Supporting Refugee and Immigrant Youth's Mental Health: Examining Effectiveness and Implementation of a School-Based Intervention

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STRONG will be implemented in six public schools during 2021-2022 academic year and six public schools during the 2022-2023 academic year. We anticipate three elementary schools and three high schools each year. Within CPS, school leadership has requested interventions specifically designed for refugee and immigrant students due to school population and need. In each school, one group of approximately five students will be implemented. Schools will be randomly assigned to either provide the STRONG program immediately (immediate treatment) or after three months (delayed treatment). Randomization will include balancing of elementary and high schools so that the number of elementary and high schools randomized to immediate vs. delayed treatment will be equivalent. School mental health staff (e.g., district-employed social workers or community clinicians who provide services in schools) will co-facilitate groups in schools, meeting once a week. School-based clinicians are typically expected to deliver one to two small group interventions as part of their job duties. District partners have committed to supporting clinicians in delivering STRONG as part of this expectation. The research team, comprised of 10 undergraduate students and four graduate students, will collect data at baseline and then at three- and six-months post baseline. Undergraduate and graduate student pairs will meet with students and parents at schools allowing for support and mentorship of undergraduate research assistants along with clinical expertise from graduate students enrolled in the Clinical Psychology PhD program at Loyola University Chicago.

Eligibility Criteria

Students will be identified by trained STRONG clinicians consistent with standard school procedures, which include teacher and other school staff referral, parent nomination, and clinician identification from other support services. Eligibility criteria include (1) newcomer status (students who have migrated to a new country) and (2) difficulties in functioning or coping as assessed by school staff (teacher, school-based clinician). Referral reasons may include general difficulties, academic performance, peer relationships, family relationships, physical problems, behavioral concerns, and/or appearance of affect, among others. The eligibility criteria are intentionally designed to be broad (i.e., not a strict clinical cutoff) with the purpose of being more inclusive, understanding that cultural and environmental differences may produce different behavioral and emotional outcomes than what typical clinical assessments capture (Alegría et. al, 2008). In addition, researchers call for mental health treatment for refugee and immigrant children that can address trauma, acculturation, isolation, and resettlement, to better address needs (Ellis et. al, 2020). Due to the diversity in experiences, this can also impact the presenting concerns of children during the resettlement process. (Ellis et. al, 2020). Thus, it is important to have a broader inclusion criterion to best fit the needs of this group. This way children that may not be presenting with solely PTSD symptoms, including anxiety, depression, and stress management problems can also benefit from a mental health intervention that highlights their strengths. STRONG allows for this flexibility needed in addressing presenting concerns among this diverse population.

Intervention

Training for clinicians to implement STRONG will occur in fall 2021. Training will be facilitated by the Center for Childhood Resilience (CCR) at Lurie Children's Hospital. The STRONG training is two days and provides an overview of each session, practice of strategies, and implementation planning. STRONG includes 10 small group sessions, one individual session (for journey narrative), and teacher and parent education sessions. There is an elementary and high school version of the manual, modified for developmental appropriateness (Hoover et al., 2019). Group sessions include recognizing internal strengths, identifying family/social supports, relaxation, mindfulness, cognitive coping, and problem-solving. Each session includes newcomer-specific examples and support for students in applying strategies to their newcomer experience as well as natural opportunities to foster positive identity and build on strengths (Hoover et al., 2019).

In the elementary and high school groups, session one helps students identify internal strengths and external support systems (family/social supports), while in session two students learn about stress and how it impacts their bodies and minds. In the third session, stress reactions and feeling identifications are explored, and in the fourth session feelings management is discussed. In session five, students begin the session by sharing an object that represents where they are from, fostering positive cultural identity. Then, students begin to explore the cognitive aspect of mental health and learn about using helpful thoughts. In session six, children learn about the "steps to success", in which they create goals and manageable steps to achieve them, as well as ways to address avoidance. In session seven, children are taught different strategies for problem solving. In session eight, students share something meaningful from their home country (e.g., favorite food, special place, favorite tradition) and then share parts of their journey with the group. In the ninth session, students share about a favorite holiday or tradition and then continue sharing about their journeys. Then in session 10, students take turns appreciating strengths they have noticed about group members and then take part in a

graduation celebration. Between sessions four and eight, students meet individually with the clinician to discuss their journey to the U.S. This may include positive and difficult experiences, including potential traumatic experience. The clinician guides students to recognize strengths that helped them get through their journey rather than focusing on a single event with repeated retelling. The journey narrative is flexible to allow students to discuss multiple traumatic experiences, while also highlighting strengths and assets. It is recommended that the clinician screen for significant PTSD symptoms in individual sessions to consider if additional referrals will be necessary after STRONG. Clinicians also have individual sessions with caregivers and teachers to provide psychoeducation on the children's participation in the STRONG program. This allows for caregivers and teachers to support the student's progress in multiple settings (Hoover et al., 2019).

Participants

An estimated 60 students will participate in STRONG (five students per group across six public schools over two years). Student age range will be 8-18, though each STRONG group will be comprised of students within one grade level of each other. Clinicians, school personnel (teachers, administrators), and parents will be invited to complete measures and participate in focus groups (clinicians) or interviews (teachers, administrators). Teachers who have students participating in STRONG and/or assisted with referrals/identification of students will be recruited to participate in interviews. Teacher participants will be identified in collaboration with school partners/administrators. For example, English Language Learner (ELL) teachers have been key partners in referrals/identification of students in our preliminary feasibility pilot.

Procedure

Clinicians will identify eligible students and reach out to parents/caregivers consistent with standard school procedures. Clinicians will offer a group or individual information meeting to share more about STRONG and will ask parent permission to share contact information with the research team. With permission, the research team will meet with parents as part of the informational meeting or at a later date to provide additional information about the research protocol and obtain informed consent and assent.

Data will be collected from students, parents, and teachers at baseline and then at three- and six-months post baseline. Questionnaires will include measures of emotional/behavioral symptoms as well as coping and resilience. Caregivers will also be asked to provide demographic information. The three-month assessment point will represent "post-intervention" data for students at schools randomized to immediate treatment, and will be a second "pre-intervention" time-point for students at schools randomized to delayed treatment. The six-month assessment will represent three-month follow-up data for students at schools randomized to immediate treatment and "post- intervention" data for students at schools randomized to delayed treatment. School-based mental health staff will complete fidelity monitoring forms after each session, and will provide quantitative and qualitative feedback on their satisfaction with the program. Parents and students will receive a $30 gift card for each of the three assessment they complete. After Year 1 STRONG groups conclude, clinicians will be invited to participate in focus groups, while school staff will be interviewed. Clinicians will receive $40 gift card incentives for completion of STRONG training, completion of each STRONG group, and participation in focus groups. School staff (teachers, administrators) will receive a $40 gift card for participation in interviews. See Table 3 for a timeline of research tasks.

Measures

Measures were selected due to availability in multiple languages (e.g., SDQ, CD-RISC). Measures not available in Arabic, Spanish, or Urdu have been forward and backward translated. See below for summary of measures. Student self-report measures are appropriate students age 11 and older. Thus, for students ages 8-10, only parent and teacher report will be collected.

Table 3. Timeline of major research tasks.

YEAR 1: FALL		WINTER		SPRING		SUMMER
Immediate Treatment						
Training; Group formation	Consent; Randomization; Baseline/Pre-Treatment Assessment	STRONG Group	Post-Treatment Assessment	Wait Period (No Treatment)	Repeated Post-Treatment Assessment; Focus Groups & Interviews	Data entry & scoring; Preparation for analyses

Delayed Treatment						
Training; Group formation	Consent; Randomization; Baseline Assessment	Waitlist (No Treatment)	Repeated Baseline Assessment	STRONG Group	Post-Treatment Assessment; Focus Groups & Interviews	
YEAR 2: FALL		**WINTER**		**SPRING**		**SUMMER**
Immediate Treatment						Data entry & scoring; Preparation for analyses
Group formation	Consent; Randomization; Baseline/Pre-Treatment Assessment	STRONG Group	Post-Treatment Assessment	Wait Period (No Treatment)	Repeated Post-Treatment Assessment	
Delayed Treatment						
Group formation	Consent; Randomization; Baseline Assessment	Waitlist (No Treatment)	Repeated Baseline Assessment	STRONG Group	Post-Treatment Assessment	
YEAR 3: FALL		**WINTER**		**SPRING**		**SUMMER**
Finish Quantitative Analyses; Code Qualitative Data		Finish Coding Qualitative Data and Conduct Thematic Analysis; Begin preparation for publication		Share findings with partners; Plan future implementation/dissemination; Submit findings for publication; Prepare R01 grant application		

Student Mental Health. Parents, teachers, and students will complete the Strengths and Difficulties Questionnaire (SDQ), a 25-item measure that assesses mental health functioning (Goodman, 1997). It includes a Total Difficulties score and four problem subscales: hyperactivity/inattention scale (e.g., "Restless, overactive, cannot stay still for long"); the emotional symptoms scale (e.g., "Often unhappy, down-hearted or tearful"); the conduct problems scale (e.g., "Generally obedient, usually does what adults request"); the peer problems scale (e.g., "Generally liked by other children"). It also has a prosocial scale (e.g., " Considerate of other people's feelings "). Teachers will complete the SDQ based on their observations of students within their classrooms. Parents will complete the SDQ based on their observations of their child at home. Students will self-report on their mental health. Respondents rate statements on a 3-point scale from *Not true* to *Certainly true*. The SDQ is available in a number of languages including Arabic, Spanish, and Urdu.

Resilience. Students will complete the Connor-Davidson Resilience Scale (CD-RISC) pre- and post-intervention. This 25-item measure is used to assess resilience in children and strengths when facing adversity (Connor & Davidson, 2003). Example items include "I am able to adapt when changes occur," "Past successes give me confidence in dealing with new challenges and difficulties," "I tend to bounce back after illness, injury, or other hardships." Students are instructed to reference the previous month as they respond to each item on a 5-point scale from *Rarely true* to *Nearly all of the time*. The CD-RISC is also available in a number of languages including Arabic, Spanish, and Urdu.

Coping. Parents and students will complete measures of student coping efficacy (Sandler et al, 2000), which includes seven items assessing students' beliefs about their abilities to handle and cope with difficult situations. An example item is "The things people do to handle stressful problems sometimes work well to make the situation better and sometimes they don't work at all. How well do you think that the things your child does to cope work to make *situations better?"* Students respond to items using a four-point scale from *Not at all good* to *Very good*. Parents will rate student coping and responses to stress during the resettlement period in the U.S. on the Responses to Stress Questionnaire (RSQ; Connor-Smith et al., 2000). The RSQ includes subscales for primary control coping (e.g., problem solving; "She/he asks other people for help or for ideas about how to make the problem better"), secondary control coping (e.g., cognitive restructuring; "She/he thinks about the things he/she is learning from the situation, or something good that will come from it"), and disengagement coping (e.g., avoidance; "She/he tries to stay away from people and things that make her/him feel upset or remind her/him of the problem"). Parents will rate how much their child engages in each item on a

scale of 1 (*Not at all*) to 4 (*A lot*). The RSQ consistently demonstrates good reliability and validity including with Spanish-speaking populations (Connor-Smith et al., 2000). In our preliminary feasibility pilot, we worked with Dr. Bruce Compas to modify the RSQ to be specific to resettlement stress. We have also forward and backward translated the measure in Arabic and Urdu.

School Connectedness. Students will complete the School Connectedness Scale at each assessment. This 5-item scale was adapted from the Add Health study that measures students' bond towards their school (e.g., "I feel like I am part of this school"; McNeely et al., 2002; Furlong et al., 2011). Students will complete the School Climate subscale of the California Healthy Kids Survey (CHKS; WestEd, 2000) to assess school relationships and support (9 items; e.g., "At my school, there is a teacher or some other adult who really cares about me"). Students will rate the items on a rating scale from 1 (*Not at all true*) to 4 (*Very much true*).

Fidelity, & Student Engagement. Clinicians will complete a fidelity checklist for each session indicating whether core content was covered on a scale ranging from 0 (*Not at all*) to 3 (*Thoroughly covered*), with the specific items varying by session. Clinicians will additionally identify challenges, activities that were well received, and amount of time per session. Clinicians will rate students' engagement and current functioning during each session.

Satisfaction. After STRONG implementation, clinicians will respond to six items (e.g., implementation challenges, satisfaction with training) and parents will rate four items (e.g., benefits of the program, importance of the program) on a five-point scale from *Not at all* to *A whole lot*. Children will rate how much they liked the STRONG curriculum on a three-point scale from *Not at all* to *Very much*.

Analytic Strategy

Quantitative and qualitative methods will be utilized at various stages of the study. Intent to treat analyses will be conducted, and imputation approaches will be considered. Pre- treatment group differences will be included as covariates in analyses, as appropriate. Outliers and assumptions of normality will be examined and transformations considered. Consultation with Dr. Hoover and Dr. Crooks will include discussion of data analyses. See Figure 1 (also shown in Specific Aims) for conceptual model guiding Aims 1 & 2.

Aim 1. To test the hypotheses that students who participate in STRONG will show improvements in self-reported, parent-reported, and teacher-reported mental health (emotional symptoms, conduct problems, hyperactivity/inattention, and peer problems) as compared to the waitlist control group, repeated measures Analyses of Variance (ANOVA) will be conducted (***Aim 1, Hypothesis 1***). Repeated measures ANOVAs will be conducted on the primary mental health variables (total difficulties, emotional symptoms, conduct problems, hyperactivity/inattention, and peer problems) from baseline to post-treatment to test for a significant Time X Group interaction. Power analyses conducted with GPower (Faul et al., 2006) indicate that a sample size of N=54 is required to detect a Time X Group interaction with a medium effect using two time-points and N=44 utilizing all three repeated measures, suggesting adequate power.

Aim 2. To test the hypotheses that students who participate in STRONG will show improvements in self-reported resilience, coping efficacy, school connectedness and parent-reported coping (***Aim 2, Hypothesis 1***), repeated measures ANOVAs will be conducted on resilience, coping, and school connection from baseline to post-treatment to test for a significant Time X Group interaction. To test the hypothesis that these changes will be related to student mental health improvement/maintenance over time (***Aim 2, Hypothesis 2***), hierarchical linear modeling (HLM) will be utilized. HLM analyses (repeated measures nested within individuals) will allow for an examination of how changes over time on intervention targets (resilience, coping, and school connection) predict student mental health trajectories across all three time-points for the immediate treatment group. This approach is ideal for nested data and capitalizes on all existing time points.

Aim 3. To examine implementation of STRONG, qualitative methods will be employed. Focus group and interview scripts will be developed to assess implementation challenges and successes, as well as how the intervention fit within the school/community context and across differing newcomer pathways (e.g., refugee vs. immigrant). We prioritize focus groups with clinicians and interviews with teachers and administrators because qualitative data were not collected with these groups in our preliminary feasibility pilot (only parent and student interviews were conducted). Focus groups and interviews will be audio-recorded and transcribed. Transcripts will be imported into Dedoose, a qualitative software program designed to facilitate thematic coding. Codes will be generated using an integrated approach—determined by participant responses and informed by past literature (Bradley et al., 2007). Codes will be clarified and revised as necessary and broad themes will be identified. Responses to open-ended satisfaction questions for students and parents will also be examined for themes. Finally, fidelity ratings from clinicians will be examined along with satisfaction ratings from parents and students.