous month. Its short form consists of ten items (e.g., “How often have you felt that you were unable to control the important things in your life?”) with a five-point response scale (1, “never,” to 5, “very often”). Higher scores correspond to greater levels of perceived stress.

**Emotional Exhaustion subscale of the Maslach Burnout Inventory-Educators’ Survey** (Maslach et al. 1997). This subscale measures teachers’ feelings of being emotionally overextended and exhausted (e.g., “I feel emotionally drained from my work.”) on a seven-point Likert-type scale (1, “never,” to 7, “every day”). A higher score indicates a higher level of burnout.

**Self-efficacy on the classroom-management subscale of the Ohio State Teacher Efficacy Scale** (Tschannen-Moran and Hoy, 2001). This eight-item subscale asked how much teachers can do when responding to various classroom-management challenges (e.g., “How much can you do to control disruptive behavior in the classroom?”). Items were rated on a nine-point Likert scale (1, “nothing,” to 9, “a great deal”).

#### TRANSLATION AND ADAPTATION

One person translated the selected measures from English to Spanish following the ITC Guidelines for Translating and Adapting Tests (Gregoire 2018). Two additional translators verified the translation to ensure that items on the different scales held meaning similar to that in English. The translation was a critical step, as items must be translated well linguistically to maintain an accurate comparison

of responses across cultures (Beaton et al. 2000), and to ensure that they are capturing the intended underlying construct.

In addition to being translated well, items must be adapted culturally in order to maintain evidence of validity based on content across different cultures (Beaton et al. 2000). As part of the adaptation process, the research team conducted cognitive interviews, which have been recognized in the literature as an essential technique for instrument development (Groves et al. 2011; Fowler 1995). Cognitive interviewing makes it possible to verify whether “respondents are able to understand the questions being asked, that questions are understood in the same way by all respondents, and that respondents are willing and able to answer such questions” (Collins 2003, 229-38). Cognitive interviews also provide additional evidence of validity based on content by assessing whether the respondents understand the items in the way intended on the original instrument.

The research team trained four Salvadorans to conduct the cognitive interviews and selected two schools to participate. The interviewers recruited 25 primary and secondary education teachers from the two schools to participate in the interviews, which were conducted at the school sites. In order to identify poorly worded or ambiguous items, the interviewers read each item in the questionnaire to the participating teachers, asking them to verbalize their understanding of the item, comment on the wording, and reveal their response strategy. Following a standardized template, they took detailed notes on each item. The teachers who participated in the interviews were enthusiastic about the tool and expressed appreciation for having their voices heard.

After the interviews were completed, the interviewers transcribed the notes in a central database, categorized by item and type of response. The research team then undertook an item-by-item review of participants’ understanding and wording suggestions. We maintained items that respondents found to be comprehensible and consistently interpreted; we slightly modified the wording of others.<sup>4</sup> One item from the PSS (“felt stressed and nervous”) was split into two, as some teachers reported feeling stressed but not nervous or the other way around. The translation of two items from the PSS (“unable to control the important things” and “on top of things”) was similar in Spanish (“*en control de las cosas*”), so one was excluded to avoid repetition.

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<sup>4</sup> For instance, the word *acabada/o* was changed to *exhausta/o*. The phrase “*Cuando quiero sentir una emoción menos negativa (tal como tristeza o enojo), cambio en lo que estoy pensando*” was changed to “*Cuando quiero..., trato de cambiar mi pensamiento.*”

Given the resource constraints in crisis- and conflict-affected settings, our goal was to develop a self-administered tool that teachers could complete independently in either a paper or electronic format. With the objective of having a simple and user-friendly questionnaire that respondents could easily understand and answer, we adjusted all measures selected for the tool to fit a five-point Likert scale and standardized the recall periods to two weeks. Specifically, the PSS and MBI-EE items were rated from 1 (“never or almost never”) to 5 (“every day”). ERQ items were rated from 1 (“strongly disagree”) to 5 (“strongly agree”). The OSTES-CM rating scale was adjusted in accordance with the cognitive interviews and items were rated from 1 (“not at all”) to 5 (“completely”). For all the scales in this report, higher scores reflect higher values on the underlying construct. For example, higher scores on the emotion regulation cognitive reappraisal measure indicate greater cognitive reappraisal and higher scores on the perceived stress measure indicate more stress.

### PARTICIPANTS AND PROCEDURES

The research team administered a self-reported paper questionnaire to in-service teachers who were participating in the first day of a teacher socioemotional workshop in El Salvador. The workshop was implemented by Family Health International 360 in eight departments—Sonsonate, La Libertad, San Salvador, La Paz, Usulután, San Miguel, La Unión, and Ahuachapán—with funding from the Millennium Challenge Corporation and FOMILENIO II.<sup>5</sup> It was open to all teachers within the Salvadoran Integrated Systems of Full-Time Inclusive Schools.<sup>6</sup> The questionnaire was administered to collect baseline data from teachers at the beginning of the workshop series. Before the workshop began, all participants received the questionnaire and were informed that participation in the study was anonymous and voluntary, and that they could refuse to participate or opt out at any time once they began. The paper-based questionnaire was self-reported. The procedure for administering the questionnaire and seeking consent was approved by

5 Seven of these eight departments ranked among the eight with the highest homicide rates per 100,000 people in El Salvador in 2019 (Asociación Civil Diálogos 2020). Nonetheless, it is important to note that department-level analysis of violence obscures municipal-level variations: municipalities with high homicide rates coexist within the same department with municipalities with no homicides (Ingram and Curtis 2014).

6 In 2018, the Millennium Challenge Fund of El Salvador began implementing the SI-EITP intervention in eight departments of the coastal region with funding from the Millennium Challenge Corporation. The SI-EITP model organizes neighboring schools of all grade levels into an integrated system (or cluster of schools) and implements six components (of which the socioemotional workshops are a part) in 45 integrated systems: (1) provide professional development for specialists and teachers to strengthen content and pedagogical knowledge and technological and social and emotional competencies; (2) strengthen and provide timely and effective technical assistance on pedagogy and school management through the hiring and training of 30 technical education assistants; (3) improve the governance of the 45 integrated systems; (4) strengthen English-language teaching for third-cycle and secondary schools; (5) develop reading communities; and (6) construct and rehabilitate one school in each integrated system.

the Family Health International 360 protection of human subjects committee. Out of 2,204 teachers participating in the workshop, 1,659 returned the questionnaire.

The questionnaires were processed through optical reading: 65.3 percent of the respondents were female, 71 percent were age 40 or older, and 57 percent were married. The majority of participating teachers (98%) reported having a teaching degree, a bachelor's degree, or higher; 17 percent reported teaching preschool, 58 percent elementary school, 33 percent middle school, and 14 percent high school. Unfortunately, we do not have data on the wellbeing of teachers who chose not to participate in the workshop.

## STATISTICAL ANALYSES

To evaluate the psychometric properties of the constructs, we first conducted an EFA for each construct individually, followed by an internal reliability analysis. We then explored validity evidence based on relations to other variables. Next, we conducted an EFA that included all the constructs in the same model. Finally, we performed a CFA to test whether the data fit the hypothesized measurement model.

While EFA is commonly used to explore the nature of scales and the interrelationships of items and CFA is frequently used to test hypotheses and confirm ideas, the appropriateness of EFA versus CFA remains a central question for researchers when developing instruments; no clear consensus has been reached.<sup>7</sup> Because this study was the first to implement and test the proposed teacher wellbeing constructs in El Salvador, we first fit an EFA to explore how the items of each proposed scale form a coherent factor, and then fit a CFA model to confirm our hypothesized model. In the next five sections, we describe the steps and specifications we used during the instrument validation process.

### EXPLORATORY FACTOR ANALYSIS OF EACH SCALE

We conducted an EFA separately for each of the four scales—emotion regulation (10 items), emotional exhaustion (9 items), perceived stress (10 items), classroom management (8 items)—in order to explore the latent dimensions of each. Factor loadings represent a particular item's relative contribution to an underlying factor.

<sup>7</sup> The CFA approach to fixing many or all cross-loadings at zero might be problematic and result in a more parsimonious model specification than is suitable for the data (Asparouhov and Muthén 2009). MacCallum, Roznowski, and Necowitz (1992) criticize the tendency to rely on extensive model modification to find well-fitting models using CFA, and Browne (2001) advocates for using EFA rather than CFA for exploratory purposes. Browne (2001) argues that the discovery of mis-specified loadings is more direct through a rotation of the factor matrix than through the examination of model modification indices.

They are similar to correlation coefficients and range between -1.00 and 1.00 (Raykov and Marcoulides 2008). Typically, a factor loading greater than 0.30 or less than -0.30 is used as a guideline for an acceptable factor loading, or an association between the item and the underlying factor (Raykov and Marcoulides 2008). In the case of multiple factors, items may load less than -0.30 or greater than 0.30 on one or more factors, which is called a cross-loading. In such cases, a rotation can facilitate the interpretability of factor loadings.<sup>8</sup> We conducted an EFA on a polychoric correlation matrix and applied an oblique (promax) rotation when more than one factor was retained.<sup>9</sup> To determine the number of factors to be retained, we used the Kaiser's criterion of eigenvalues greater than 1, the Cattell scree test, and parallel analysis.<sup>10, 11</sup>

### INTERNAL RELIABILITY: CRONBACH'S ALPHA

To further investigate the psychometric properties of each scale, we calculated means, standard deviations, reliability coefficients, and total item correlation. Internal consistency reliability was assessed using Cronbach's alpha coefficient. Even though there is no consensus on acceptable levels of alpha, many authors agree that reliability above 0.70 is acceptable and 0.8 or greater is preferred (Cortina 1993). Coefficients closer to one indicate that the items on the scale are highly correlated and, therefore, measure the variable of interest more accurately.<sup>12</sup> We also conducted a reliability analysis on each of the items for each measure by assessing the scale alpha coefficient when an item was deleted from it.

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8 Unrotated results from a factor analysis are not easy to interpret, and rotation was developed to help researchers clarify and simplify the results of a factor analysis. While orthogonal rotation forces the factors to be uncorrelated, oblique rotation allows for correlation between factors if that is optimal for the solution. Given that constructs tend to be at least marginally correlated, we opted for oblique rotation by applying the Promax method by Thompson (2004), considered the more desirable oblique rotation choice (Costello and Osborne 2005).

9 Polychoric correlation matrix was used to account for the ordinal structure of the data. Data from rating-scale (Likert) responses are commonly treated as continuous (Norman 2010), even though it is proper to treat such data as ordered categorical (Muthén and Kaplan 1985). EFA is conventionally based on a Pearson correlation matrix, which has been found to underestimate the strength of relationships between ordinal items and generate biased factor loadings (Baglin 2014).

10 The Kaiser criteria and scree plot have been shown to overestimate the number of dimensions in the data (Baglin 2014). Therefore, we also implement parallel analysis (conducted on a polychoric correlation matrix) using the software FACTOR (Lorenzo-Seva and Ferrando 2006). Except for the EFA that included all scales, parallel analysis yielded the same results as the Kaiser criteria and scree plot for all the constructs analyzed.

11 According to Osborne and Costello (2004), the most common guideline for the ratio of sample size to the number of variables included (participant-to-item ratio) should be at least 10 to 1. The participant-to-item ratio for this analysis was approximately 45 to 1, where sample size was 1,659 and the number of variables was 37. This indicates that our sample size was sufficient to produce reliable results.

12 However, the coefficient is sensitive to the number of items in the scale and a larger number of items can result in a larger coefficient.

### VALIDITY EVIDENCE BASED ON RELATIONS TO OTHER VARIABLES

We assessed validity evidence based on relations to other variables by analyzing how each of the four selected measures correlates with other measures that have shown previous significant association in the literature, which also is referred to in the literature as concurrent validity. To conduct this analysis, we collected data using the following scales.

**Patient Health Questionnaire Depression Scale (PHQ-8;** Kroenke et al. 2010). This scale, which measures depressive symptoms (e.g., “feeling down, depressed, or hopeless”), consists of eight items rated on a four-point Likert-type scale (1, “not at all,” to 4, “nearly every day”). The alpha coefficient for the PHQ-8 in the current sample was 0.82.

**Generalized Anxiety Disorder Scale (GAD-7;** Spitzer et al. 2006). This scale measures generalized anxiety symptoms (e.g., “feeling nervous, anxious, or on edge”) on a four-point Likert-type scale (1, “not at all,” to 4, “nearly every day”). The alpha coefficient for the GAD-7 in our sample was 0.88.

**Positive and Negative Affect Rating Short Form (PANAS;** Thompson 2007). This brief ten-item measure asks participants to rate how they “felt during the past few weeks” on ten emotions using a five-point Likert-type scale (1, “very little or not at all,” to 5, “extremely”). The alpha coefficients for positive and negative affect subscales were 0.80 and 0.88, respectively.

We also assessed the intercorrelation among the measures in the tool, and correlations between the four measures and key sociodemographic variables: gender, age, marital status, socioeconomic status (SES), and educational level taught.<sup>13</sup> Assessing these correlations helped us understand whether the scales are indeed measuring what they are supposed to be measuring, while also expanding our knowledge on how background demographics might be associated with teacher wellbeing measures.<sup>14</sup>

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<sup>13</sup> Pearson’s correlation was implemented using `pwcorr` in Stata. `Pwcorr` has the option of showing statistical significance of the correlation and handles missing values by pairwise deletion (all available observations are used to calculate each pairwise correlation).

<sup>14</sup> In the case of missing responses, the following rule was used: If surveys were missing less than 50 percent of responses, the average score for the item was used. This rule was applied to the main constructs and to the additional scales.

### EXPLORATORY FACTOR ANALYSIS ON ALL SCALES

To further investigate whether each scale is indeed measuring different constructs, we conducted an EFA that pooled all scales of the tool. We included all 37 items of the tool using a polychoric correlation matrix and oblique (promax) rotation. We used Kaiser's criterion of eigenvalues, a Cattell scree test, and parallel analysis to determine the number of factors to be retained. We discuss our decision to maintain or exclude items that demonstrated poor performance throughout the validation process.

### CONFIRMATORY FACTOR ANALYSIS

Finally, we conducted a CFA to test whether the data fit the hypothesized measurement model. Different estimators can be used for model fitting with categorical data, but here we used the diagonally weighted least squares estimator (WLSMV in Mplus), which was appropriate in this case (Muthén, Muthén, and Asparouhov 2015).

Because the Chi-square statistic is sensitive to sample size and may reject well-fitting models, our model fit assessment put more emphasis on the other statistics. We reported the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the Tucker-Lewis Index (TLI), and the standardized root mean square residual (SRMR).<sup>15</sup> We assessed these fit statistics to determine whether the models are providing a good fit to the data. Following recommendations from Hu and Bentler (1999), we adopted the following cutoff values as a guide for establishing whether the models fit the data well, as follows: SRMR ideally below 0.08 and at most 0.10; RMSEA ideally below 0.06 and at most 0.10; and CFI and TLI ideally above 0.95, with a minimum of 0.90.

## RESULTS

### DESCRIPTIVE STATISTICS, EFA, INTERNAL CONSISTENCY, AND VALIDITY FOR EACH SCALE

Table 1 and Table 2 show (1) descriptive statistics for each item and scale (on a five-point Likert scale); (2) Cronbach's alpha coefficient for each scale; (3) the eigenvalue

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<sup>15</sup> The SRMR and RMSEA are measures of absolute fit, with values closer to zero indicating a better fit. The CFI and TLI are, in turn, a measure of relative fit, with values closer to one indicating a better fit.

and percentage of variance explained by the factor retained in the EFA;<sup>16</sup> (4) total item correlation for each item ( $r$ );<sup>17</sup> (5) EFA loading for each item; and (6) the Cronbach's alpha coefficient the scale possessed when each item was deleted from it.<sup>18</sup> Table 3 provides Pearson correlations and significant levels.<sup>19</sup> Taken together, these statistics give us a measure of how strong and consistent these constructs are, where higher values for alphas ( $>0.70$ ), total item correlation ( $>0.20$ ), and factor loadings magnitude (less than  $-0.30$  or greater than  $0.30$ ) indicate that the constructs are solid and working well. Below we describe the results for each measurement in more detail.

*Table 1: Descriptive Statistics, Total Item Correlation, Internal Reliability, and EFA Loadings<sup>20</sup>*

Item	Obs.	Mean	Std.	r	Alpha	EFA
<b>Emotion regulation reappraisal</b>	1624	3.99	0.62			
When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.	1589	3.89	1.01	0.36	0.71	0.60
When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.	1548	3.95	1.03	0.42	0.69	0.69
When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.	1568	4.14	0.93	0.43	0.69	0.68
When I want to feel more positive emotion, I change the way I'm thinking about the situation.	1587	4.03	0.94	0.53	0.66	0.77
I control my emotions by changing the way I think about the situation I'm in.	1541	3.96	0.89	0.49	0.67	0.76

16 The eigenvalue represents the total amount of variance explained by the factor and is calculated as the sum of squared factor loadings across all items for each factor. The eigenvalues are higher when there are at least some variables with high factor loadings, and lower when there are mostly low loadings. In practice, only factors with eigenvalues of 1 or higher are analyzed, although other approaches are also used to select the ideal number of factors.

17 Total item correlation, or item rest correlation, is the correlation between an item and the scale that is formed by all other items.

18 Before conducting an EFA, we assessed its suitability. An inspection of the polychoric correlation between the items showed that correlations were high and did not go below 0.28 in any case (Table A1). The Kaiser-Meyer-Olkin measure was greater than 0.73 for each measurement, which according to Kaiser are acceptable classifications (Kaiser and Rice 1974). Bartlett's test of sphericity was statistically significant ( $p < .000$ ) for each scale, which indicates that the data were suitable for EFA.

19 Pearson correlation was implemented using `pwcorr` in Stata. `Pwcorr` has the option of showing statistical significance of the correlation and handles missing values by pairwise deletion (all available observations are used to calculate each pairwise correlation).

20 Items on the emotional exhaustion scale are from the Maslach Burnout Inventory, copyright (c) 1996 Wilmar B. Schaufeli, Michael P. Leiter, Christina Maslach, and Susan E. Jackson. All rights reserved. The inventory may not be used without permission of the publisher, Mind Garden, Inc. [www.mindgarden.com](http://www.mindgarden.com).

Item	Obs.	Mean	Std.	r	Alpha	EFA
When I want to feel less negative emotion, I change the way I'm thinking about the situation.	1592	4.01	0.88	0.48	0.67	0.75
Alpha					0.72	
Eigenvalue (Factor 1)						3.44
% Variance (Factor 1)						0.34
<b>Emotion regulation suppression</b>	1508	3.04	0.94			
I keep my emotions to myself.	1390	3.19	1.24	0.54	0.68	0.79
When I am feeling positive emotions, I am careful not to express them.	1412	2.72	1.24	0.56	0.66	0.82
I control my emotions by not expressing them.	1464	2.84	1.24	0.60	0.64	0.84
When I am feeling negative emotions, I make sure not to express them.	1587	3.38	1.22	0.41	0.75	0.65
Alpha					0.74	
Eigenvalue (Factor 2)						2.09
% Variance (Factor 2)						0.21
Cumulative Variance (Factor 1 + Factor 2)						0.55
<b>Emotional exhaustion</b>	1630	1.55	0.5			
Drained	1618	1.86	0.77	0.63	0.84	0.79
Used up	1606	2.14	0.94	0.63	0.84	0.77
Fatigued	1598	1.51	0.74	0.65	0.84	0.80
End of my rope	1563	1.64	0.81	0.64	0.84	0.80
Burned out	1614	1.35	0.68	0.72	0.83	0.89
Frustrated	1590	1.18	0.49	0.53	0.85	0.74
Working too hard	1581	1.63	0.81	0.47	0.86	0.68
Stress	1598	1.42	0.66	0.53	0.85	0.73
Strain	1594	1.23	0.53	0.58	0.85	0.78
Alpha					0.86	
Eigenvalue						5.44
% Variance						0.60

Note: Negative items were reverse scored; "r" shows total-item correlation and "alpha" shows internal reliability for the scale if the item is excluded.

Table 2: Descriptive Statistics, Total Item Correlation, Internal Reliability, and EFA Loadings (cont.)

Item	Obs.	Mean	Std.	r	Alpha	EFA
<b>Perceived stress I</b> (In the past two weeks, how often have you...)	1628	1.69	0.51			
been upset because of something that happened unexpectedly?	1611	1.67	0.65	0.44	0.71	0.69
felt “stressed”?	1597	1.93	0.82	0.56	0.67	0.80
felt nervous?	1589	1.57	0.74	0.51	0.69	0.74
found that you could not cope with all the things that you had to do?	1588	1.81	0.95	0.34	0.75	0.64
been angered because of things that were outside of your control?	1613	1.62	0.74	0.47	0.70	0.75
felt difficulties were piling up so high that you could not overcome them?	1612	1.52	0.72	0.54	0.68	0.77
Alpha					0.74	
Eigenvalue (Factor 1)						3.75
% Variance (Factor 1)						0.37
<b>Perceived stress II</b> (In the past two weeks, how often have you...)	1625	2.76	1.09			
felt confident about your ability to handle your personal problems?	1576	2.62	1.44	0.63	0.79	0.83
felt that things were going your way?	1598	3.12	1.25	0.56	0.82	0.80
been able to control irritations in your life?	1591	2.75	1.38	0.69	0.76	0.86
felt that you were on top of things?	1578	2.55	1.31	0.71	0.75	0.85
Alpha					0.82	
Eigenvalue (Factor 2)						2.38
% Variance (Factor 2)						0.24
Cumulative Variance (Factor 1 + Factor 2)						0.61
<b>Classroom management</b>	1608	4	0.59			
How much can you do to control disruptive behavior in the classroom?	1603	4.05	0.79	0.60	0.87	0.76
How much can you do to get children to follow classroom rules?	1598	4.05	0.71	0.67	0.86	0.82
How much can you do to calm a student who is disruptive or noisy?	1589	4.02	0.78	0.69	0.86	0.84

Item	Obs.	Mean	Std.	r	Alpha	EFA
To what extent can you establish a classroom-management system with each group of students?	1581	3.95	0.80	0.65	0.86	0.80
To what extent can you keep a few problem students from ruining an entire lesson?	1590	4.02	0.84	0.69	0.86	0.82
To what extent can you respond to defiant students?	1587	3.83	0.87	0.60	0.87	0.75
To what extent can you make your expectations clear about student behavior?	1585	4.09	0.77	0.66	0.86	0.80
To what extent can you establish routines to keep activities running smoothly?	1597	4.02	0.79	0.61	0.87	0.76
Alpha					0.88	
Eigenvalue						5.04
% Variance						0.63

*Note:* (i) Negative items were reversed scored; “r” shows total-item correlation and “alpha” shows internal reliability for the scale if the item is excluded. (ii) All scales are measures on a five-point Likert scale and recall periods are standardized to two weeks. PSS and MBI-EE items were rated from 1 (“never or almost never”) to 5 (“every day”). ERQ items were rated from 1 (“strongly disagree”) to 5 (“strongly agree”). OSTES-CM rating scale was adjusted based on the cognitive interviews and items rated from 1 (“not at all”) to 5 (“completely”).

*Table 3: Pearson Correlations between Tool Measures, External Measures, and Demographics<sup>21</sup>*

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) Emo. Reg. Reap.	1					
(2) Emo. Reg. Sup.	0.26*	1				
(3) Emo. Exhaustion	-0.07*	0.06*	1			
(4) Stress I	-0.07*	0.11*	0.59*	1		
(5) Stress II	-0.12*	0.18*	0.13*	0.17*	1	
(6) Class Management	0.18*	0	-0.16*	-0.17*	-0.26*	1
(7) Positive Affect	0.21*	-0.07*	-0.16*	-0.15*	-0.32*	0.27*
(8) Negative Affect	-0.07*	0.07*	0.39*	0.52*	0.17*	-0.14*
(9) Depression	-0.09*	0.15*	0.55*	0.62*	0.25*	-0.17*
(10) Anxiety	-0.06*	0.14*	0.55*	0.71*	0.21*	-0.15*
(11) Female	0.02	0.03	0	0.11*	0.13*	-0.09*
(12) Age	0.03	0.05	0.01	0.04	0.04	-0.01
(13) Married	-0.03	-0.03	0.02	-0.01	0.02	-0.02
(14) SES	0.02	-0.02	0.02	0.03	-0.02	0.09*
(15) Preschool	0.02	0.05	0.02	0.04	0.08*	-0.07*
(16) Elem. School	0	0.08*	0	0	0.03	-0.01
(17) Middle School	-0.03	-0.04	0.05	0.03	-0.09*	0.06*
(18) High School	-0.02	-0.07*	-0.01	-0.03	-0.07*	0.02

Note: \* shows significance at the .05 level

### EMOTION REGULATION QUESTIONNAIRE

Descriptive statistics for the items and the scales show that teachers scored relatively high on the emotion regulation reappraisal subscale: the mean for each item ranged from 3.89 to 4.14, and the scale mean was 3.99 out of 5.<sup>22</sup> The average was lower for the emotion regulation suppression: item means ranged from 2.72 to 3.38, and the scale mean was 3.04.<sup>23</sup> This is consistent with other

<sup>21</sup> Each cell shows Pearson correlation between the two variables in the row and in the column. Pearson correlation was implemented using `pwcorr` in Stata. `Pwcorr` has the option of showing statistical significance of the correlation and handles missing values by pairwise deletion (all available observations are used to calculate each pairwise correlation).

<sup>22</sup> Minimum value is 1 and maximum value is 5.

<sup>23</sup> Negative items of all constructs were reverse coded.

studies that found teachers more prone to using cognitive reappraisal than expressive suppression strategies (Tsouloupas et al. 2010), meaning that they tend to reinterpret challenging situations in nonemotional terms rather than inhibit signs of their inner feelings when regulating their emotions.

EFA yielded a two-factor solution, which accounted for 55 percent of the variance that matched the exact original structure of the ERQ proposed by Gross and John (2003) and was subsequently replicated by EFA and CFA in the student samples (Chen 2010; D'Argembeau and Van der Linden 2006; Balzarotti, John, and Gross 2010). EFA yielded one factor for the emotion regulation reappraisal subscale, with eigenvalue of 3.02 accounting for 34 percent of variance; the item loadings ranged from 0.69 to 0.71. The second factor that emerged from the exploratory factor analysis for the suppression subscale showed eigenvalue of 2.42, which accounts for 21 percent of variance. The item loadings ranged from 0.64 to 0.75.

The Cronbach's alpha for the emotion regulation reappraisal subscale was 0.72, and there was no item that, if excluded, would increase this reliability. Item total correlation was high, ranging from 0.36 to 0.53. The emotion regulation suppression subscale showed a total reliability of 0.74, which increased by 0.01 if the fourth item of the scale was excluded. Item total correlation ranged from 0.41 to 0.60.

Table 3 presents clear evidence that emotional suppression is significantly associated with increased depression, anxiety, perceived stress, and negative affect. It also supports an association between reappraisal and more positive emotion. Overall, these findings are consistent with previous studies (Spaapen et al. 2014; Wiltink et al. 2011; Gross and John 2003) that analyzed correlations between the ERQ and other scales. No significant age correlations were observed for suppression or reappraisal, which is in keeping with findings from Spaapen et al. (2014) and Wiltink et al. (2011) but contrary to previous studies showing a positive association between older people and cognitive reappraisal (Charles and Carstensen 2007). Contrary to expectations, we also did not find any association between suppression and gender. While no gender differences have been observed in the use of reappraisal, several studies have shown that males tend to suppress emotions more than females (Spaapen et al. 2014; Wiltink et al. 2011; Balzarotti et al. 2010; Gross and John 2003). Suppression is also positively associated with teaching elementary school and negatively associated with teaching high school, meaning that teachers at the elementary level tend to suppress their emotions more. Finally, we did not find evidence for associations between reappraisal or suppression and marital or SES status, which have not been previously explored in the literature.

**Emotional Exhaustion (EE) Subscale.** Descriptive statistics show that teachers' scores on each item ranged from 1.18 to 2.14, and the overall scale mean was 1.55 out of 5. The results of EFA indicated a dominant one-factor solution with eigenvalue of 5.44, accounting for 60 percent of variance, and the item loadings ranged from 0.68 to 0.89. While the reliability and validity of the MBI educators survey have been established in previous articles (Aluja, Blanch, and García 2005; Boles et al. 2000), we are not aware of any studies that separately validate the emotional exhaustion subscale for educators. Given the original three-factor structure of the MBI, we would expect all nine items of the MBI-EE, which form one factor in the original MBI, to load well into only one factor.

The MBI-EE subscale showed an overall Cronbach's alpha of 0.86, and this reliability would not increase by excluding any of the items. Item total correlation ranged from 0.49 to 0.94.

Results shown in Table 3 indicate that emotional exhaustion is associated with increased stress, negative affect, depression, and anxiety, and with decreased CMSE. This is consistent with the previous literature that found significant correlations between emotional exhaustion and depression and anxiety (Calvete and Villa Sánchez 1999; Schonfeld and Bianchi 2016), and emotional exhaustion and CMSE (Dicke et al. 2014; Aloe et al. 2014) among teacher samples. In contrast to previous literature that reported higher levels of emotional exhaustion in females than in males (Grayson and Alvarez 2008; Lau, Yuen, and Chan 2005), we did not find any association between gender and emotional exhaustion in the Salvadoran teachers sample. We found no associations between marital status, SES, age, or education level taught. The lack of association with education level taught is somewhat unexpected, given the degree of control and influence gangs have in the functioning of secondary schools in El Salvador (ECCN 2016).

**Perceived Stress Scale.** Teachers scored higher on the positive scale than the negative scale, which is similar to the pattern we found for emotion regulation: item averages for the positive scale ranged from 2.55 to 3.12, and the scale mean was 2.75, whereas item averages for the negative scale ranged from 1.52 to 1.93, and the scale mean was 1.69 out of 5.

EFA yielded two factors with eigenvalues of 3.75 and 2.38, accounting for 61 percent of variance. The percentage of variance explained by the two factors was higher than what was found by previous studies, most of which have shown that the two-factor structure accounts for less than 50 percent of the total variance (Lee 2012). Factor 1, which accounted for 37 percent of variance, consisted of six

items representing “negative feelings”; factor 2, which accounted for 24 percent of variance, consisted of four items representing “positive feelings.” This factorial structure is in line with findings from Lee (2012) that show that a two-factor structure of the PSS-10 predominate in different validation studies of its English version. This is also consistent with validations of the PSS-14 in Spanish-speaking samples (González 2006; Ramírez and Hernández 2007), which confirmed the two-factor structure. The item loadings ranged from 0.64 to 0.86.

Cronbach’s alpha reliability coefficients were 0.74 for the “negative feelings” factor and 0.82 for the “positive feelings” factor. Reliability of the “negative feelings” scale would increase by 0.01 if item four was excluded. Item total correlation ranged from 0.34 to 0.71.

Table 3 indicates that both perceived stress I (“negative feelings”) and II (“positive feelings”) are strongly correlated with increased depression, anxiety, emotional exhaustion, and negative affect. However, the magnitude of these correlations is stronger for stress I. These results are consistent with an extensive review of articles conducted by Lee (2012) that related to the psychometric properties of the PSS. Lee (2012) found that the PSS was either moderately or strongly correlated with the hypothesized emotional variables, such as depression or anxiety and emotional exhaustion. This is also in line with Cohen et al.’s (1983) expectation that “there is some overlap between what is measured by depressive symptomatology scales and measured by the PSS, since the perception of stress may be a symptom of depression” (391). In our sample, females were associated with increased perceived stress. This may be related to cultural expectations outside the school environment that deem it appropriate for childcare and household tasks to be performed by females. Perceived stress II (“positive feelings”) showed a positive association with teaching preschool and negative associations with teaching middle and high school. This was unexpected in the Salvadoran context; given the heavier presence and influence of gangs in the secondary schools, we would expect middle and high school teachers to show higher levels of stress. Surprisingly, we found no associations with other demographic variables, such as marital status, SES, and age. This is inconsistent with previous studies, which have found that PSS scores were lower for young, married, and higher-paid respondents (Lee 2012).

**Classroom Management Subscale.** Descriptive statistics shows that teachers scored high on classroom management: the scale mean was 4 out of 5, and the item mean ranged from 3.83 to 4.09. EFA yielded one factor solution with eigenvalue of 5.04, which accounted for 63 percent of variance, and the item loadings ranged from 0.75 to 0.84. The reliability of the classroom management subscale was 0.88; excluding items would not increase the overall reliability. Item total correlation ranged from 0.60 to 0.69.

We found that CMSE is significantly associated with decreased anxiety, depression, negative affect, perceived stress, and emotional exhaustion. This is consistent with the previous literature that demonstrates that positive teaching self-efficacy may result in improved psychological wellbeing and lower levels of stress and burnout (Zee and Koomen 2016; Aloe et al. 2014; Tsouloupas et al. 2010). Classroom-management self-efficacy is negatively associated with teaching preschool and positively associated with teaching middle school. This is not surprising, as previous studies have shown lower CMSE among preschool teachers, which is possibly related to disciplinary difficulties and to teaching appropriate classroom behavior to pupils who are attending school for the first time (Cocca et al. 2018). Table 3 shows that classroom management is negatively associated with being female, but no association was found with the demographic variables of marital status, SES, and age.

**EFA-All Scales.** Table 4 displays the loadings for the seven factors retained by the EFA, including all 37 items of the proposed WHAT tool. Table B2 shows eigenvalues and statistics for the EFA, Figure B1 shows the scree plot, and Table B3 shows parallel analysis (see Appendix B). While the Kaiser's criterion of eigenvalues suggests the retention of seven factors, the scree plot suggests that six or seven factors could be retained, and the parallel analysis suggests that five could be retained.<sup>24</sup> Table 4 shows that only one item (fourth item of the perceived stress I scale) had a high loading on the seventh factor, and the item also shows a high loading for factor 3.<sup>25</sup> Given the separation in a seventh factor and the cross-loading, we decided to exclude this item from the tool. Excluding this item increases the perceived stress I scale reliability from 0.74 to 0.75.

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<sup>24</sup> There are many guidelines for how to decide the number of factors to extract from the analysis. The Kaiser's criteria, the scree plot, and the parallel analysis are three of the most common methods used in this decision of factor extraction. In practice, results for factor extraction using these different methods identify the optimal number of factors to be extracted from the data. In other words, it identifies how many different constructs are being measured by the data.

<sup>25</sup> The item with a high loading on factor 7 corresponds to item 4 of the perceived stress I scale. As we saw in the previous section, this item, if excluded, would increase the reliability of the perceived stress I scale.

Table 4: EFA All Scales–Loadings

	F1	F2	F3	F4	F5	F6	F7	Uniqueness
<b>Emotion regulation reappraisal</b>								
(1) When I want to feel more positive emotion (such as joy or amusement)...	-0.03	-0.02	0.12	-0.06	0.44	0.24	-0.32	0.52
(2) When I want to feel less negative emotion (such as sadness or anger)...	0.12	0.02	0.02	0.00	0.65	0.00	-0.20	0.50
(3) When I'm faced with a stressful situation, I make myself think about it...	-0.01	0.03	-0.08	-0.07	0.67	-0.03	0.00	0.50
(4) When I want to feel more positive emotion, I change the way...	0.01	-0.01	-0.04	0.05	0.81	-0.03	0.03	0.39
(5) I control my emotions by changing the way I think about the situation I'm in.	0.01	0.04	-0.04	0.07	0.82	0.00	0.17	0.37
(6) When I want to feel less negative emotion, I change the way I'm thinking...	-0.02	-0.05	0.01	0.00	0.80	-0.09	0.13	0.42
<b>Emotion regulation suppression</b>								
(1) I keep my emotions to myself.	0.01	0.04	0.13	-0.02	-0.02	0.77	-0.21	0.36
(2) When I am feeling positive emotions, I am careful not to express them.	0.04	-0.01	-0.09	0.06	-0.12	0.84	-0.07	0.31
(3) I control my emotions by not expressing them.	-0.02	0.00	-0.02	-0.04	-0.01	0.83	0.11	0.30
(4) When I am feeling negative emotions, I make sure not to express them.	-0.10	-0.04	-0.01	-0.02	0.21	0.59	0.07	0.56

DEVELOPING THE WELLBEING HOLISTIC ASSESSMENT FOR TEACHERS

	F1	F2	F3	F4	F5	F6	F7	Uniqueness
<b>Emotional exhaustion</b>								
(1) Drained	0.75	0.01	0.15	0.01	0.03	-0.08	-0.17	0.33
(2) Used up	0.80	0.05	0.12	-0.08	-0.04	-0.08	-0.25	0.28
(3) Fatigued	0.76	-0.02	0.10	0.06	-0.02	-0.02	-0.16	0.33
(4) End of my rope	0.88	-0.06	-0.14	0.02	0.06	-0.02	-0.04	0.33
(5) Burned out	0.85	-0.05	0.00	0.02	0.08	0.00	0.15	0.20
(6) Frustrated	0.57	-0.07	0.13	0.12	-0.03	0.11	0.09	0.43
(7) Working too hard	0.72	0.05	-0.05	-0.15	0.00	0.03	0.16	0.48
(8) Stress	0.73	0.02	-0.03	-0.03	-0.02	0.04	0.13	0.43
(9) Strain	0.69	0.05	0.01	0.04	-0.04	0.12	0.35	0.26
<b>Perceived stress I</b> (In the past two weeks, how often have you...)								
(1) been upset because of something that happened unexpectedly?	0.04	-0.08	0.71	0.00	-0.01	-0.01	0.17	0.42
(2) felt "stressed"?	0.44	0.01	0.53	-0.02	0.03	-0.03	0.00	0.32
(3) felt nervous?	0.13	-0.01	0.64	0.09	-0.08	0.04	0.10	0.43
(4) found that you could not cope with all the things that you had to do?	0.01	0.03	0.47	-0.09	0.14	-0.06	0.78	0.30
(5) been angered because of things that were outside of your control?	0.07	-0.03	0.73	-0.04	-0.03	-0.05	0.17	0.39
(6) felt difficulties were piling up so high that you could not overcome them?	0.16	0.08	0.64	0.09	-0.03	0.06	0.34	0.34

	F1	F2	F3	F4	F5	F6	F7	Uniqueness
<b>Perceived stress II</b>								
(In the past two weeks, how often have you...)								
(1) felt confident about your ability to handle your personal problems?	0.05	0.03	-0.07	0.84	0.02	0.03	0.01	0.30
(2) felt that things were going your way?	0.00	0.07	-0.12	0.85	0.06	-0.05	-0.08	0.36
(3) been able to control irritations in your life?	0.01	-0.03	0.08	0.83	0.01	0.03	-0.05	0.27
(4) felt that you were on top of things?	-0.06	-0.06	0.19	0.82	-0.02	-0.03	-0.02	0.23
<b>Classroom management</b>								
(1) How much can you do to control disruptive behavior in the classroom?	-0.09	0.74	0.10	-0.02	0.02	-0.06	-0.05	0.39
(2) How much can you do to get children to follow classroom rules?	0.00	0.83	-0.05	0.03	-0.01	0.01	0.01	0.32
(3) How much can you do to calm a student who is disruptive or noisy?	0.09	0.87	-0.11	0.02	-0.03	0.00	0.05	0.27
(4) To what extent can you establish a classroom-management system?	-0.07	0.81	-0.03	0.05	0.02	-0.01	0.09	0.33
(5) To what extent can you keep a few problem students from ruining an entire lesson?	0.06	0.86	-0.02	0.01	-0.02	0.03	0.06	0.29
(6) To what extent can you respond to defiant students?	0.03	0.74	0.01	-0.05	-0.02	0.00	-0.08	0.43
(7) To what extent can you make your expectations clear about student behavior?	-0.03	0.74	0.08	-0.05	0.05	-0.02	-0.11	0.37
(8) To what extent can you establish routines to keep activities running smoothly?	-0.07	0.73	0.02	-0.02	0.00	0.06	0.04	0.44

Note: All scales are measures on a five-point Likert scale and recall periods are standardized to two weeks. PSS and MBI-EE items were rated from 1 (“never or almost never”) to 5 (“every day”). ERQ items were rated from 1 (“strongly disagree”) to 5 (“strongly agree”). OSTES-CM rating scale was adjusted based on the cognitive interviews and items rated from 1 (“not at all”) to 5 (“completely”).

Excluding the seventh factor, the other six factors exactly match the structure of the tool we described in the previous section: factor 1 aggregated items of the emotional exhaustion scale, factor 2 aggregated items from the classroom-management scale, factors 3 and 4 aggregated items from the perceived stress I and II scales, respectively, and factors 5 and 6 aggregated items of the emotion regulation reappraisal and suppression scales, respectively. The parallel analysis suggests that five factors could be retained, where items of the emotional exhaustion scale and stress I (negative) scale would be part of the same factor, while the other factors remain the same. This is an interesting finding, given that these two scales showed the highest correlation (0.59) in Table 3. Following our hypothesized model, we decided to retain six factors, maintaining exhaustion and stress I as separate scales. We fit a CFA to test whether the data fit the hypothesized measurement model, which we describe in the next section.

### CONFIRMATORY FACTOR ANALYSIS

Table 5 shows CFA fit statistics for the five CFA models we estimated: (1) emotion regulation, containing two factors (reappraisal and suppression); (2) emotional exhaustion; (3) perceived stress, containing two factors (positive and negative); (4) classroom management; and (5) a model containing all the constructs. Except for the RMSE of 0.115 in the classroom-management model, all the fit statistics were below the acceptable thresholds, which indicates a good model fit for all the proposed models.

*Table 5: CFA Fit Indices*

	(1)	(2)	(3)	(4)	(5)
	Emo. Reg.	Emo. Exhaust.	Stress	Class Mgmt.	All
RMSE	0.097	0.097	0.072	0.115	0.4
CFI	0.924	0.96	0.978	0.968	0.96
TLI	0.9	0.946	0.971	0.955	0.957
SRMR	0.054	0.043	0.039	0.028	0.045

Note: Following Hu and Bentler (1999), we use SRMR ideally below 0.08 and at most 0.10; RMSEA ideally below 0.06 and at most 0.10; and CFI and TLI ideally above 0.95, with a minimum of 0.90.

## DISCUSSION

The results of testing the WHAT tool with Salvadoran in-service teachers support the validity and internal consistency reliability of the tool's individual measures—ERQ, MBI-EE, PSS, and OSTES-CM. The cognitive interviews we conducted provided validity evidence based on the contents of the items, in that they matched what participants expressed in the interviews. The EFA verified the unidimensionality of the emotional exhaustion and CMSE subscales and confirmed the two-factor structure of the ERQ and PSS, as found in the existing literature. Each item loaded well on the proposed factor within the different scales and subscales, which provided validity evidence for the internal structure. The results also provide evidence of reliability of the Salvadoran version of the different measurement tools. Internal consistency coefficients were good for all four measures. The intercorrelation among the measures in the tool, and those with other external measures, are in the expected direction, which provides validity evidence based on relations to other variables. Surprisingly, correlations among the four measures and key sociodemographic variables, such as age, marital status, and SES, are often not significant. The EFA that included all the tool items confirmed that each scale is indeed measuring a different construct; the CFA confirmed a good model fit.

Findings from this study support the inclusion of all four of the adapted and translated measures—ERQ, MBI-EE, PSS, and OSTES-CM—into the WHAT tool. We recommend keeping all of the translated and adapted items included under each measure, except for the fourth item of the perceived stress I subscale. Overall, this study confirms that the adapted and translated measures that comprise the WHAT tool are valid and reliable and can be used with Spanish-speaking Salvadoran in-service teachers.

The WHAT tool can be used to identify who experiences stress and emotional exhaustion—that is, which teachers exhibit these feelings and what their background characteristics are. However, it does not identify which contextual and organizational factors may be influencing teachers' level of stress and emotional exhaustion at the national, community, school, and classroom level. As such, differences across schools in terms of the average level of teacher stress and burnout should not automatically be attributed to stressful and challenging contextual characteristics. As Chang (2009) points out, teacher burnout is often a result of an interaction between individual and organizational-contextual factors. Individual characteristics may influence how different teachers respond to the same environmental stressor. Emotion regulation is considered a protective

factor and may help explain differences in teachers' levels of stress and emotional exhaustion; that is, whether high levels of stress are associated with low cognitive reappraisal and a high degree of suppression. On the other hand, CMSE may both explain and be a result of high levels of stress and emotional exhaustion.

In the specific case of this study in El Salvador, descriptive statistics demonstrate that teacher wellbeing is generally positive. The teachers did not experience a high level of emotional exhaustion at work or overall perceived stress. However, the low level of stress observed may be related to the fact that the PSS assesses global perceived stress but does not address how perceptions of stress may be linked to specific contexts (Stress Measurement Network 2018). Many teachers in El Salvador face chronic social adversity, such as living in low socioeconomic neighborhoods where there is a presence of gangs and related violence. The lower stress scores may suggest that habituation normalizes the environment and thus tends to reduce stress. This means that teachers may respond resiliently or adaptively when facing chronic social adversity, thereby minimizing its impact on stress levels. The low average stress levels also may be explained by the geographic concentration of gang-related violence in specific Salvadoran municipalities. Unfortunately, we do not have data to compare teacher wellbeing in the municipalities with low and high levels of violence.

The statistics also show that teachers tend to have a high degree of confidence in their ability to manage disruptive behavior in the classroom. Although the statistics show that teachers employ cognitive reappraisal strategies, they also commonly suppress their emotions. This is concerning, given that suppression has been associated with negative wellbeing outcomes such as depression and pessimism (Barsade and Gibson 2007; Côté and Morgan 2002). Since the ERQ includes general questions about engaging in emotion regulation, it is not possible to know if teachers specifically apply cognitive reappraisal or suppression when handling events in the classroom (e.g., student misbehavior).

The WHAT instrument shows promise in helping education authorities and researchers to measure teachers' wellbeing in the Salvadoran context, and in other conflict- and crisis-affected contexts. District- or national-level education authorities can identify the geographic regions, school clusters, and individual schools where teachers exhibit high levels of perceived stress and/or emotional exhaustion and may need immediate support. Information gathered on emotion regulation and CMSE can provide further understating of the role these variables play as protective factors, and may lead to policy interventions that focus on these

skills in teacher education or during in-service training. For instance, evidence suggests that emotion regulation can be taught through short-term interventions; for example, mindfulness training has been found to improve teachers' self-regulation (Frank et al. 2013) and adaptive emotion regulation (Jennings et al. 2017).

### LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Here we highlight several limitations and suggestions for future research. First, a conceptual framework and the Salvadoran RERA (ECCN 2016) informed the selection of constructs for the WHAT tool. Asking Salvadoran educators what they consider important to their wellbeing would have improved the selection of constructs for a contextually appropriate tool. Future adaptations of the existing tool and other measurement research on teacher wellbeing should incorporate local definitions and an understanding of what constitutes teacher wellbeing that is based on teachers' input. Second, our sample includes only teachers who voluntarily participated in the workshop series. While we did not find that attending more sessions was related to any of the teacher wellbeing measures, it is still possible that our sample differs from the population of teachers in targeted departments in ways that are not identifiable. If that is the case, our results are not representative of the population of interest—that is, all teachers in the eight targeted Salvadoran departments. Third, the tool was not validated for program evaluation purposes. Further research is needed to assess whether the measures included are sensitive to program interventions of short duration and are able to detect change over time. Fourth, all the measures included in the tool are self-reported, which assumes that participants reported truly and accurately. Future studies may use performance-based observation measures or biomarkers (e.g., cortisol) to provide further validity evidence for the tool, based on relations to other variables. Fifth, further research is needed to determine the degree of measurement invariance of the measures in the tool to ascertain if they could be used for comparisons across different cultures and geographic locations. Sixth, more systematic research is needed to examine the interrelationship and pathways between the constructs in the tool (e.g., does emotion regulation influence the experience of perceived stress and emotional exhaustion when considering classroom-management challenges?). Seventh, the global nature of the PSS and ERQ may not capture context-specific perceived stress and emotion regulation strategies used in the classroom. Further exploration of context-specific measures is warranted. Finally, we highly recommend conducting further reliability testing of the measures in the tool, such as test-retest.

Further research is needed on alternative uses of the WHAT tool and how it can be adapted for different purposes. The alternative uses we envision for the instrument include individual self-assessments by teachers to support their reflections on their wellbeing and inform their self-improvement, and administration of the tool by school principals and academic leaders to further understand their teachers' sense of wellbeing and to develop supportive actions and professional development opportunities accordingly.

## CONCLUSION

This study selected measures for the WHAT tool and examined the validity and reliability of the four measures selected: ERQ, PSS, MBI-EE, and OSTES-CM. The original tools were translated, reviewed, and cognitively tested with a small sample of Salvadoran teachers before being finalized and applied to a larger sample of 1,659 teachers at the preschool, elementary, and secondary levels. To establish the validity and internal consistency of the different tools comprising the instrument, we employed EFA, CFA, and reliability analysis, and assessed their relationship to other external variables.

Results from the psychometric analysis conducted during this study provide validity evidence for content, internal structure, and concurrent relation to other variables for the adapted and contextualized Spanish version of the measures that comprise the WHAT tool (see Appendix C). The four measures also showed good internal reliability levels, and the CFA results confirmed a good model fit. We conclude that the WHAT tool can be used to measure wellbeing among in-service teachers in El Salvador when conceptualized around the constructs of emotion regulation, perceived stress, emotional exhaustion, and CMSE.

For use in other low-income and crisis- and conflict-affected settings, we recommend a rigorous contextual adaptation process with the WHAT tool, including contextual translation, back translation, cognitive interviewing, and pilot testing. Consideration also should be given to the normative nature of teacher wellbeing during the adaptation process, as understanding and definitions of wellbeing may change in keeping with the norms of specific cultural and societal contexts. Given its self-reported nature, the WHAT tool is not resource intensive and does not require intense assessor training. It can be applied in a group setting—that is, to several teachers at a time. This facilitates its application in crisis and conflict settings, which usually are constrained in terms of resources and time.

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## APPENDIX A

### REVIEW OF EXISTING MEASURES

To select the measures that are part of the WHAT tool, we developed an inventory of available measures that assess each of the constructs identified: perceived stress, emotional exhaustion, emotion regulation, and CMSE. To develop this inventory, we first identified a set of measures that have been widely used in our professional context to evaluate teacher wellbeing interventions, and tools whose development and validation have been described in articles published in well-known journals. We then conducted an unsystematic literature review (rather than a systematic comprehensive database search) to identify additional measures for each construct of interest. Table A1 provides an inventory of the main instruments being developed and used in the field, which we identified through our previous knowledge of existing tools and a complementary literature review; it does not provide an exhaustive list of the measurement tools available.

Table A1: Measurement Review

Scale	N of Items	Reliability	Structure	Source
<b>Emotion Regulation</b>				
Generalized Expectancy for Negative Mood Regulation Scale	30	0.86-0.90	2 factors	Catanzaro and Mearns (1990)
Trait Meta-Mood Scale	48	0.82-0.87	3 factors	Salovey et al. (1995)
Self-Regulation Questionnaire	63	0.91	7 factors	Brown et al. (1999)
Managing emotions subscale: Mayer-Salovey-Caruso Emotional Intelligence Test V2.0	29	0.64-0.69	1 factor (2 tasks)	Mayer et al. (2003)
Emotional Labor Scale	15	0.74 -0.91	6 factors	Brotheridge and Lee (2003)
Emotion Regulation Questionnaire	10	0.73-0.79	2 factors	Gross and John (2003)
Difficulties in Emotion Regulation Scale	36	> 0.80	6 factors	Gratz and Roemer (2004)
<b>Perceived Stress</b>				
Perceived Stress Scale (PSS)	14, 10, 4	0.72-0.86	-	Cohen et al. (1983)
Stress Overload Scale (SOS)	30	0.96	2 factors	Amirkhan (2012)
Stress in Context (SIC) Questionnaire	N/A	N/A	N/A	Stress Measurement Network (2018)
<b>Emotional Exhaustion</b>				
Maslach Burnout Inventory–Emotional Exhaustion subscale	9	0.90	1 factor	Maslach et al. (1997)
Bergen Burnout Inventory–Exhaustion at work subscale	3	0.67-0.75	1 factor	Salmela-Aro et al. (2011)
Oldenburg Burnout Inventory–Exhaustion subscale	8	0.74	1 factor	Halbesleben and Demerouti (2005)
The Shirom-Melamed Burnout Measure Emotional Exhaustion subscale	5	N/A	1 factor	Shirom and Melamed (2006)

DEVELOPING THE WELLBEING HOLISTIC ASSESSMENT FOR TEACHERS

Scale	N of Items	Reliability	Structure	Source
The Copenhagen Burnout Inventory	19	0.85-0.87	3 factors	Kristensen et al. (2005)
The Burnout Measure	10	0.85-0.92	3 factors	Malach-Pines (2005)
Single-item measure of burnout	1	-	-	Dolan et al. (2015)
<b>Classroom Management Self-Efficacy</b>				
Classroom-Management and Discipline Self-Efficacy subscale	14	0.81	1 factor	Emmer and Hickman (1991)
Classroom-Management subscale of the Ohio State Teacher Efficacy Scale (CM-OSTES)	8, 4	0.90	1 factor	Tschannen-Moran and Hoy (2001)
Discipline subscale of the Norwegian Teacher Self-Efficacy Scale	4	0.90	1 factor	Skaalvik and Skaalvik (2007)
Discipline Control subscale of Teacher Professional Capability Scale	3	-	1 factor	Friedman and Kass (2002)
Teacher-perceived self-efficacy in classroom management	4	0.87	1 factor	Betoret (2009)
Classroom-Management subscale of the Teachers' Efficacy Beliefs System-Self	10	0.85–0.87	1 factor	Dellinger et al. (2008)

We acknowledge that there are existing frameworks that include broader aspects of wellbeing, such as material conditions, physical health, social support, and civic engagement, and that measure subjective wellbeing. For instance, the Organisation for Economic Co-operation and Development (OECD 2013, 2017) framework for measuring wellbeing and progress and the Gallup World Poll both measure life satisfaction and assess past experiences of negative and positive emotions, such as anger, sadness, stress, and enjoyment, as a measure of affective wellbeing. In addition, recent measures that focused on teachers have included positive indicators of wellbeing. The OECD Talis survey (2018) measures teacher wellbeing by focusing on self-efficacy and job satisfaction. The Teacher Subjective Wellbeing Questionnaire captures school connectedness and teaching efficacy (Renshaw, Long, and Cook 2015), whereas the Teacher Well-Being Scale measures three factors of wellbeing—workload wellbeing, organizational wellbeing, and student interaction wellbeing—by tapping into the determinants of these constructs (Collie et al. 2015).

These existing frameworks tend to focus on positive indicators of wellbeing and do not directly respond to the individual constructs identified in the conceptual framework we proposed in this study. While some of them include measures of self-efficacy, they all lack individual measures of the specific elements of our teacher wellbeing framework that are important to education in emergencies settings, such as occupational burnout and stress. They also do not measure emotion regulation as a key protective factor. Given these gaps, we constructed a multidimensional tool of educator wellbeing that captured the specific constructs of interest.

### MEASURING EMOTION REGULATION

Specific definitions of emotion regulation and the corresponding measurement approaches vary by theory, with the conceptions proposed by Gross (1998a, 1998b) and Saarni (1999, 2011) being the most popular. Gross adopts a process-oriented conception, which defines emotion regulation as “processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions” (275). This model distinguishes emotion regulation strategies as antecedent or response focused, “referring to when these cognitive events occur along the timeline of information processing” (Spaapen et al. 2014, 46). One of the most commonly used measures of emotion regulation, the Emotion Regulation Questionnaire (ERQ) (Gross and John 2003), was based on this model (Zelkowitz and Cole 2016). The ERQ has been translated into 33 languages and widely applied, but most studies to date have only analyzed the ERQ’s factor structure with university student populations (Spaapen et al. 2014).

Saarni (1999, 2011) postulates a competency-focused model that delineates skills considered prerequisites of emotional competency. John and Eng (2014) argue that the emotional competency approach is much broader than the specific emotion regulation approach, as it includes a host of processes, skills, and competences that do not directly regulate emotions but relate to individual behavior that is considered socioemotionally appropriate. Saarni (1999, 2011) defines emotion regulation as (1) awareness of one's emotional state; (2) skill in discerning and understanding others' emotions; (3) skill in using the vocabulary of emotion and expression; (4) capacity for empathic and sympathetic involvement in others' emotional experiences; (5) skill in realizing that an individual's inner emotional state need not correspond to their outer expression; (6) skill in modulating emotional reactions; (7) awareness that the structure or nature of relationships is defined in part by how emotion is communicated; and (8) a capacity for emotional self-efficacy (Saarni 2011). Although not all eight of these dimensions are agreed to by all researchers, a review by John and Eng (2014) states that measures under this tradition include the Difficulties in Emotion Regulation Scale (Gratz and Roemer 2004), the Generalized Expectancy for Negative Mood Regulation Scale (Catanzaro and Mearns 1990), the Mayer-Salovey-Caruso Emotional Intelligence Test V2.0 (Mayer et al. 2003), and the Trait Meta-Mood Scale (Salovey et al. 1995). The Negative Mood Regulation and Trait Meta-Mood scales have been criticized for equating emotion regulation with emotional avoidance, and for not including all relevant dimensions of the competency-based approach (John and Eng 2014; Gratz and Roemer 2004). Concerns have been raised about the Mayer-Salovey-Caruso Test over validity evidence based on content and relationship to other variables, and the measure has been criticized for measuring individuals' capacity to reason about emotion regulation rather than capturing individual differences in affective regulation. We consider these criticisms of measures that adopt a competency-focused model in the step of scale selection.

While most measures we reviewed present acceptable reliability, they vary greatly in the number of items included (10 to 63) and the number of factors (1 to 6). Measures that adopt a competency-focused model tend to be longer (i.e., have more items) than those that adopt a process-oriented conception and to measure more than one latent factor.

### MEASURING PERCEIVED STRESS

Dorsey and colleagues (2020) define stress as a "multi-dimensional construct that is comprised of exposure to events, perceptions of stress, and physiological responses to stress" (2). We reviewed measures that have been specifically developed to assess perceptions of stress. Measures commonly used in the field include the

Perceived Stress Scale (PSS) and the Stress Overload Scale. The PSS (4-, 10-, and 14-item versions) measures the degree to which an individual perceives his/her life as “unpredictable, uncontrollable, and overloading” (Cohen, Kamarck, and Mermelstein 1983, 387) within the past month. It assesses global stress perceptions, and as such can be used with any population and in any context. The Stress Overload Scale measures stress overload, a state that occurs when demands overwhelm resources (Amirkhan 2012). It is comprised of 30 items and 2 subscales, personal vulnerability and event load.

### MEASURING EMOTIONAL EXHAUSTION

Emotional exhaustion is one of three dimensions of burnout, also described as “wearing out, loss of energy, depletion, debilitation, and fatigue” (Leiter and Maslach 2016, 89-100). Burnout more broadly is a psychological syndrome defined as a “prolonged response to chronic interpersonal stressors on the job” (103). The three key dimensions of burnout include exhaustion, cynicism and detachment, and a lack of accomplishment at work. Different measures have been developed to either assess several dimensions of burnout or assess the sole dimension of exhaustion. Albeit debated, burnout in some cases has been simplified to a one-dimensional construct focused on exhaustion, as exhaustion is often considered its primary element and potentially a suitable proxy for the burnout construct (Maslach and Leiter 2016).

Our review found three measures of burnout that included an exhaustion subscale: the Bergen Burnout Inventory assesses exhaustion at work, the Oldenburg Burnout Inventory measures physical, affective, and cognitive exhaustion; and the MBI includes an emotional exhaustion subscale. The MBI is the most common measure of burnout (Aloe et al. 2014) and is considered the gold standard (Schaufeli and Taris 2005), given that it is used in more than 90 percent of the studies conducted on the syndrome (Shirom and Melamed 2006). It has been translated into and validated in many languages. Three burnout measures focus on exhaustion alone, although they assess different facets. The Shirom-Melamed Burnout Measure conceptualizes burnout as the depletion of energetic resources and makes a distinction between physical, emotional, and cognitive exhaustion. The Copenhagen Burnout Inventory makes a distinction between physical and psychological exhaustion. The Burnout Measure distinguishes between physical, emotional, and mental exhaustion.

Most of the emotional exhaustion scales or subscales we reviewed have a low number of items (10 or fewer) and only measure one latent factor. While most present decent reliability, the MBI emotional exhaustion subscale has the strongest reliability (0.90) of all the measures reviewed.

### MEASURING CLASSROOM-MANAGEMENT SELF-EFFICACY

The conceptualization of teacher self-efficacy is based on two foundational literature strands (Tschannen-Moran and Hoy 2001); one uses Rotter's (1966) social learning theory and the locus of control concept as a theoretical foundation; the other is based on Bandura's (1977) social cognitive theory and his construct of self-efficacy. While Rotter's (1966) informed earlier measurement efforts (Armor et al. 1976; Guskey 1981), later attempts to measure the construct of self-efficacy drew from Bandura's (1977) conceptualization (Gibson and Dembo 1984; Emmer and Hickman 1991). Bandura defines perceived self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (3). While teacher self-efficacy was originally conceived as a single construct, later studies recognized its multidimensional nature (Aloe et al. 2014).

Classroom-management self-efficacy is a domain of teacher self-efficacy that is broadly defined as a teacher's perceived competency in organizing a classroom, maintaining order, proactively managing disruptions, and gaining the participation and attention of all students (Aloe et al. 2014; Tschannen-Moran and Hoy 2001; Brouwers and Tomic 2000; Emmer and Hickman 1991). However, this construct has been conceptualized in different ways, which has led to variability in the instruments used (Aloe et al. 2014). In a review of measurement scales with classroom management items, O'Neill and Stephenson (2011) categorize CMSE into six categories: classroom organization; establishing and maintaining routines and expectations; gaining and maintaining student attention; facilitating student cooperation; maintaining order and control; and general classroom management. The authors find that the different CMSE scales include different CMSE categories in their measurement, which reflects the different approaches to conceptualization and measurement. Most scales we reviewed included items on maintaining order and control; the least common were those pertaining to resource allocation. We reviewed CMSE scales that align with the operationalization proposed by Aloe et al. (2014), which characterizes classroom management self-efficacy as "controlling disruptive behavior, calming and responding to defiant students, and establishing a routine and order to keep learning activities running smoothly" (105). Given the issues of discipline and disruptive behavior associated with a gang-related presence in the school or community that might be expected in Salvadoran classrooms, we focused on measures that align with this conceptualization. We found only one scale designed to measure CMSE as a single domain and five CMSE subscales from broader self-efficacy scales. The scales and subscales ranged from 3 to 14 items and all had reliability coefficients above .8.

**APPENDIX B**

**PSYCHOMETRIC RESULTS**

*Table B1: Item Correlation by Scale (polychoric correlation)*

<b>Emotion regulation reappraisal</b>		(1)	(2)	(3)	(4)	(5)	(6)			
(1)	When I want to feel more positive emotion (such as joy or amusement)...	1.00								
(2)	When I want to feel less negative emotion (such as sadness or anger)...	0.42	1.00							
(3)	When I'm faced with a stressful situation, I make myself think about it...	0.29	0.40	1.00						
(4)	When I want to feel more positive emotion, I change the way...	0.38	0.36	0.41	1.00					
(5)	I control my emotions by changing the way I think about the situation I'm in.	0.28	0.35	0.41	0.57	1.00				
(6)	When I want to feel less negative emotion, I change the way I'm thinking...	0.29	0.42	0.39	0.49	0.55	1.00			
<b>Emotion regulation suppression</b>		(1)	(2)	(3)	(4)					
(1)	I keep my emotions to myself.	1.00								
(2)	When I am feeling positive emotions, I am careful not to express them.	0.59	1.00							
(3)	I control my emotions by not expressing them.	0.51	0.58	1.00						
(4)	When I am feeling negative emotions, I make sure not to express them.	0.33	0.31	0.49	1.00					

DEVELOPING THE WELLBEING HOLISTIC ASSESSMENT FOR TEACHERS

<b>Emotion regulation reappraisal</b>		(1)	(2)	(3)	(4)	(5)	(6)			
<b>Emotion exhaustion</b>		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	Drained	1.00								
(2)	Used up	0.74	1.00							
(3)	Fatigued	0.63	0.63	1.00						
(4)	End of my rope	0.57	0.57	0.59	1.00					
(5)	Burned out	0.66	0.63	0.68	0.70	1.00				
(6)	Frustrated	0.47	0.43	0.58	0.47	0.64	1.00			
(7)	Working too hard	0.46	0.43	0.46	0.48	0.60	0.42	1.00		
(8)	Stress	0.44	0.47	0.45	0.61	0.58	0.52	0.45	1.00	
(9)	Strain	0.50	0.44	0.55	0.54	0.69	0.63	0.53	0.59	1.00
<b>Perceived stress I</b> (In the past two weeks, how often have you...)		(1)	(2)	(3)	(4)	(5)	(6)			
(1)	been upset because of something that happened unexpectedly?	1.00								
(2)	felt "stressed"?	0.49	1.00							
(3)	felt nervous?	0.47	0.63	1.00						
(4)	found that you could not cope with all the things that you had to do?	0.28	0.34	0.32	1.00					
(5)	been angered because of things that were outside of your control?	0.44	0.45	0.44	0.36	1.00				
(6)	felt difficulties were piling up so high that you could not overcome them?	0.43	0.53	0.48	0.48	0.58	1.00			

<b>Emotion regulation reappraisal</b>		(1)	(2)	(3)	(4)	(5)	(6)			
<b>Perceived stress II</b> (In the past two weeks, how often have you...)		(1)	(2)	(3)	(4)					
(1)	felt confident about your ability to handle your personal problems?	1.00								
(2)	felt that things were going your way?	0.57	1.00							
(3)	been able to control irritations in your life?	0.61	0.50	1.00						
(4)	felt that you were on top of things?	0.61	0.53	0.79	1.00					
<b>Classroom management</b>		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
(1)	How much can you do to control disruptive behavior in the classroom?	1.00								
(2)	How much can you do to get children to follow classroom rules?	0.63	1.00							
(3)	How much can you do to calm a student who is disruptive or noisy?	0.60	0.70	1.00						
(4)	To what extent can you establish a classroom management system...	0.51	0.61	0.65	1.00					
(5)	To what extent can you keep a few problem students from ruining an entire lesson?	0.56	0.61	0.70	0.61	1.00				
(6)	To what extent can you respond to defiant students?	0.48	0.50	0.56	0.50	0.64	1.00			
(7)	To what extent can you make your expectation clear about student behavior?	0.57	0.58	0.56	0.58	0.55	0.62	1.00		
(8)	To what extent can you establish routines to keep activities running smoothly?	0.49	0.58	0.51	0.59	0.55	0.50	0.61	1.00	

Table B2: EFA All Scales–Statistics

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor 1	9.24	4.69	0.25	0.25
Factor 2	4.55	1.53	0.12	0.37
Factor 3	3.02	0.42	0.08	0.45
Factor 4	2.59	0.88	0.07	0.52
Factor 5	1.72	0.37	0.05	0.57
Factor 6	1.35	0.28	0.04	0.61
Factor 7	1.06	0.09	0.03	0.64

Figure B1: EFA All Scales–Scree Plot

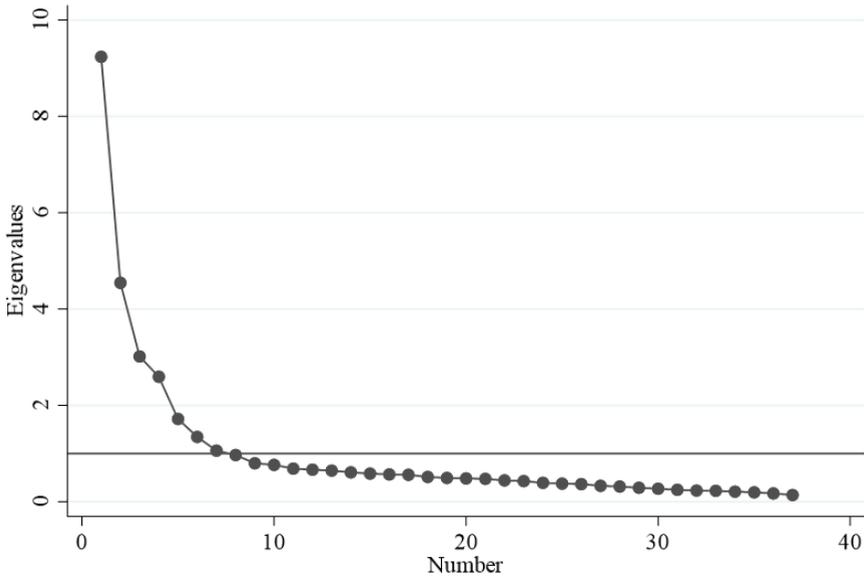


Table B3: Parallel Analysis

Real Data % of Variance	Mean of Random % of Variance	95 <sup>th</sup> Percentile of Random % of Variance
26.2106**	5.4262	5.8937
12.8515**	5.1485	5.5164
8.5394**	4.9475	5.265
7.3024**	4.7705	5.0868
4.8575*	4.6119	4.9044

Note: Parallel analysis implemented using FACTOR, following Lorenzo-Seva and Ferrando (2006), based on minimum rank factor analysis, as recommended by Timmerman and Lorenzo-Seva (2011). Polychoric correlation matrices used. Permutation of the raw data was performed to obtain random correlation matrices, as suggested by Buja and Eyuboglu (1992). \*\*Advised number of dimensions when 95th percentile is considered. \*Advised number of dimensions when mean is considered.

## APPENDIX C

### WHAT TOOL: SPANISH VERSION

Table C1: Spanish Version of the Scales

Item
<b>Emotion regulation reappraisal</b>
Si quiero tener una emoción más positiva a la que estoy sintiendo trato de pensar en algo mas/en otra cosa/de cambiar mi pensamiento
Si quiero tener una emoción menos negativa a la que estoy sintiendo trato de pensar en algo mas /en otra cosa/de cambiar mi pensamiento
Cuando me enfrento a una situación estresante, trato de pensar de tal forma que me ayude a estar en calma.
Cuando quiero sentir una emoción más positiva, modifico mi forma de pensar acerca de la situación actual.
Controlo mis emociones por medio de cambiar la forma en que pienso sobre la situación en la que me encuentro.
Cuando quiero sentir una emoción menos negativa, modifico mi forma de pensar sobre la situación en la que me encuentro.

Item
<b>Emotion regulation suppression</b>
Me guardo mis emociones para mí misma / mismo
Cuando siento emociones positivas me cuido de no expresarlas
No expresar mis emociones es una forma de controlarlas
Cuando estoy sintiendo emociones negativas, me aseguro de no expresarlas.
<b>Perceived stress I</b> (Durante las últimas (2) dos semanas, ¿Con cuánta frecuencia ha sentido estas emociones?)
Con molestia a causa de algo que ocurrió de forma repentina
Con estrés
Con nerviosismo
Llegar a la conclusión que no puede hacer frente con todas las cosas que tiene que hacer
Con enfado a causa de cosas que están fuera de su control
Sentir que las dificultades se acumulan de tal manera que no puede superarlas
<b>Perceived stress II</b> (Durante las últimas (2) dos semanas, ¿Con cuánta frecuencia ha sentido estas emociones?)
Con confianza acerca de su habilidad para lidiar / manejar sus problemas personales
La sensación que las cosas salen a su manera
En capacidad de controlar las irritaciones en su vida
En control de las cosas
<b>Classroom management</b> (¿En qué medida puede enfrentar de forma positiva las siguientes situaciones?)
Controlar el comportamiento que genera desorden dentro del aula
Lograr que las y los estudiantes sigan las reglas dentro del aula
Calmar estudiantes que generan ruido o alboroto
Establecer un sistema de manejo del aula con cada grupo de estudiantes
Evitar que algunas / algunos estudiantes problemáticos estropeen una clase completa
Lidiar con estudiantes desafiantes
Establecer de forma clara sus expectativas acerca del comportamiento que se espera de las y los estudiantes
Establecer rutinas que permitan que las actividades se desarrollen de forma ágil y continua

Note: Negative items were reverse scored.