

SERAIS: Social Emotional Response and Information Scenarios Evidence on Construct Validity, Measurement Invariance, and Reliability in use with Syrian Refugee Children in Lebanon

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Abstract

Demonstrating that social-emotional learning (SEL) programs lead to improvements in children's social-emotional skills requires the use of measures that provide accurate data capturing meaningful changes in children's development over time. In contexts affected by crisis and conflict, few measures have the evidence required to support their use in program evaluations, limiting stakeholders' ability to determine whether programs are working, how, and for whom. The Social Emotional Response and Information Scenarios (SERAIS) holds promise for addressing this gap. SERAIS ("I would" in French) employs a scenario-based format in which children are asked to report what they would do and feel in a variety of different social situations. Responses are designed to capture information about a suite of social, emotional, and cognitive skills among elementary school-aged children in fragile, conflict-affected settings. The measure was tested in Lebanon in school year 2017-18 with a sample of 3,661 Syrian refugee children (ages 5-16) who were enrolled in Lebanese formal schools and had access to IRC programming in the Bekaa and Akkar regions of Lebanon. Evidence on the psychometric properties of this version of SERAIS support its use as an outcome measure in program evaluations and in research with Syrian refugee children in Lebanon. Specifically, we provide evidence that SERAIS assesses key social and emotional skills reliably. We also provide evidence that the measure functions and is understood in the same way by children with access to SEL programming and those without, as well as by children at the beginning and the end of the school year. This criteria is known as *measurement invariance*, and establishing the measurement invariance of an assessment used in a rigorous program impact evaluation enables us to confidently assess whether children's skills are improving or declining over time – and whether such changes are the result of our SEL programming.

Overview of SERAIS: MENAT Measurement Library Criteria



SERAIS should have moderate to high evidence of validity/reliability for use as an evaluation measure. Much of the evidence is positive and we are confident in the quality of the evidence. Modest revisions to the current version of the measure are suggested to ensure linguistic and contextual relevance and to strengthen and clarify wordings of items. However, given that there is clear guidance on how the measure can be revised, we recommend this measure for its specified purpose(s) with adaptations of the social situation scenarios for context and modest revisions.

Criteria	Indicators	Notes
Purpose	Program evaluation	Requires high internal consistency and interrater reliability; strong evidence of validity; sensitivity to change; ideally measurement invariance
Empirical evidence overall	# of types of evidence available	4
	% of evidence meets empirical criteria	96% (green only); 100% (yellow and green)
	Evidence fit for purpose	Yes for validity, reliability, and measurement invariance; sensitivity to change evidence forthcoming
Confidence in evidence	Sampling method	Multi-stage: <i>School level</i> : Universe of IRC non-formal retention support programs in Lebanon; <i>Child-level</i> : All children who registered and attended at least once in the first month of the program
	Sample size	Large (3,661)
	Missing data	Missing data addressed using rigorous methods
	Rigor of method	High
Revisions	Clear guidance on what to adjust/refine	Yes

Overview of SERAIS Empirical Results

Constructs/sub-constructs assessed	Internal consistency	Construct validity	Longitudinal invariance	Treatment group invariance	Recommendations for revision
Hostile attribution bias	○	✓	✓	✓	
Negative emotional orientation	✓	✓	✓	✓	Consider further piloting anger and sadness items to ensure translation and linguistic meaning
Calm emotional orientation	✓	✓	✓	✓	
Emotional dysregulation	✓	✓	✓	✓	Consider further piloting items for cultural/contextual relevance
INS: Appeal to authority	✓	✓	✓	✓	
INS: Aggression	✓	✓	✓	✓	
INS: Resolution-oriented strategies	✓	✓	✓	✓	Consider revising disengagement items to have less negative tone and to remove double-barreled wording.

Key

✓	Good/excellent evidence against empirical criteria	○	Fair/inconclusive evidence against empirical criteria	✗	Little to no evidence against empirical criteria	NA	Not applicable
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For additional information on the empirical criteria, please see <https://inee.org/measurement-library>



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Introduction

The Social Emotional Response and Information Scenarios (SERAIS) measure was assembled as part of an evaluation study that tested the impact of the International Rescue Committee’s (IRC’s) social-emotional learning (SEL)-infused retention support programming in Lebanon on Syrian refugee children’s holistic learning skills. SERAIS (“I would” in French) employs a scenario-based format in which children are asked to report what they would do and feel in a variety of social situations. Responses are designed to capture information about a suite of social, emotional, and cognitive constructs – including children’s hostile attribution bias, emotional orientation, emotional dysregulation, and interpersonal negotiation strategies (INS) – definitions of which are provided in Table 1, below.

Table 1. *Definitions of SERAIS assessed constructs*

Construct	Definition
Hostile attribution bias	The tendency to interpret the behavior of others as hostile in intent when it may be ambiguous or benign (Dodge & Frame, 1982; Dodge et al., 2015)
Emotional orientation	The type and intensity of emotions that a child would experience in a social situation
Emotional (dys)regulation	The degree to which a child modulates the expression of intense emotions in socially challenging situations (Di Giunta et al., 2017; Eisenberg, Spinrad, & Eggum, 2010)
Interpersonal negotiation strategies	The strategies by which a child tries to meet personal needs in interacting with another child when both children’s needs are in conflict (Yeates & Selman, 1989)

The measure focused on these particular skills given their alignment with the theory of change for the IRC’s five-component SEL program, which was implemented and evaluated in Lebanon in school year (SY) 2017-2018 as part of the IRC’s after-school retention support for Syrian refugee children. The five-component SEL program consisted of daily activities designed to build competencies in emotion regulation, positive social skills, conflict resolution, perseverance, and brain building. Hypothesized to underlie these competencies are a set of cognitive, social, and emotional developmental *mechanisms*. These mechanisms are the “near transfer” skills: the most immediate skills the program is hypothesized to impact in order to build children’s competencies in the medium and longer term (Jones & Bouffard, 2012). We identified the particular mechanisms based on a review of developmental theory and evidence (see below). Given data collection resource constraints, we then narrowed down the focus to those assessed in SERAIS based on mechanisms we hypothesized were drivers of multiple IRC

core competencies and amenable to intervention efforts.¹ For example, the ability to recognize and modulate negative emotions is likely important in the development of both conflict resolution and social behavior competencies. By identifying and carefully assessing developmental mechanisms of change and linking them to longer-term outcomes in the context of rigorous randomized control trials, we can understand *why* or *how* program impacts occurred (or did not occur). In turn, this clarity and precision can improve stakeholders' ability to strengthen, replicate, and target the mechanisms of programs that do work, and to deemphasize the mechanisms that may not work (Tubbs Dolan, 2018; Wuermli, Tubbs, Petersen, & Aber, 2015; Yoshikawa, Wuermli, Raikes, Kim, & Kabay, 2017). To date, however, few measures of such developmental mechanisms have been assembled and tested for use in contexts of crisis and conflict, where the challenges to collecting data that is reliable and valid multiply. In assembling SERAIS, we hope to contribute such evidence to and motivate further testing of the measure through the MENAT Measurement Library.

In the remainder of this introduction, we provide an overview of various models that have been proposed to explain the development of children's social behaviors in context. The integration of these models allowed us to identify plausible mechanisms by which the IRC intervention was operating, and therefore, possible targets for assessment. We then briefly review for four discrete skills within these models the theory and evidence – where available – linking each mechanism to longer-term outcomes and evidence that each mechanism is malleable to intervention. We note that much of the currently available evidence to date has been generated in contexts that are best characterized as white, educated, industrialized, rich, democracies (WEIRD; Henrich, Heine, & Norenzayan, 2010), and that these mechanisms may operate differently in the Syrian refugee context (Kim, Brown, Tubbs Dolan, Sheridan, & Aber, 2019). Thus, a secondary purpose of this measure is to generate evidence on the complex ways that both exposure to adversity and context may inform the adaptive value of such mechanisms over time.

Towards an integrated social-cognitive, emotional, and structural model of social behaviors

Social cognitive theories posit that children's social behaviors (e.g., aggression, helping behaviors) are driven by a multi-step information processing effort that occurs in the context of social situations (Dodge & Frame, 1982). Children bring to any social situation both past experiences and biological capabilities, which children draw on as they first internally (i) encode and (ii) interpret social cues, and then (iii) formulate a goal for the interaction and (iv) possible responses. They (v) evaluate the responses based on a number of criteria, and ultimately select one to (vi) enact. Although we present the steps sequentially here, they are hypothesized to occur in parallel and linked by feedback loops (Crick & Dodge, 1994).

¹ For more information on measures used to assess hypothesized developmental *outcomes*, see 3EA, 2018.

While such social information processing models have garnered empirical support in diverse WEIRD (Aber, Brown, & Jones, 2003; Arsenio, Adams, & Gold, 2009; Crick & Dodge, 1994; Lansford, Malone, Dodge, Pettit, & Bates, 2010) and non-WEIRD contexts (Dodge et al., 2015), two major limitations have been noted. First, social information processing models have until recently tended to deemphasize the complex interplay that occurs between the more cognitive processes described above and emotional processes – and in particular, emotional and behavioral regulatory skills and processes – in shaping social behavior (Lemerise & Arsenio, 2000). For example, a tendency to interpret social cues (step ii) as having a hostile intent – a pattern known as *hostile attribution bias* -- may arouse strong negative emotions, such as anger and sadness. Such hostile attribution bias also may *not* trigger an emotional response. In turn, the arousal and recognition of the emotions, what we term here a child's *emotional orientation*, may play a key role in how children respond in a potentially conflictual social situation. Strong and negative emotional orientation may deplete cognitive resources, inhibiting children's ability to reflect on their goals for the interaction (step iii) and to recall and regulate responses (steps iv-vi; Verhoef, Alsem, Verhulp, & Castro, 2019). This may include difficulty appropriately modulating the expression of emotion responses – by either overcontrolling or undercontrolling the expression of their emotions – what we term here *emotional dysregulation* (Di Giunta et al., 2017). A child's emotional orientation entering into a social situation can also shape how they attend to, encode, and interpret social cues (steps i-ii; Dodge & Somberg, 1987; Orobio de Castro, Slot, Bosch, Koops, & Veerman, 2003). To date, however, limited research has measured and examined the relationships between these social cognitive and emotion mechanisms and longer-term social behavioral outcomes (Castro, Merk, Koops, Veerman, & Bosch, 2005; Helmsen, Koglin, & Petermann, 2012; Orobio de Castro et al., 2003).

Second, social information processing models have been criticized on the grounds that they largely fail to conceptualize the specific social behaviors beyond aggression that may be enacted as a result of hostile attribution and emotional arousal (step vi) and to articulate the goal-oriented social behaviors useful for resolving and diffusing conflict that develop as children's social skills mature (Leadbeater, Hellner, Allen, & Aber, 1989; Yeates & Selman, 1989). To address these concerns, structural developmental theorists have focused on identifying developmental progressions of social behaviors enacted specifically as a part of efforts to resolve interpersonal conflicts. Such *interpersonal negotiation strategies* (INS) are conceptualized as having four different levels, described in Table 2, below. Strategies are categorized based on whether they are oriented towards changing others' behaviors (*other transforming*) or whether they change the individual's behavior (*self-transforming*). While this model provides a well-defined developmental progression of conflict-resolution strategies, it has little consideration for the role that emotional and regulatory processes can potentially play in resolving conflict situations.

Table 2. *Interpersonal negotiation strategy descriptions and examples*

INS Level	Description	Examples	
		Other-transforming	Self-transforming
INS 0	Impulsive, physicalistic, and/or non-communicative (e.g., fight or flight) strategies	Verbal aggression Physical aggression	Disengage
INS 1	Command or one-way (e.g., command or obey) strategies	Command Appeal to authority	Obey* Wait for help*
INS 2	Reciprocal, exchange oriented strategies	Ask for reasons	Influence, give reasons
INS 3	Mutual, collaborative strategies	Collaboration*	

Note: Adapted from Leadbeater et al., 1989; Selman, Beardslee, Schultz, Krupa, & Podorefsky, 1986.

*Not assessed as part of SERAIS given the age of students in the current sample and relevance to the included social scenarios

Integrating the social information processing model with theories and evidence on emotional regulation and structural-developmental approaches to interpersonal conflict led us to attempt to assess in SERAIS four key mechanisms encompassing social cognitive, emotional, and conflict resolution processes and behaviors.

Hostile attribution bias. In the first step of the social information processing model, children attend to and selectively encode social cues in their working memory (e.g., child A notices that child B cuts her in line). Over time, children develop patterns of how they encode such cues: for example, children may consistently over-attend to socially hostile and threatening cues (e.g., turn-taking violations), what is known as hypervigilance. Second, children interpret these cues, including by attributing intent to others in the social situation. For example, child A may attribute child B's behavior to not being aware that a line was forming; this is a non-hostile attribution. On the other hand, child A may interpret child B's behavior as a deliberate attempt to cut her off – a hostile attribution – that over time can become an entrenched pattern of interpretation known as hostile attribution bias. Across primarily WEIRD but increasingly global contexts, a robust evidence base has shown that children's hostile attribution bias predicts chronic aggression problems (Crick & Dodge, 1994; Dodge et al., 2015; Verhoef et al., 2019). As the same time, randomized control trial evaluations of SEL programs in the United States have provided rigorous evidence that children's hostile attribution biases are amenable to intervention (Aber, Jones, Brown, Chaudry, & Samples, 1998; Dodge & Godwin, 2013; Jones, Brown, & Aber, 2011; Jones, Brown, Hoglund, & Aber, 2010). In turn, such experimentally induced changes have been

associated with longer-term social-behavioral outcomes such as aggression (Portnow, Downer, & Brown, 2018).

Emotional orientation and emotional dysregulation. Recent efforts to integrate emotional processes into the social information processing model have theorized that children's moods, level of emotional arousal, and discrete emotions – and their ability to regulate those emotions -- can influence all steps that shape children's behaviors in social situations (Lemerise & Arsenio, 2000). In our example above, an attribution by child A that she was deliberately cut in line may arouse various types and intensity of emotions, orienting her emotionally towards the responses she generates and ultimately enacts. For instance, she may feel either angry that the turn-taking rules have been violated or sad that her classmate clearly ignored her turn, which may lead to two very different goals for and enactment of responses (e.g., aggressive responses to reclaim her rightful position in line versus disengaged responses to avoid exacerbating her sadness). As children are experiencing emotions in the context of social situations, however, they have the ability to regulate – to control, manage, and modify – whether and how they express such emotions. Just because child A *feels* angry about being cut in line does not necessarily mean she will *express* such anger in a dysregulated way, or ultimately, react with aggression. A child with strong emotion regulation skills would be able to modulate their impulsive expression of negative emotion to achieve their goals in a social situation. However, as noted above, strong negative emotions can overwhelm children's reflective and regulatory abilities, leading to difficulty controlling their expressions of negative emotions such as anger and sadness in socially adaptive ways and potentially limiting the repertoire of responses and behaviors enacted (Verhoef et al., 2019).

A large body of research has established linkages between emotional regulation and dysregulation and longer-term social outcomes in WEIRD contexts (for review, see: Eisenberg et al., 2010), and has also provided promising evidence that children's emotion regulation skills can improve with access to SEL interventions (Metz et al., 2013; Webb, Miles, & Sheeran, 2012). However, it is important to note that the value placed on emotional orientation and expression differs greatly across and within cultural contexts. Research on the impact of SEL intervention on emotional processes is nascent in non-WEIRD contexts, and to date, little empirical research globally has examined how emotional orientation and emotional dysregulation transact with more cognitive, attribution processes to shape children's responses in social situations (for exceptions, see: Castro et al., 2005; Dodge & Somberg, 1987; Orobio de Castro et al., 2003; Runions & Keating, 2010; Verhoef et al., 2019). Given such limited knowledge, we chose to include both emotional orientation and emotional dysregulation in developing SERAIS for use in 2017-2018.

Interpersonal negotiation strategies. In the latter steps of the social information processing model, children generate, evaluate, and enact responses within social situations.

While social cognitive research has typically focused on the generation and enactment of aggressive responses, interpersonal negotiation strategies are a broader set of responses and behaviors that may be enacted in the context of interpersonal conflict situations (Selman et al., 1986; Yeates & Selman, 1989). As children mature across biological, cognitive, social, and emotional domains, it is hypothesized that they have access to and the ability to enact more complex INS that take into account the perspective of multiple participants in resolving interpersonal conflicts (Leadbeater et al., 1989). In our example above, imagine child A is cut in line by child B in first grade. She interprets child B's actions as hostile in intent, feels angry and reacts impulsively by stomping her feet on the ground; to reach her goal of reclaiming her spot in line, she may resolve the situation by pushing child B out of line or by telling the teacher. Now imagine child A is cut in line by child B in fifth grade. While she may still interpret child B's actions as hostile in intent and feel angry, her emotion regulation skills may have further developed so that she does not react with impulsive anger, allowing her to reflect on and account for child B's perspective in her response: She may ask child B why he cut her in line, politely but assertively saying that she was in line already and ask child B to move, or even just letting it go. To date, a small but promising body of descriptive and experimental evidence from WEIRD contexts has found that more mature interpersonal negotiation strategies are associated with fewer risk behaviors, including hard and soft drug use, delinquent behaviors, runaway behaviors, and sexual risk (LaRusso & Selman, 2011; Leadbeater et al., 1989; Yeates, Schultz, & Selman, 1991); and that SEL interventions can improve and even change the trajectory of development of INS strategies (Aber et al., 2003; Jones et al., 2011). Little evidence exists on the development of such strategies, however, in non-WEIRD contexts.

Towards an integrated social cognitive, emotional, and structural measure of social behaviors

SERAIS was assembled from items and formats previously included in variety of measures used in global and United States contexts. By asking children a series of questions about their plausible cognitive, emotional, and behavioural responses to specific social scenarios – partly adapted from previously available measures and partly newly developed for SERAIS – SERAIS aims to capture a holistic snap shot of social-emotional development *in-situ*. The following section describes the original measures that were adapted for use in or inspired the design of SERAIS.

Hostile attribution bias and aggressive response. SERAIS hostile attribution and INS aggressive response items were based on those included in the Children's Stories measure developed by Dodge et al. (2015) to assess hostile attribution bias and aggressive responses in the Parenting Across Cultures study, a longitudinal study of children and caregivers in 12 social-cultural groups in 9 countries (China, Colombia, Italy, Jordan, Kenya, the Philippines, Sweden, Thailand, and the United States). Children's Stories originally contained 10 vignettes describing social situations in which a protagonist is physically provoked by a peer

with ambiguous intention (e.g., walking to school wearing new shoes and being bumped into a puddle from behind by another child). Following each vignette, the child was asked whether the peer provocateur in the story had caused the negative outcome for the child by accident or on purpose and how they would react to the situation (avoid confrontation, act competently, and aggressive reaction). On average across groups, the internal consistency of the hostile attribution (Bentler's $\rho = 0.82$; 95% CI: 0.80, 0.84) and aggressive response ($\rho = 0.95$; 95% CI: 0.94, 0.96) subscales were high, although there was variation within groups in the internal consistency of hostile attribution scores (ρ ranged from 0.61 to 0.94).

Emotional orientation and emotional dysregulation. Emotional orientation and dysregulation items were based on those included in the Anger and Sadness Self-Regulation Scale used in the Parenting Across the Cultures study in three countries: Colombia, Italy, and the United States (Di Giunta et al., 2016). Six vignettes describing ambiguous social situations with peers (different scenarios from Dodge et al., 2015) were presented to children, and children were asked (1) why peers acted the way they did (i.e., attribution biases); (2) how angry and sad they feel (emotion orientation: included in the original measure; not presented in the validation study, Di Giunta et al., 2016); how likely it is they would express angry and sad emotionally dysregulated behaviors; and (3) how well they could deal with their emotions. The internal consistency of the dysregulated sadness (Cronbach's $\alpha = 0.70 - 0.80$) and anger ($\alpha = 0.69 - 0.89$) expression subscales varied across countries.

Interpersonal negotiation strategies: Interpersonal negotiation strategy items were constructed inspired by similar items in the Social Problem Solving measure initially used in the Fast Track study and revised by Aber et al. (1995) to include multiple choice response formats; the Conflict Resolution Style Questionnaire response choices (Slaby & Guerra, 1988); and in consultation with literature on INS developmental level and coding manual (Brion-Miesels & Selman, 1984; Leadbeater et al, 1989; Selman et al., 1986).

Research Aims

SERAIS was assembled with the specific assessment content, purpose, and context in mind: It is an assessment of social-information, emotional, and interpersonal negotiation processes that was intended to provide data for program impact evaluation purposes in the Syrian refugee in Lebanon context. It is important to note, however, that these constructs have been identified as important in theories and empirical research based primarily in WEIRD settings. The SERAIS measure has not previously been tested in any other setting, and we currently lack the empirical evidence to support the theory the measure is based on with the Syrian refugee population in Lebanon. In this technical report, then, we provide evidence on the validity, reliability, and longitudinal invariance of SERAIS in this context and for this purpose. Specifically, our work aims to answer the following research aims:

1. Descriptive: To describe the average level of and variation in hostile attribution bias, emotional orientation, emotional dysregulation, and interpersonal negotiation strategies of a sample of Syrian refugee children with access to IRC non-formal retention support in Lebanon.
2. Construct validity: To provide evidence of: (a) whether the relationships between item scores are consistent with single or multiple underlying constructs; (b) the strength of relationship of the items to the underlying construct(s); and (c) whether the factor structure can be replicated, through confirmation of the factor structure in a separate sample.
3. Invariance: If a common structure can be established for SERAIS, to provide evidence of the extent to which scores can be used to make meaningful comparisons (a) across treatment and control groups; and (b) across time.
4. Correlational patterns: To provide evidence of the extent to which scores on empirically derived subscales of SERAIS are associated each other concurrently and longitudinally, as well as evidence on how scores are associated with gender and age in the Syrian refugee context. Because this measure in the current form has never been tested before in this context or elsewhere, this aim is exploratory and meant to be hypothesis generating, as opposed to a formal test of validity.
5. Reliability: To provide evidence of the internal consistency of empirically derived subscales of SERAIS.

Method

Participants/study sample

During the 2017-2018 school year, the IRC delivered Learning in a Healing Classroom (Healing Classrooms) retention support programming to Syrian refugee children in Lebanon's Bekaa and Akkar regions. As part of back-to-school campaigns coordinated with the Ministry of Education and Higher Education, the IRC identified and recruited children enrolled in Lebanese public schools for the program. At 57 sites close to their homes and schools (25 sites in Akkar; 32 sites in the Bekaa), students had access to eight hours per week of Arabic, math and second language (English or French) instruction designed to build the competencies needed to succeed in Lebanese public schools. Programming was delivered from November 2017 to May 2018, during which time two versions of Healing Classrooms were tested using a large cluster-randomized controlled trial (CRCT).

In 28 out of the 57 sites randomly assigned to receive Healing Classrooms Basic, teachers received a five-day training on the IRC's *Healing Classrooms* approach, which integrates classroom SEL principles and practices — such as classroom management, critical thinking, and positive pedagogy — into Arabic literary, numeracy, and second language instruction. To provide ongoing support, all teachers received regular mentoring visits and attended monthly peer-support Teacher Learning Circles. In the other 29 sites randomly assigned to receive

Healing Classrooms 5-component SEL, teachers also received additional training and support to implement activities focused on building five core social-emotional skills: brain building, emotion regulation, positive social skills, conflict resolution skills, and perseverance.

The data and findings reported here are derived from the intent-to-treat (ITT) sample – those that had *access* to Healing Classrooms programming – of the CRCT evaluation study. We defined the ITT sample as children having registered and attended at least once in the first month of the program (November 2017) in SY 2017-2018. This includes 3,661 students from 169 classrooms in the 57 sites. With this sample, SERAIS was assessed at the beginning (November-December 2017: baseline $N = 3,277$, treatment group $n = 1,718$; control group $n = 1,559$) and at the end of the program (May 2018: endline $N = 3,207$; treatment group $n = 1,667$; control group $n = 1,532$).

Students in the ITT sample were children aged 5 to 16 ($M=9.38$, $SD = 2.27$) who were identified as currently attending Lebanese public schools in grades one to seven² ($M = 2.85$, $SD = 1.61$). The sample included equal numbers of male and female students, and of the full ITT sample, 61% had attended IRC programming in the prior year. Table 3 below presents detailed demographic information on the full ITT sample.

Table 3. *ITT sample characteristics*

	n	%
Public school grade level	3,661	
1	936	26
2	842	23
3	686	19
4	617	17
5	307	8
6	171	5
7	102	3
Child health	3,661	
Child healthy	3,493	95
Child have health issues	168	5
Household education level (highest)	3,542	
No schooling	180	5
Completed Grade 3/4	298	8
Completed grade 5/6	979	28
Completed grade 7/8	649	18
Completed grade 9-11	955	27
Completed grade 12	465	13
Vocational training	16	0

² Elementary level in Lebanese public school system consists of grades 1-3 (cycle 2) and grades 4-6 (cycle 3). While grade 7 is intermediate level, small number of 7th graders ($n = 102$) participated in the retention support programs and the study.

ASER* Arabic reading level	3,537	
0	859	24
1	986	28
2	546	15
3	492	14
4	654	18
ASER second language level	3,537	
0	1,563	44
1	1,152	33
2	480	14
3	265	7
4	77	2
ASER mathematics level	3,537	
0	1,048	30
1	776	22
2	744	21
3	530	15
4	439	12

*An Arabic version of the Annual Status of Education Report (ASER; Pratham, 2013) was used by the IRC to assign Syrian refugee children to “emerging” and “developing” levels of retention support programming.

SERAIS measure assembly

As described above, SERAIS was constructed based on formats (e.g., scenario-based) and items used in prior studies and adapted for the Syrian refugee context in Lebanon (see Appendix 1, Table 1 for item-construct map). Specifically, SERAIS includes adapted versions of three of the social situation scenarios originally used in Children’s Stories (Dodge et al., 2015). These scenarios were selected as relatively less likely to be emotionally charged or more ambiguous (Stories 2, 4, 5 in the current measures) than other scenarios in Children’s Stories. Three additional hypothetical scenarios focusing on social situations that involve violations of social rules (e.g., turn-taking: Story 3) or relational aggression (e.g., social exclusion: Stories 1, 6) were also developed for SERAIS. This selection, adaption, and addition of scenarios were based on the feedback during the pilot study and testing in the SY2016-2017, suggesting that some scenarios were too threatening or high-risk (e.g., causing physical harm) to be interpreted as ambiguous situations. In addition, the original Children’s Stories were designed to match the gender of the actors of the scenarios to the gender of the child. However, given concerns about differential response patterns by gender due to the salience of gender roles and stereotypes in Syrian refugee population, as well as to minimize cognitive burden and potential confusion by the enumerator during assessment in the field, we used gender neutral terms to refer to protagonists in all scenarios regardless of the gender of the children being assessed.

For each of the six social situation scenarios, SERAIS includes questions on hostile attribution bias, emotional orientation, emotion dysregulation, and interpersonal negotiation strategies in the social situation provided. Specifically, children were asked why the provocateur in the social situation acted the way s/he did (*hostile attribution bias*: did the child act that way on purpose or by accident; 0 = no or 1 = yes); how they would feel (*emotion orientation*: how angry, sad, and calm they would feel; 5-point Likert scale 1 = not at all to 5 = very angry/sad/calm), and if they would display certain emotional reactions (*emotion dysregulation*: whine or cry? angrily yell or stomp your feet?). For each scenario, they were also asked seven items about how they would possibly respond in that situation, reflecting INS levels 0 to 2, both other- and self-transforming strategies (see Table 2, above). These seven items were designed to capture a range of contextually and developmentally appropriate possible responses. Both emotion dysregulation and INS questions were originally coded on a 3-point scale (0= no; 1= maybe; 2=yes); however, due to the extremely low response rate for the “maybe” category (0.92% - 5.91%), these items were recoded as dichotomous (0= no and 1 = yes/maybe).

Analytic plan

All descriptive, bivariate correlation, and reliability analyses were conducted using Stata SE version 15.1 and all factor analysis were conducted using Mplus 8.3 (Muthén & Muthén, 2014). In all factor-analysis models, missing data at the item level were pairwise deleted (i.e., all available information was used from all cases) to preserve the full sample (Asparouhov & Muthén, 2010). As a result, we were able to include and obtain factor scores for all children who were ever assessed on SERAIS in the analysis regardless of missing information on specific items.

Research aim 1. We present item-level descriptive information for each of the 13 hypothesized constructs of SERAIS.

Research aim 2. We identify and confirm the factor structure of SERAIS by conducting exploratory and confirmatory factor analyses (EFA and CFAs) at each timepoint (baseline and endline). In order to account for structural characteristics of the data, two important specifications were made. First, given item response options in the measure, items were specified as categorical. Because modeling categorical responses as normally and continuously distributed can lead to inflation of model fit statistics and biased estimation of factor loadings and standard errors, we used a weighted least squares mean and variance-adjusted (WLSMV) estimator with a probit-link function (Beauducel & Herzberg, 2006; Lei, 2009). Second, as described above, students in this sample were nested in classrooms, thereby violating the assumption of independence of standard errors required in the application of factor analytic techniques (Hwang, 2016). We thus used robust standard errors adjusted for clustering at the classroom level in our measurement analysis.

At each timepoint, we randomly divided our sample in half in order to create exploratory and confirmatory samples. Exploratory samples were used to examine multiple versions of data-driven models, of which a final proposed solution was selected based on conceptual and empirical considerations. Confirmatory samples were used to test the proposed factor structure, thereby builds confidence in the stability of empirically derived exploratory factor analytic estimates (Osborn & Fitzpatrick, 2012).

To assess the goodness of fit of the models, the following two criteria were used (Hu & Bentler, 1999): (a) a root mean squared error of approximation (RMSEA) value below 0.08 provides an acceptable fit to the data, while an RMSEA of less than 0.06 provides a good fit to the data; and (b) a comparative fit index (CFI)/Tucker Lewis index (TLI) value above 0.9 provides an acceptable fit to the data while a CFI/TLI value above 0.95 provides a good fit to the data (Kline, 2011); and a standardized root mean square residual (SRMR) below 0.08 provides a good fit to the data.

Due to the sensitivity of the chi-square statistic to large sample size, chi-square statistics were not considered in evaluating model fit but are reported.

Research aim 3. Measurement invariance refers to the extent to which a set of items measures an underlying construct of interest in the same way across groups or time (Reise, Widaman, & Pugh, 1993). If measures of social-emotional skills operate differently across treatment and control groups in an impact evaluation, for example, then one should not compare group differences on scores of such skills to assess program impact (Glanville & Wildhagen, 2007). In this study, we tested for measurement invariance in two ways: (1) across treatment and control condition within each timepoint; and (2) longitudinal invariance at baseline and endline to establish equivalence of the measured construct across treatment group and confirm interpretation of growth estimates.

We tested for levels of measurement invariance by fitting a series of nested models in which we progressively constrained the model parameters to equality across groups/timepoints. Specifically, we fit models within each timepoint and then across timepoints to test the equality of: 1) the factor structure in treatment and control groups and timepoints (*configural invariance*); 2) the factor loadings across groups/timepoints (*metric invariance*); and 3) the item intercepts or thresholds across groups/timepoints (*scalar invariance*) (Millsap, 2012; Gregorich, 2006). We assessed the relative fit of each of these models against the configural model using criteria suggested by Chen (2007; metric invariance: $\Delta CFI < 0.01$; $\Delta RMSEA < 0.015$ $\Delta SRMR < 0.030$; scalar invariance: $\Delta CFI < 0.01$, $\Delta RMSEA < 0.015$, $\Delta SRMR < 0.010$) If the imposition of equality constraints did not provide a significant decrement of model fit, we concluded that the hypothesis of invariance was supported.

Research aim 4. We extracted refined factor scores from the final longitudinal invariance model of SERAIS and used them to calculate concurrent and longitudinal correlations among empirically derived SERAIS subscales. Given that this was the first time this measure was tested with this population, we didn't have *a priori* expectations about the pattern of correlations; rather, we treated this aim as exploratory.

Research aim 5. In order to examine the internal consistency reliability of the empirically derived subscales of the final invariant model, we calculated Cronbach's alpha (Cronbach & Shavelson, 2004).

Results

Aim 1: Descriptive statistics

Baseline and endline item descriptive statistics are presented in Table 2 of Appendix 1, organized by the 13 constructs which they are intended to assess.

On average at baseline, more than half Syrian refugee children in our sample interpreted provocation by peers to be intentional and hostile. Over 70% of children made hostile attributions in the social situations in which the social rules of turn-taking for a resource are violated (Stories 3 and 4) and when the provocation affected the child physically (Story 5). In contrast, in response to social exclusion stories (Stories 1 and 6) and a story where the product of hard work was destroyed (Story 2), children reported lower levels of hostile attributions, ranging 46% to 57%.

Across all six potentially hostile social situations, Syrian refugee children reported on average that they would feel low to medium levels of anger ($M=2.67-3.25$) and sadness ($M=2.60-2.97$) and a moderate degree of calm feelings ($M = 3.35-3.77$). However, when asked about how they would *show* their emotions, very few children responded they would show their anger by yelling or stomping their feet (4-7%); slightly more – but still a small number of children – responded they would show their sadness by crying or whining (9-19%).

Of the interpersonal negotiation strategies items, Syrian refugee children endorsed the physical ($M=4-13\%$) and verbal ($M=5-8\%$) aggression strategies the least. Children moderately to highly endorsed ignoring/fleeing response ($M=44-75\%$) and demanding resolutions/fair outcomes on most stories ($M=41-69\%$); however, they endorsed demanding resolution/fair outcomes strategies at a higher level ($M=75-82\%$) in the resource turn-taking violation scenarios (Stories 3 and 4). Interestingly, children were less likely to endorse appealing to authority (e.g., telling teachers) in the social exclusion scenarios (Stories 1 and 6; $M = 23\%-37\%$) than they would in other stories ($M = 45\%-57\%$). Lastly, a majority of children endorsed the most mature interpersonal strategies, asking for reasons ($M=54-71\%$) and communicating their perspectives ($M= 64-91\%$).

Aim 2: Construct validity

Hypothesized model. As described above, SERAIS is designed to capture 13 distinct constructs measured across 6 vignettes. Therefore, a bi-factor model was hypothesized to represent the data, with 13 main “construct” factors consisting of 6 items each (1 item from each vignette) and 6 method factors representing common residual variance due to shared vignettes. We report the results of tests of this hypothesized model in Appendix 2. Due to estimation issues and high correlations between the hypothesized constructs, we conducted an empirically-based exploration of the factor structure to identify a contextually- and culturally-grounded model.

Exploratory factor analysis. Using a random half sample of the data, an EFA was conducted. While the SERAIS measure design would be best reflected in a bi-factor model structure, the bi-factor EFA does not allow for more than one methods factor; therefore a bi-factor EFA model was not tested. Using baseline data, the scree plot suggested a 4- or 7-factor model (if we look for elbows), while eigenvalue > 2 cut-off criteria suggested an 8-factor model (Costello & Osborne, 2005). When the factor structure was examined at the item level, a 7-factor structure emerged consistent across various factor specifications:

Figure 1. *SERAIS EFA scree plot*

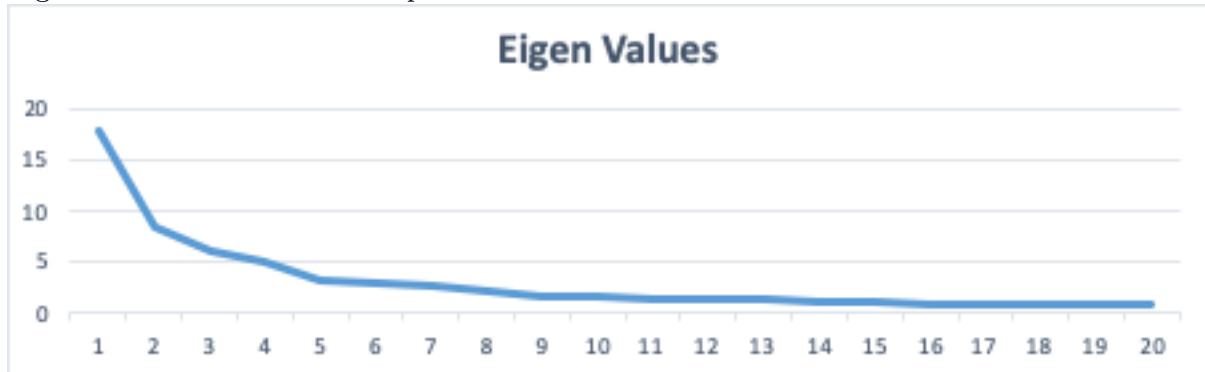


Table 4. *SERAIS EFA empirically derived factors and constructs*

Factor	Construct	Factor abbreviation
1	Hostile attribution bias items	AB
2	Negative emotional orientation (anger and sadness) items	NA
3	Calm emotional orientation items	CE
4	Negative emotional dysregulation (anger and sadness) items	ED
5	Negotiation strategies: Physical and verbal aggression items	AG

6	Negotiation strategies: Appeal to authority items	TT
7	Negotiation strategies: Resolution-oriented (disengage, command, ask for reasons, and influence/give reasons) items	CR

Confirmatory factor analysis. Based on these results, bi-factor CFA models with the seven main factors identified through the EFA and six methods factors representing the six vignettes were tested with the other random halves of the baseline and endline sample. At both baseline and endline, the confirmatory bi-factor models had good model fit, with CFI and TLI = 0.95, RMSEA < 0.06, and SRMR < 0.08 at both time points (Table 5).

Table 5. *CFA model fit statistics*

Timepoint	Parameters	chi2	df	p	CFI	TLI	RMSEA	SRMR
Baseline	309	4547.767	2826	0	0.949	0.945	0.019	0.077
Endline	309	4483.427	2826	0	0.95	0.947	0.019	0.079

Table 6 below presents the standardized factor loadings of items to their main factors within the baseline and endline models. All items showed moderate to high (>.40) factor loadings to their main factor, with an exception of the disengagement item for story 1 (CS1_IG) at both waves and the communicate perspective item for story 1 (CS1_CM) at endline. For the sake of consistency of the item structure across the vignettes, and because the overall model had an acceptable model fit, the item was maintained for further analysis. (Factor loadings to the methods factors are omitted here and available upon request).

Table 6. *CFA standardized factor loadings*

Factor	Item	Baseline			Endline		
		Estimate	SE	p	Estimate	SE	p
Hostile attribution bias	CS1_AB	0.568	0.035	0.00	0.597	0.039	0.00
	CS2_AB	0.577	0.039	0.00	0.556	0.036	0.00
	CS3_AB	0.785	0.030	0.00	0.809	0.035	0.00
	CS4_AB	0.850	0.031	0.00	0.799	0.034	0.00
	CS5_AB	0.757	0.031	0.00	0.704	0.032	0.00
	CS6_AB	0.663	0.034	0.00	0.662	0.034	0.00
Negative emotional orientation	CS1_AE	0.576	0.02	0.00	0.612	0.02	0.00
	CS2_AE	0.718	0.016	0.00	0.718	0.017	0.00
	CS3_AE	0.786	0.015	0.00	0.743	0.017	0.00
	CS4_AE	0.808	0.013	0.00	0.786	0.014	0.00
	CS5_AE	0.777	0.015	0.00	0.772	0.014	0.00
	CS6_AE	0.744	0.016	0.00	0.773	0.015	0.00
	CS1_SE	0.590	0.022	0.00	0.613	0.019	0.00
	CS2_SE	0.685	0.017	0.00	0.684	0.016	0.00
	CS3_SE	0.710	0.018	0.00	0.712	0.015	0.00

	CS4_SE	0.746	0.015	0.00	0.750	0.013	0.00
	CS5_SE	0.734	0.014	0.00	0.750	0.014	0.00
	CS6_SE	0.669	0.018	0.00	0.719	0.015	0.00
Calm emotional orientation	CS1_CE	0.600	0.025	0.00	0.650	0.022	0.00
	CS2_CE	0.698	0.019	0.00	0.737	0.015	0.00
	CS3_CE	0.768	0.018	0.00	0.791	0.014	0.00
	CS4_CE	0.831	0.016	0.00	0.803	0.014	0.00
	CS5_CE	0.777	0.017	0.00	0.797	0.014	0.00
	CS6_CE	0.767	0.017	0.00	0.778	0.016	0.00
Negative emotional dysregulation	CS1_SD	0.659	0.030	0.00	0.642	0.033	0.00
	CS2_SD	0.801	0.023	0.00	0.808	0.025	0.00
	CS3_SD	0.896	0.017	0.00	0.857	0.021	0.00
	CS4_SD	0.902	0.019	0.00	0.883	0.020	0.00
	CS5_SD	0.879	0.018	0.00	0.875	0.021	0.00
	CS6_SD	0.912	0.018	0.00	0.871	0.025	0.00
	CS1_AD	0.691	0.042	0.00	0.725	0.038	0.00
	CS2_AD	0.804	0.030	0.00	0.878	0.026	0.00
	CS3_AD	0.817	0.030	0.00	0.897	0.022	0.00
	CS4_AD	0.914	0.019	0.00	0.877	0.027	0.00
	CS5_AD	0.888	0.021	0.00	0.861	0.031	0.00
	CS6_AD	0.898	0.022	0.00	0.864	0.028	0.00
Appeal to authority	CS1_TT	0.570	0.032	0.00	0.551	0.035	0.00
	CS2_TT	0.754	0.024	0.00	0.788	0.024	0.00
	CS3_TT	0.829	0.022	0.00	0.849	0.022	0.00
	CS4_TT	0.856	0.021	0.00	0.899	0.018	0.00
	CS5_TT	0.868	0.018	0.00	0.854	0.021	0.00
	CS6_TT	0.772	0.023	0.00	0.746	0.029	0.00
Aggression	CS1_VA	0.692	0.04	0.00	0.692	0.047	0.00
	CS2_VA	0.818	0.035	0.00	0.681	0.042	0.00
	CS3_VA	0.791	0.030	0.00	0.799	0.035	0.00
	CS4_VA	0.840	0.030	0.00	0.829	0.035	0.00
	CS5_VA	0.887	0.025	0.00	0.782	0.035	0.00
	CS6_VA	0.823	0.030	0.00	0.830	0.036	0.00
	CS1_PA	0.657	0.054	0.00	0.730	0.047	0.00
	CS2_PA	0.702	0.042	0.00	0.764	0.047	0.00
	CS3_PA	0.831	0.029	0.00	0.734	0.048	0.00
	CS4_PA	0.794	0.033	0.00	0.768	0.035	0.00
	CS5_PA	0.780	0.031	0.00	0.737	0.036	0.00
	CS6_PA	0.785	0.034	0.00	0.793	0.036	0.00
Resolution-oriented	CS1_RS	0.534	0.030	0.00	0.677	0.021	0.00
	CS2_RS	0.735	0.022	0.00	0.795	0.018	0.00
	CS3_RS	0.785	0.019	0.00	0.821	0.019	0.00

	CS4_RS	0.822	0.017	0.00	0.860	0.016	0.00
	CS5_RS	0.788	0.022	0.00	0.820	0.019	0.00
	CS6_RS	0.767	0.019	0.00	0.811	0.018	0.00
	CS1_IG	0.221	0.036	0.00	0.339	0.041	0.00
	CS2_IG	0.404	0.035	0.00	0.436	0.035	0.00
	CS3_IG	0.528	0.029	0.00	0.487	0.037	0.00
	CS4_IG	0.592	0.023	0.00	0.631	0.024	0.00
	CS5_IG	0.529	0.030	0.00	0.490	0.030	0.00
	CS6_IG	0.625	0.028	0.00	0.655	0.023	0.00
	CS1_CM	0.411	0.046	0.00	0.497	0.043	0.00
	CS2_CM	0.602	0.028	0.00	0.645	0.025	0.00
	CS3_CM	0.655	0.033	0.00	0.688	0.033	0.00
	CS4_CM	0.749	0.025	0.00	0.794	0.027	0.00
	CS5_CM	0.748	0.022	0.00	0.723	0.025	0.00
	CS6_CM	0.624	0.033	0.00	0.634	0.038	0.00
	CS1_PR	0.402	0.031	0.00	0.372	0.032	0.00
	CS2_PR	0.457	0.029	0.00	0.480	0.028	0.00
	CS3_PR	0.730	0.026	0.00	0.788	0.027	0.00
	CS4_PR	0.703	0.026	0.00	0.813	0.023	0.00
	CS5_PR	0.588	0.027	0.00	0.615	0.028	0.00
	CS6_PR	0.685	0.026	0.00	0.620	0.030	0.00

Item key:

CS[number]	The story the questions are asked about	VA	Verbal aggression
AB	Hostile attribution bias	PA	Physical aggression
AE	Emotional orientation: Anger	IG	Disengagement from the conflict (Ignoring)
SE	Emotional orientation: Sadness	TT	Appeal to authority
CE	Emotional orientation: Calmness	PR	Demanding resolutions and fair outcome in the situation
AD	Emotional dysregulation: Anger	RS	Ask reasons
SD	Emotional dysregulation: Sadness	CM	Communication of his/her own perspectives

Aim 3: Measurement invariance

Treatment invariance. Using the final, empirically derived CFA model discussed above, we tested measurement invariance across treatment and control groups. Both baseline and endline models were scalar invariant, suggesting that across treatment and control groups the measure has the same factor structure, the same factor loadings across all items, and the same thresholds for each item response category within each item (see Appendix 2, Table 2). Specifically, the configural model constraining the factor structure to be the same across the treatment conditions showed acceptable fit at both baseline and endline, CFI ≥ 0.95 , RMSEA < 0.06 , and SRMR < 0.08 . Metric and scalar models, in which the factor loadings and item thresholds were constrained to be the same across treatment conditions, fit the data as well as the configural model with little difference in model fit over and above the prior model. This means that there was no significant difference in the item and measure functioning across treatment and control groups, and the model can be used to directly

compare treatment impacts on these constructs as assessed using the empirically derived SERAIS scales.

Longitudinal invariance. Using the final, empirically derived CFA model discussed above, we tested measurement invariance across timepoints. We found that the longitudinal invariance model comparing the baseline and endline measurement models was scalar invariant, suggesting that at baseline and endline the measure has the same factor structure, the same factor loadings across all items, and the same thresholds for each item response category within each item (see Appendix 2, Table 3). Specifically, the configural model constraining the factor structure to be the same across the timepoints showed acceptable fit at both baseline and endline, CFI $\geq .95$, RMSEA $< .06$, and SRMR $< .08$. Metric and scalar models, in which the factor loadings and item thresholds were constrained to be the same across treatment conditions, fit the data as well as the configural model with little difference in model fit over and above the prior model. This means that there was no significant difference in the item and measure functioning across timepoints, and the model can be used to directly assess growth from baseline to endline on these constructs as assessed using the empirically derived SERAIS scales.

Aim 4: Correlational patterns

Factor scores were calculated from the longitudinal scalar invariance model fit in Aim 3. Distributions of the factor scores for each of the empirically derived subscales were generally normal and symmetric, with a few exceptions. The aggression and negative emotional dysregulation subscales at both timepoints were moderately positively skewed, which can signal a floor effect.

Correlations between constructs. Factor score correlations among the main social cognitive, emotional, and interpersonal negotiation strategy constructs are presented in Table 7, below.

At both baseline and endline, Syrian refugee children who attributed hostile intent to provocateurs in social situations reported that they would feel higher levels of anger and sadness (*negative emotional orientation*) in these situations and lower levels of calmness (*calm emotional orientation*; reverse coded such that higher scores indicate less feelings of calm). Children's hostile attribution of intent in social situations was also significantly associated with report that they would respond with dysregulated anger and sadness behaviors. Syrian refugee children who attributed hostile intent in social situations reported that they would try to negotiate conflict by appealing to authority and using resolution-oriented strategies, such as asking for reasons, communicating his/her perspective, demanding resolution, and disengagement. Less consistent with research from WEIRD contexts, at baseline, hostile attribution bias was not correlated with report of the use of aggressive

response strategies to resolve social conflict; at endline, hostile attribution bias had a low but positive correlation with aggressive interpersonal negotiation strategies.

Syrian refugee children who reported higher levels of calmness in the social situations reported lower levels of anger and sadness in those situations; less emotionally dysregulated responses, and less use of any type of interpersonal negotiation strategy. Finally, children who responded they would appeal to authority (teachers) in the face of social conflict were more likely to report emotionally dysregulated responses and aggressive resolution strategies in social situations. However, at the same time, they were more likely to engage in resolution-oriented strategies. Overall, resolution-oriented strategies had positive but low correlations with negative emotional orientation, emotional dysregulation, and aggressive interpersonal negotiations strategies, while having stronger correlations with appeal to authority interpersonal negotiation strategies.

Longitudinal stability. Longitudinal stability of the constructs measured by SERAIS was assessed by examining bivariate associations (Pearson correlations) using the factor scores obtained from the longitudinal scalar invariance model (see Table 7). Bivariate correlations across time for the factor scores representing the same constructs were positively correlated at a moderate to high level between baseline and endline, $r = .29-.70$. Model-based partial correlations in the longitudinal scalar invariance model showed similar patterns (see Appendix 2, Table 4). The same constructs were moderately correlated across time, $r = .24-.58$, after accounting for the correlations with other constructs within and across time. Taken together, this suggests relative stability of children's skills, as measured by SERAIS.

Correlations with age and gender. We examined bivariate correlations between SERAIS constructs and children's gender and age using baseline factor scores of each construct derived from the longitudinal scalar invariance model (Table 8). Gender differences on SERAIS constructs were not prominent, with very small correlation coefficients despite some significant associations. Girls were more likely to report higher levels of negative emotional orientation and emotion dysregulation than boys, while less likely to use interpersonal negotiation strategies that resort to appealing to authority and aggression. Older children were more likely to report making hostile attributions and feeling angry or sad in social situations, but also more likely to report the use of resolution-oriented strategies. Older children were less likely to report feeling calm in social situations, and less likely to report that they would appeal to authority and or respond aggressively to resolve interpersonal conflict.

Aim 5: Reliability

Table 9 presents Cronbach's alpha estimates for scores from the empirically derived SERAIS subscales. All subscales obtained in the factor analysis showed acceptable internal consistency.

Table 7. *Bivariate correlations among SERAIS factor scores at baseline (T1) and endline (T2)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Hostile Attribution Bias T1	-													
2 Negative Emotional Orientation T1	0.42***	-												
3 Calm Emotional Orientation (Reverse coded) T1	0.13***	0.40***	-											
4 Emotional Dysregulation T1	0.25***	0.49***	0.30***	-										
5 INS: Appeal to Authority T1	0.23***	0.32***	0.21***	0.45***	-									
6 INS: Aggression T1	0.00	0.26***	0.26***	0.55***	0.57***	-								
7 INS: Resolution-oriented Strategies T1	0.25***	0.38***	0.23***	0.45***	0.63***	0.38***	-							
8 Hostile Attribution Bias T2	0.70***	0.31***	0.13***	0.21***	0.22***	0.08***	0.23***	-						
9 Negative Emotional Orientation T2	0.28***	0.40***	0.20***	0.32***	0.19***	0.16***	0.22***	0.44***	-					
10 Calm Emotional Orientation (Reverse coded) T2	0.10***	0.20***	0.29***	0.16***	0.04*	0.04**	0.19***	0.12***	0.38***	-				
11 Emotional Dysregulation T2	0.19***	0.37***	0.18***	0.57***	0.30***	0.37***	0.22***	0.26***	0.54***	0.23***	-			
12 INS: Appeal to Authority T2	0.21***	0.21***	0.12***	0.30***	0.54***	0.30***	0.30***	0.36***	0.43***	0.17***	0.55***	-		
13 INS: Aggression T2	0.08***	0.21***	0.17***	0.38***	0.35***	0.58***	0.14***	0.12***	0.36***	0.21***	0.62***	0.62***	-	
14 INS: Resolution-oriented Strategies T2	0.17***	0.20***	0.13***	0.15***	0.27***	0.07***	0.45***	0.31***	0.39***	0.15***	0.40***	0.64***	0.34***	-

Note. Correlations among SERAIS constructs at baseline are shaded in blue; correlations among SERAIS constructs at endline are shaded in yellow. Correlations between the same construct at baseline and endline are shaded in grey. To prevent convergence issues and reduce the complexity of model estimation, calm emotional orientation items were reverse coded, and the estimates for the calm emotion orientation should be interpreted accordingly.

Table 8. *Bivariate correlations among SERAIS constructs, age, and gender at baseline*

	1	2	3	4	5	6	7	8	9
1 Hostile Attribution Bias	1.00								
2 Negative Emotional Orientation	0.42***	1.00							
3 Calm Emotional Orientation (reversed)	0.13***	0.40***	1.00						
4 Emotional Dysregulation	0.25***	0.49***	0.30***	1.00					
5 INS: Appeal to Authority	0.23***	0.32***	0.21***	0.45***	1.00				
6 INS: Aggression	0.00	0.26***	0.26***	0.55***	0.57***	1.00			
7 INS: Resolution-oriented strategies	0.25***	0.38***	0.23***	0.45***	0.63***	0.38***	1.00		
8 Female	0.03	0.05**	0.01	0.08***	-0.04*	-0.06***	0.02	1.00	
9 Age	0.09***	0.14***	0.12***	0.04*	-0.08***	-0.08***	0.16***	-0.01	1.00

Table 9. *Cronbach's alpha estimates of SERAIS subscales*

	Baseline	Endline
Hostile Attribution Bias	0.72	0.70
Negative Emotional Orientation	0.90	0.90
Calm Emotional Orientation	0.82	0.83
Emotional Dysregulation	0.87	0.87
INS: Aggression	0.84	0.79
INS: Appeal to Authority	0.81	0.80
INS: Resolution-Oriented Strategies	0.87	0.88

Discussion

In this report, we sought to provide evidence on whether data from the SERAIS instrument can provide valid and reliable information about Syrian refugee children's cognitive, social, and emotional skills in negotiating potentially challenging social situations for program evaluation purposes in Lebanon. Overall, we conclude that there is promising evidence to support the interpretation of scores as assessing key developmental mechanisms that we hypothesized to be important to understanding the impact of the IRC's 5-component SEL programming on Syrian refugee children's holistic learning outcomes in Lebanon. There is also robust evidence that scores provide meaningful and comparable information across time and across treatment groups, and that scores within each sub-domain are internally consistent. At the same time, we identified several patterns of results that are contrary to theory and empirical evidence about how these developmental mechanisms would operate in WEIRD contexts. We summarize the key findings and convergences and divergences with prior theory and evidence below.

Evidence on the psychometric properties of this version of SERAIS support its use as an outcome measure in rigorous program evaluation studies and in descriptive research with Syrian refugee children in Lebanon. As highlighted in the introduction and described more fully on the MENAT Measurement Library site, the purpose for which an assessment will be used then determines the psychometric properties and criteria the measure must demonstrate and meet. We note here two key psychometric properties of measures used in rigorous program evaluation efforts. First, data from measures used in impact evaluations must contain minimal measurement error; that is, measures must have strong evidence of reliability. Unreliable outcome measures reduce statistical power to detect program impacts, downwardly biasing or attenuating effect size estimates; this can lead to erroneous conclusions about the efficacy of an intervention (Halpin & Torrente, 2014; Raudenbush & Sadoff, 2008; Sutcliffe, 1958). Second, outcome measures used in impact evaluation studies should have evidence that they are measuring the same construct (e.g., emotional dysregulation) in treatment and control groups in order to ensure that impact estimates represent meaningful differences in emotional dysregulation between those with access to the intervention and those without (Millsap, 2012). Such measurement invariance is also important to establish across time points in order to make inferences about the extent to which children's skills change over time. In this report, we provide evidence that SERAIS assesses key developmental mechanisms reliably. We also provide evidence that a consistent factor structure can be identified across treatment groups and across time, enabling the comparison of mean differences between treatment and control groups and timepoints critical for estimating the impact of programming on *change in* skills.

Evidence from factor and correlational analyses with SERAIS supports the importance of developing measures based on theory. SERAIS was developed in part

to bring together the assessment of cognitive, social, and emotional skills that theory and research have suggested are highly inter-related (Jones & Bouffard, 2012) but that in practice have often been treated as operating in isolation. Specifically, there are extensive and separate bodies of literature in WEIRD contexts on how more cognitive, attributional processes (Crick & Dodge, 1994; Dodge et al., 2015) and on how emotionality and emotional regulation shape children's responses in social situations (Eisenberg et al., 2010), with little consideration of how these processes transact to shape a diversity of behaviors in social situations as children develop over time – let alone in non-WEIRD contexts (Lemerise & Arsenio, 2000; Yeates et al., 1991). Integrating these bodies of literature to guide measure development efforts affords the opportunity to pose and answer key questions about children's development from a more holistic perspective. Indeed, factor analyses conducted with SERAIS supports the notion that broader cognitive (e.g., hostile attribution), emotional (e.g., emotional orientation and emotional dysregulation), and social-behavioral (e.g., interpersonal negotiation strategies) constructs can be uniquely identified – and are moderately interrelated.

Evidence from factor and correlational analyses with SERAIS also supports the importance of being open to revising theory based on new evidence. At the outset, we were committed to learning from the empirical evidence generated using SERAIS given (i) the limited evidence on the associations between the skills assessed by SERAIS globally; (ii) the lack of prior use of this measure in the Syrian refugee in Lebanon context; and (iii) the dearth of evidence on the development of such skills in the Syrian refugee in Lebanon context. As expected, the results do raise questions and new directions for research and learning, which we touch on just briefly in this discussion section:

What is the relationship between feeling and expressing different negative emotions? In WEIRD contexts, research has suggested that the processes involved in identifying and regulating different negative emotions (e.g., anger, sadness) are different, and in turn may be associated with a different constellation of psychological outcomes (e.g., Di Giunta et al., 2017; Eisenberg et al., 2010; Feng et al., 2009; Morris et al., 2011; Zeman, Shipman, & Suveg, 2002). In our factor analyses of SERAIS data, however, anger and sadness loaded together in both identifying and orienting to emotions in social situations and regulating the expression of those emotions. Said otherwise, if Syrian refugee children in our sample said they would feel mad in a situation, they were more likely to report that they would feel sad as well; if Syrian refugee children in our sample said they would respond in social situations by stomping their feet or yelling, they were also more likely to say they would respond by crying or whining.

There are several plausible developmental, contextual, and structural explanations for such a pattern. First, it is possible that children in our sample were at a developmental stage (mean age of 9.38) where they have not yet refined the skills of distinguishing socially-acceptable

situation-appropriate emotions, or have not yet fully established personal situation-specific schema of emotional experiences. Future research can examine this hypothesis by examining the factor structure of SERAIS across different age groups. Second, it is possible that the words and descriptors for anger and sadness are not well distinguished in the Arabic translation of the measure, or alternately, that such emotions are typically experienced, identified, and regulated together in the Syrian refugee context. Finally, it is possible that the correlations are an artifact of the measure format and reflect differential item response patterns.

What are more mature or “higher-order” interpersonal negotiation strategies to resolve conflictual social situations? As discussed in the introduction, interpersonal negotiation strategies are the goal-directed responses and behaviors that may be enacted to negotiate or resolve interpersonal conflict situations (Selman et al., 1986; Yeates & Selman, 1989). As children mature across biological, cognitive, social, and emotional domains, it is hypothesized that they have access to and the ability to enact more complex INS that take into account the perspectives of multiple participants (Leadbeater et al., 1989). Typically, aggressive and disengagement strategies have been considered “lower-order” strategies that involve impulsive, fight-or-flight response tendencies fail to take account for the perspectives of others.

In our factor analyses of SERAIS data, however, we did not find strong evidence to support the hypothesized clusters of interpersonal negotiation skills. In particular, in our sample disengagement-oriented resolution strategies tended to cluster with medium and higher-order resolution strategies that involve communication with the child protagonist in the story (i.e., demanding resolution or a fair outcome, asking for reasons, telling how you feel). One plausible interpretation of this finding is that both communication with and disengagement from peers involve the direct application of self-regulation skills within the social situation, indicative of more complex developmental processes. Correlational evidence supports this interpretation: Age was positively correlated with such resolution-oriented strategies and negatively correlated with aggressive and appeal to authority strategies. While more investigation is warranted, it suggests that structural-developmental models of interpersonal negotiation skills may benefit from incorporation of self-regulatory perspectives on development.

What is the relationship between encoding and interpreting information as hostilely intended and emotional and conflict resolution strategies, particularly in conflict and crisis settings? Across diverse contexts, a robust evidence base has shown that children’s hostile attribution bias predicts aggressive responses and chronic aggression problems. For example, the “Parenting Across Cultures” study examined social-information processing and aggression in 12 different social-ecological contexts in nine countries around the world, including Kenya, Jordan, Italy, Thailand, the United States, China, Colombia, the

Philippines, and Sweden. In each context, children's habitual pattern of responding with hostility to an ambiguous social provocation (such as cutting in line) predicted their stated intention to respond aggressively in that situation (Dodge et al., 2015).

Model-based partial correlational analyses with SERAIS data, however, indicated that in our sample hostile attribution bias was not correlated with aggressive response tendencies at baseline and only very modestly correlated with aggressive response tendencies at endline. It was, however, significantly correlated with other interpersonal negotiation strategies at both timepoints, including appealing to authority and resolution-oriented strategies. This pattern of findings does not match that predicted by social information processing models, for which we offer several possible explanations. First, measures examining linkages between hostile attributions and various response strategies in conflictual social situation have tended to provide a limited set (2-3) response options, one of which is an aggressive response and the others of which lack options that allow children to directly address the social conflict itself. Drawing on interpersonal negotiation strategy models, SERAIS provided 7 possible responses to each hypothetical social situation, potentially providing a more valid representation of the repertoire of responses available to children. Alternately, it is possible that given the array of response options, children recognized and selected the "best" response, a form of social desirability bias. Second, although children who interpreted provocateurs in social situations as having hostile intent were more likely to report feeling angry/sad in those social situations and to respond with emotionally dysregulated behaviors, they were more likely to appeal to authority and use resolution-oriented strategies to negotiate social situations. It is possible, then, that arousal and even some expression of negative emotion is not necessarily maladaptive in this context; it may serve to propel action and responses of many different forms. Third, and relatedly, it is possible that in contexts in which children experience high levels of hostility across multiple settings (e.g., victimization from peers and teachers in public schools, family conflict, war experiences), hostile attribution bias may be less of a bias but a reality of children's daily experiences. Children then learn how to interpret and respond to such hostility based on the norms, opportunities, and constraints in their immediate environments.

We emphasize that our questions and interpretations are not exhaustive and only speculative at this juncture; they require interrogation using more in-depth empirical analysis with other sources of data. Nonetheless, we hope they can serve as a hypothesis-generating departure point both for understanding the development of Syrian refugee children in context and in understanding how to best provide programming that supports children's holistic development in such contexts.

Limitations, Revisions, and Next Steps

We note several limitations to the current measure and data analyses described herein. First, we emphasize that our sample represents the universe of Syrian refugee children enrolled in Lebanese formal schools with access to IRC non-formal programming in the Bekaa and Akkar regions of Lebanon. These children may differ significantly from Syrian refugee children who are not enrolled in Lebanese formal schools and/or from Syrian refugee children in other regions of Lebanon. Because this was not a population-based sample of Syrian refugee children in Lebanon, findings and interpretations should not be extrapolated and applied beyond the sample described herein, and use of this measure in another setting with a different population will require careful adaptation and validation process. Second, the measure was developed and piloted on a tight timeline, in order to meet the deadline for baseline data collection for an impact evaluation. While every effort was made to ensure the conceptual and linguistic understanding and appropriateness of the measure in Modern Standard Arabic, we strongly encourage future users of the measure to review the translation carefully, particularly of the emotion-related words.

Finally, we recognize that the format of the measure – in which children are read a series of 6 vignettes and respond after each to 13 statements about what they would feel and do in a social situation – can be tedious to administer and respond to, while also requiring time and resources that may not be available in crisis contexts. We chose to administer the measure in this format, however, to reflect the wider spectrum of the social repertoire available for children and given the need to ensure the reliability of responses for program evaluation purposes. While it may be possible to shorten the measure – either by reducing the number of vignettes or by training enumerators to code responses to broader questions about how children would feel or respond – each poses additional risks for the internal consistency and interrater reliability of the data, especially lacking sufficient time for piloting and enumerator training. As noted above, in the context of experimental evaluations of programs, such a risk can lead to under-powered inferences and attenuated effect sizes, which is also a misuse of the few resources available for impact evaluations of education programs in crisis contexts. Nonetheless, we hope that others will continue to refine and adapt the measure to promote usability while retaining psychometric rigor.

We ourselves will continue to iterate on and refine SERAIS. To do so, we will further investigate the hypotheses raised above about how social, emotional, and cognitive processes transact to shape Syrian refugee children's responses in social situations using additional data collected as part of the SY2016-2018 impact evaluations. In so doing, we hope to better understand what are adaptive responses for Syrian refugee children in Lebanon – and how programs can best support them.

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Appendix 1: SERAIS Measure Description and Descriptives

Table 1. *Measure item-construct map*

Constructs		Story 1	Story 2	Story 3
Social Situation		Imagine today is your first day at school. You are sitting next to a child you would like to become friends with. But this child is chatting with someone else and is not talking with you. You are trying to talk to the child but the child does not even look at you.	Imagine that you have finished a beautiful drawing for school. You've worked on it for a long time and you're really proud of it. Another child comes over to look at your drawing. The child is holding a juice box. You turn away for a minute and when you look back the child has spilled juice all over your art project. You worked on the project for a long time and now it's messed up.	You are in a playground and waiting for your turn for a swing. A child has been on the swing for a long, long time and doesn't seem to want to share the swing with you. You would really like to play on the swing.
Hostile Attribution Bias		Do you think that the child is not talking to you: On purpose or because the child didn't notice you	Do you think the child spilled the juice: On purpose or by accident	Do you think the child is not sharing the swing: On purpose or because the child didn't see you
Emotion Orientation	Anger	If you were in this situation, would you feel angry?	If you were in this situation, would you feel angry?	If you were in this situation, would you feel angry?
	Sadness	If you were in this situation, would you feel sad?	If you were in this situation, would you feel sad?	If you were in this situation, would you feel sad?
	Calm	If you were in this situation, would you feel calm?	If you were in this situation, would you feel calm?	If you were in this situation, would you feel calm?
<i>What would you do next, in this situation?</i>				
Emotion Dysregulation	Sadness	Whine or cry	Whine or cry	Whine or cry
	Dysregulation			
	Anger	Yell or stomp your feet	Yell or stomp your feet	Yell or stomp your feet
Conflict Resolution Strategies				
INS 0 other-transforming	Verbal aggression	Say something mean about the child to another friend so the child can hear it	Say something mean to get back at the child	Say something mean to the child
	Physical aggression	Slam your books on the child's desk	Spill juice on the child	Push the child off the swing
INS 0 self-transforming	Ignoring/fleeing	Just sit quietly and don't say anything	Ignore the child and just clean up the drawing yourself	Just walk away
INS 1 other-transforming	Demanding resolutions/fair outcome	Tell the child he/she shouldn't ignore you	Tell the child to clean up and fix your drawing	Tell the child it's your turn and he/she should stop
	Appeal to authority	Tell your teacher the child is not talking to you	Tell your teacher what the child did	Tell your teacher the child is not sharing the swing
INS 2 self-transforming	Ask for reasons		Ask the child why she spilled the juice	Ask the child why he's not sharing the swing
INS2 other-transforming	Tell how you feel, give reasons, barter, persuade	Say hi to the child and ask if he/she want to be friends	Tell the child how you feel about the ruined drawing	Ask the child if it's okay if you can swing next

Table 1. Measure item-construct map (continued)

Constructs		Story 4	Story 5	Story 6
Social Situation		Imagine your teacher is handing out pencils. You just got a good spot near the front of the line. Then another student just comes in and stands in front of you, taking your place in line.	Imagine that a child standing next to you drinking water during break. The next thing you know, the child has splashed some water on your face.	Your classmates are outside playing a game during a break. You would really like to play with them, but they haven't asked you.
Hostile Attribution Bias		Do you think the child took your place: On purpose or by accident	Do you think that the child splashed water: On purpose or by accident	Do you think that they didn't ask you to play: On purpose or because they didn't see you
Emotion Orientation	Anger	If you were in this situation, would you feel angry?	If you were in this situation, would you feel angry?	If you were in this situation, would you feel angry?
	Sadness	If you were in this situation, would you feel sad?	If you were in this situation, would you feel sad?	If you were in this situation, would you feel sad?
	Calm	If you were in this situation, would you feel calm?	If you were in this situation, would you feel calm?	If you were in this situation, would you feel calm?
<i>What would you do next, in this situation?</i>				
Emotion Dysregulation	Sadness	Whine or cry	Whine or cry	Whine or cry
	Anger	Yell or stomp your feet	Yell or stomp your feet	Yell or stomp your feet
	Dysregulation			
Conflict Resolution Strategies				
INS 0 other-transforming	Verbal aggression	Say something mean to get back at the child	Say something mean to get back at the child	Say something mean to get back at them
	Physical aggression	Push the child out of the line	Splash water on the child	Do something to ruin their game, like trip them over
INS 0 self-transforming	Ignoring/fleeing	Give them an angry look but do nothing	Ignore the child and walk away	Glare at them and walk away
INS 1 other-transforming	Demanding resolutions/fair outcome	Tell the child to get in line behind you	Tell the child to go get you a towel	Tell them they should play with you
	Appeal to authority	Tell your teacher the child took your place	Tell your teacher what the child did	Tell your teacher they didn't ask you to play
INS 2 self-transforming	Ask for reasons	Ask the child why they took your place	Ask the child why she splashed water on you	Ask them why they didn't ask you to play
INS2 other-transforming	Tell how you feel, give reasons, barter, persuade	Let the child know you were there first and it's not fair the child took your place	Tell the child how you feel	Ask them nicely if you can play, too

Table 2. *Item-level descriptive statistics and internal consistencies*

Table Key

CS[number]	The story the questions are asked about	VA	Verbal aggression
AB	Hostile attribution bias	PA	Physical aggression
AE	Emotional orientation: Anger	IG	Disengagement from the conflict (Ignoring)
SE	Emotional orientation: Sadness	TT	Appeal to authority
CE	Emotional orientation: Calmness	PR	Demanding resolutions and fair outcome in the situation
AD	Emotional dysregulation: Anger	RS	Ask reasons
SD	Emotional dysregulation: Sadness	CM	Communication of his/her own perspectives

Baseline						Endline				
	<i>N</i>	Mean	SD	Min	Max	<i>N</i>	Mean	SD	Min	Max
Hostile attribution bias (alpha = .72)						Hostile attribution bias (alpha = .70)				
CS1_AB	3250	0.56	0.5	0	1	3189	0.55	0.5	0	1
CS2_AB	3248	0.5	0.5	0	1	3186	0.46	0.5	0	1
CS3_AB	3249	0.73	0.44	0	1	3188	0.73	0.44	0	1
CS4_AB	3250	0.77	0.42	0	1	3190	0.79	0.41	0	1
CS5_AB	3246	0.71	0.45	0	1	3193	0.72	0.45	0	1
CS6_AB	3242	0.57	0.49	0	1	3186	0.55	0.5	0	1
Emotional orientation: Anger (alpha = .83)						Emotional orientation: Anger (alpha = .83)				
CS1_AE	3254	2.67	1.64	1	5	3192	2.66	1.51	1	5
CS2_AE	3257	3.04	1.68	1	5	3190	2.95	1.58	1	5
CS3_AE	3248	3.1	1.62	1	5	3190	3.04	1.55	1	5
CS4_AE	3244	3.02	1.62	1	5	3188	3.02	1.52	1	5
CS5_AE	3249	3.25	1.65	1	5	3187	3.16	1.56	1	5
CS6_AE	3243	2.79	1.64	1	5	3184	2.74	1.54	1	5
Emotional orientation: Sadness (alpha = .81)						Emotional orientation: Sadness (alpha = .81)				
CS1_SE	3260	2.62	1.59	1	5	3194	2.6	1.47	1	5
CS2_SE	3251	2.97	1.62	1	5	3191	2.92	1.52	1	5
CS3_SE	3252	2.82	1.57	1	5	3191	2.76	1.47	1	5
CS4_SE	3245	2.75	1.58	1	5	3185	2.75	1.47	1	5
CS5_SE	3247	2.89	1.62	1	5	3187	2.84	1.5	1	5
CS6_SE	3243	2.75	1.59	1	5	3183	2.68	1.47	1	5
Emotional orientation: Calm (alpha = .82)						Emotional orientation: Calm (alpha = .83)				
CS1_CE	3254	3.77	1.52	1	5	3191	3.7	1.49	1	5
CS2_CE	3252	3.49	1.58	1	5	3188	3.41	1.54	1	5
CS3_CE	3252	3.52	1.57	1	5	3189	3.43	1.49	1	5
CS4_CE	3246	3.51	1.55	1	5	3186	3.44	1.49	1	5
CS5_CE	3241	3.37	1.61	1	5	3190	3.35	1.51	1	5
CS6_CE	3236	3.59	1.55	1	5	3185	3.53	1.5	1	5
Emotional dysregulation: Anger (alpha = .83)						Emotional dysregulation: Anger (alpha = .82)				

CS1_AD	3268	0.07	0.25	0	1	3200	0.06	0.23	0	1
CS2_AD	3262	0.07	0.26	0	1	3200	0.05	0.22	0	1
CS3_AD	3255	0.06	0.24	0	1	3195	0.06	0.23	0	1
CS4_AD	3254	0.06	0.23	0	1	3194	0.05	0.22	0	1
CS5_AD	3254	0.06	0.24	0	1	3193	0.05	0.22	0	1
CS6_AD	3250	0.05	0.21	0	1	3192	0.04	0.2	0	1
Emotional dysregulation: Sadness (alpha = .85)						Emotional dysregulation Sadness: (alpha = .84)				
CS1_SD	3266	0.19	0.39	0	1	3198	0.16	0.37	0	1
CS2_SD	3261	0.17	0.37	0	1	3200	0.15	0.35	0	1
CS3_SD	3257	0.12	0.32	0	1	3196	0.11	0.31	0	1
CS4_SD	3254	0.1	0.3	0	1	3194	0.09	0.29	0	1
CS5_SD	3254	0.11	0.31	0	1	3193	0.1	0.3	0	1
CS6_SD	3250	0.1	0.29	0	1	3191	0.09	0.29	0	1
INS 0 Verbal aggression (alpha = .80)						INS 0 Verbal aggression (alpha = .73)				
CS1_VA	3263	0.07	0.26	0	1	3200	0.08	0.27	0	1
CS2_TT	3261	0.07	0.25	0	1	3200	0.06	0.23	0	1
CS3_VA	3254	0.07	0.25	0	1	3192	0.06	0.24	0	1
CS4_TT	3252	0.06	0.24	0	1	3194	0.05	0.23	0	1
CS5_VA	3252	0.07	0.25	0	1	3192	0.06	0.24	0	1
CS6_VA	3250	0.06	0.23	0	1	3191	0.05	0.22	0	1
INS 0 Physical aggression (alpha = .73)						INS 0 Physical aggression (alpha = .67)				
CS1_PA	3264	0.05	0.21	0	1	3201	0.04	0.2	0	1
CS2_PA	3260	0.08	0.28	0	1	3200	0.05	0.21	0	1
CS3_PA	3254	0.07	0.25	0	1	3191	0.06	0.23	0	1
CS4_PA	3252	0.07	0.25	0	1	3193	0.07	0.25	0	1
CS5_PA	3252	0.13	0.33	0	1	3191	0.12	0.32	0	1
CS6_PA	3250	0.09	0.28	0	1	3191	0.07	0.26	0	1
INS 0 Ignoring/fleeing (alpha =.70)						INS 0 Ignoring/fleeing (alpha =.71)				
CS1_IG	3262	0.74	0.44	0	1	3199	0.75	0.43	0	1
CS2_IG	3253	0.63	0.48	0	1	3192	0.71	0.45	0	1
CS3_IG	3248	0.62	0.48	0	1	3194	0.73	0.45	0	1
CS4_IG	3250	0.48	0.5	0	1	3192	0.53	0.5	0	1
CS5_IG	3253	0.6	0.49	0	1	3190	0.62	0.49	0	1
CS6_IG	3247	0.44	0.5	0	1	3189	0.52	0.5	0	1
INS 1 Demanding resolutions/fair outcome (alpha = .67)						INS 1 Demanding resolutions/fair outcome (alpha = .65)				
CS1_CM	3258	0.55	0.5	0	1	3199	0.44	0.5	0	1
CS2_PR	3258	0.41	0.49	0	1	3196	0.44	0.5	0	1
CS3_CM	3252	0.8	0.4	0	1	3196	0.82	0.38	0	1
CS4_PR	3252	0.75	0.44	0	1	3193	0.81	0.4	0	1
CS5_PR	3252	0.61	0.49	0	1	3191	0.61	0.49	0	1

CS6_PR	3250	0.69	0.46	0	1	3189	0.7	0.46	0	1
INS 1 Appeal to authority (tell teachers: alpha = .81)						INS 1 Appeal to authority (tell teachers: alpha = .80)				
CS1_TT	3264	0.28	0.45	0	1	3201	0.23	0.42	0	1
CS2_VA	3262	0.5	0.5	0	1	3199	0.45	0.5	0	1
CS3_TT	3254	0.5	0.5	0	1	3196	0.5	0.5	0	1
CS4_VA	3253	0.57	0.5	0	1	3193	0.56	0.5	0	1
CS5_TT	3253	0.55	0.5	0	1	3192	0.53	0.5	0	1
CS6_TT	3249	0.37	0.48	0	1	3190	0.35	0.48	0	1
INS 2 Ask for reasons (alpha = .82)						INS 2 Ask for reasons (alpha = .84)				
CS1_RS	3259	0.54	0.5	0	1	3197	0.6	0.49	0	1
CS2_RS	3260	0.67	0.47	0	1	3200	0.68	0.47	0	1
CS3_RS	3252	0.68	0.47	0	1	3195	0.71	0.45	0	1
CS4_RS	3250	0.68	0.47	0	1	3193	0.69	0.46	0	1
CS5_RS	3253	0.7	0.46	0	1	3195	0.72	0.45	0	1
CS6_RS	3250	0.63	0.48	0	1	3191	0.66	0.48	0	1
INS 2 Communicate feelings, give reasons, barter, persuade (alpha = .67)						INS 2 Communicate feelings, give reasons, barter, persuade (alpha = .71)				
CS1_PR	3263	0.89	0.31	0	1	3202	0.9	0.3	0	1
CS2_CM	3256	0.64	0.48	0	1	3195	0.66	0.47	0	1
CS3_PR	3251	0.88	0.32	0	1	3196	0.91	0.29	0	1
CS4_CM	3246	0.8	0.4	0	1	3194	0.84	0.36	0	1
CS5_CM	3252	0.64	0.48	0	1	3193	0.64	0.48	0	1
CS6_CM	3250	0.88	0.33	0	1	3190	0.89	0.31	0	1