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Reducing Risks for Anxiety and Depression Among Urban Youth: Leveraging After School Programs to Promote Emotion Regulation

Erin R. Hedemann
ehede001@fiu.edu

FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

REDUCING RISKS FOR ANXIETY AND DEPRESSION AMONG URBAN YOUTH: LEVERAGING AFTER SCHOOL PROGRAMS TO PROMOTE EMOTION REGULATION

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Erin R. Hedemann

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To: Dean Michael R. Heithaus
College of Arts, Sciences and Education

This dissertation, written by Erin R. Hedemann, and entitled Reducing Risks for Anxiety and Depression Among Urban Youth: Leveraging After School Programs to Promote Emotion Regulation, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

_____
Erica Musser

_____
Jeremy Pettit

_____
Catherine Coccia

_____
Stacy L. Frazier, Major Professor

Date of Defense: June 8, 2018

The dissertation of Erin R. Hedemann is approved.

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Dean Michael R. Heithaus
College of Arts, Sciences and Education

_____
Andrés G. Gil
Vice President for Research and Economic Development
and Dean of the University Graduate School

Florida International University, 2019

DEDICATION

I dedicate this dissertation to my parents, who showed me the value of service-centered work and supported me throughout my education, and to my husband, who has encouraged me through dark times and whose passion for life and work continues to inspire me.

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I would like to thank all of the staff and families who participated in the Consorts who contributed their time, expertise, and humor, and who continually displayed their dedication and love for the youth involved in the program. I also would like to thank all of the staff and families who participated in the research for contributing their time and thoughts.

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ABSTRACT OF THE DISSERTATION

REDUCING RISKS FOR ANXIETY AND DEPRESSION AMONG URBAN YOUTH: LEVERAGING AFTER SCHOOL PROGRAMS TO PROMOTE EMOTION REGULATION

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Erin R. Hedemann

Florida International University, 2019

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Professor Stacy L. Frazier, Major Professor

Rates of internalizing disorders in childhood are around 10% and higher among racial/ethnic minority youth and youth living in poverty. Targeting empirically derived processes associated with anxiety and depression may be an efficient and effective way to minimize risks for internalizing symptoms and impairment. Deficits in emotion regulation (e.g., increased use of emotional suppression, decreased use of cognitive reappraisal) are associated with anxiety and depression in youth and improve with treatment. The current study examined the acceptability and promise of an intervention targeting these emotion regulation strategies in the context of an after-school music program. Reflecting a community-based participatory research approach, a community advisory structure involving program staff and families developed intervention and research design and implementation. Through a cluster randomized controlled trial, the study examined the promise of an Emotion Regulation Skills Intervention (ERSI) across three sites within the after-school program. Intervention activities were integrated into the standard music curriculum. Of the youth enrolled in intervention and control classrooms

(*n*=70 intervention, *n*=60 control), 27 youth in the intervention condition and 15 youth in the control condition completed measures of internalizing problems, emotion regulation strategies, social functioning, and life satisfaction at baseline and post-intervention. Overall, youth reported high levels of satisfaction with ERSI activities (eight of nine activities received more ratings of satisfaction than dissatisfaction). Findings suggest ERSI did not have a significant effect on internalizing symptoms but did lead to decreased use of emotional suppression, improved social functioning, and increased life satisfaction for youth who participated compared to youth in the control condition. Thus, the current study provides preliminary evidence of the acceptability and promise of integrating emotion regulation skills building activities within after school programming.

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I. INTRODUCTION TO THE RESEARCH

My research focuses on using community-based participatory research approaches to support mental health promotion for economically vulnerable and ethnic/racial minority youth and families. I am building a program of research that: (a) targets economically vulnerable and ethnic/racial minority youth at risk for mental health problems; (b) focuses on emotion regulation as a lever for change; and (c) reflects the goals and leverages the expertise of community partners and consumer stakeholders.

Rationale for Research

Rates of internalizing disorders in childhood are around 10% and higher among racial/ethnic minority youth and youth living in poverty (Anderson & Mayes, 2010; Centers for Disease Control, 2013), yet they are less likely to be identified for and receive services (Anderson et al., 2006; Thompson & May, 2006). Targeting empirically derived emotion regulation processes associated with anxiety and depression may be an efficient and effective way to minimize risks for internalizing symptoms and impairment. Deficits in cognitive reappraisal and emotional awareness, as well as the overuse of emotional suppression, have been associated with anxiety and depression in youth (e.g., Betts, Gullone, & Allen, 2009; Suveg, Hoffman, Zeman, & Thomassin, 2009) and have been shown to improve with treatment (Kendall & Treadwell, 2007; Shirk, Crisostomo, Jungbluth, & Gudmundsen, 2013). However, emotion regulation mechanisms have not been targeted directly as levers for change. Further, differential access to and use of services among vulnerable youth suggests the need to examine other settings to promote good mental health for youth at risk. After-school programs utilizing recreation offer a promising place for promoting socio-emotional skills development among at-risk youth

by integrating socio-emotional skills building activities into children's naturally-occurring routines (Frazier, Cappella, & Atkins, 2007).

Presentation of Research Findings

This dissertation examines the acceptability and promise of an emotion regulation skills intervention to reduce risk for anxiety and depression and the assessment of mental health need within urban, economically vulnerable communities. The research is described in three separate manuscripts. Chapter two presents the preliminary stages of an academic-community partnership between the FIU research team and an after-school music program, an assessment of the level of mental health need of youth involved in the music program, and a preliminary examination of the feasibility and acceptability of integrating emotion regulation skills building activities into the music curriculum. Chapter three describes an evaluation of measurement invariance of the Strengths and Difficulties Questionnaire (Goodman, 1997), a commonly-used mental health screening questionnaire. In particular, we were interested in examining whether the Strengths and Difficulties Questionnaire would be invariant across groups representative of different levels of opportunity (e.g., educational opportunity, economic status, healthcare availability). Chapter four examines the promise of the emotion regulation skills intervention through a cluster-randomized controlled trial. Using a community-based participatory research approach, we designed and implemented emotion regulation skills building activities within an after-school music program as part of their regularly-scheduled activities. We hypothesized that: 1) youth would express high satisfaction with intervention activities, and 2) youth who participated in the emotion regulation skills intervention would report decreased use of emotional suppression, increased use of

cognitive reappraisal, and fewer anxiety and depressive symptoms compared to youth in the after-school program who did not participate. Following decisions by community advisory groups, we also evaluated the extent to which the emotion regulation skills intervention impacted youth functioning (e.g., social skills and life satisfaction) across several domains (e.g., school, home, neighborhood).

II. LEVERAGING AFTER SCHOOL PROGRAMS TO MINIMIZE RISKS FOR INTERNALIZING SYMPTOMS AMONG URBAN YOUTH: WEAVING TOGETHER MUSIC EDUCATION AND SOCIAL DEVELOPMENT

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Abstract

This study examined a university-community partnership, focusing on mental health promotion within an after-school music program. We pursued two goals: a) supporting staff around student engagement and behavior management; b) integrating social-emotional activities into the curriculum. We assessed youth's mental health needs and examined feasibility of social-emotional activities delivered. One-hundred sixty-two youth participated in activities, while a subset of youth (n = 61) and their parents provided information on mental health need. Rates of anxiety and depression symptoms were high, and youth reported high satisfaction with the activities. Results suggest promise of this model for mental health promotion for urban youth.

Key words: mental health promotion, after-school, anxiety, depression

Leveraging After School Programs to Minimize Risks for Internalizing Symptoms among Urban Youth: Weaving Together Music Education and Social Development

Introduction

After school programs offer a promising avenue for building resilience and promoting mental health among vulnerable youth (Frazier, Cappella, & Atkins, 2007). Fifteen percent (8.4 million) of U.S. children participate in after-school programs, with higher rates of participation for African American (24%) and Hispanic (21%) children (Afterschool Alliance, 2009). Participating in structured after-school programs predicts improvement in school attendance, test scores and grades, and health and safety, and gains are highest for youth at risk for negative outcomes (Afterschool Alliance, 2013;

Posner & Vandell, 1994). These benefits are strongest for high-quality programs (i.e., programs are sequential, active, focused, and offer explicit skills-building activities; Durlak, Weissberg, & Pachan, 2010) that emphasize character development and social skills (Gottfredson, Gerstenblith, Soulé, Womer, & Lu, 2004).

Strategically integrating mental health promoting skills that directly target mechanisms of action (i.e., processes responsible for change in behavior) into children's natural activities holds several advantages over more conventional school-based prevention and intervention. First, leveraging after school time may enhance reach, including youth with unidentified mental health need, underlying vulnerabilities, and early symptoms. Second, school-based service models typically involve pulling students from their classrooms for individual or group-based intervention (Foster, Young, & Hermann, 2005), resulting in lost instructional time and potential stigma. After school mental health promotion minimizes interference with academic progress, which itself serves as a protective factor for youth in economically disadvantaged communities. Third, after school goals align well with mental health promotion, and recreational activities inherently offer opportunities for social-emotional skills building (Frazier et al., 2007).

Rich data over many years has highlighted the contribution of music education to children's development in auditory processing and attention (Kraus et al., 2012; Strait et al., 2010) and in reading skills (Tierney & Kraus, 2013), as early as infancy (Siu & Cheung, 2015), with growing benefits as children become older and more skilled (Kraus et al., 2014). Among the many types of activities in which youth participate after school, music education is particularly well-suited for mental health promotion. Music education,

when offered in a group format such as choir, band, or orchestra, emphasizes teamwork, cooperation, and artistic understanding and expression, making music an ideal medium for developing skills such as insight, communication, and problem solving. Further, because many musical pieces are meant to express or invoke particular emotional experiences (e.g., Juslin, Liljestrom, Vastfjall, & Lundqvist, 2010), music is particularly well-positioned for building emotional understanding and developing capacity for emotion regulation, skills necessary for promoting mental health and preventing anxiety and depression in particular. Partnerships with music education after school programs may serve as an ideal setting to mitigate risks for internalizing problems and build resilience among urban youth.

Urban Youth Exhibit High Rates of Internalizing Problems

Anxiety and depressive disorders are highly prevalent in childhood, with rates hovering around 10% based on national surveys (Costello et al., 2003). Prevalence is even higher among ethnic minority youth and youth living in poverty (Silverman, La Greca, & Wasserstein, 1995; Storch, Nock, Masia-Warner, & Barlas, 2003; Van Voorhees et al., 2008). Symptoms are accompanied by impairment in interpersonal and school functioning (Costello et al., 1996), and left unaddressed, often result in later anxiety, depression, and substance use problems (Cole, Peeke, Martin, Truglio, & Seroczynski, 1998; Copeland, Shanahan, Costello, & Angold, 2009; Moffitt et al, 2007; Pine, Cohen, Gurley, Brook, & Ma, 1998), that contribute to further occupational and interpersonal impairment (Barrera & Norton, 2009; Lépine, 2001). The burden to society of anxiety and depression is enormous, with depressive disorders ranking first in terms of the number of life years lost to or lived with disability (Costello, Egger, & Angold,

2005). The scope of these problems and their long-term consequences urge us to consider the cost-efficiency of mitigating risks, promoting positive mental health, and preventing anxiety and depression *before they occur*. We propose that after school programs are well positioned to support these goals via social-emotional skills targeting underlying processes for youth with or at risk for internalizing problems. This paper presents a model for integrating emotion regulation skills into after school music programming to mitigate risk for anxiety and depression among vulnerable youth.

Emotion Regulation Deficits are Associated with Youth Anxiety and Depression

Youth anxiety and depression are characterized by deficits in emotional awareness and emotional regulatory strategies, including cognitive reappraisal (ability to reinterpret a situation to change its emotional impact), emotional suppression (ability to inhibit emotional expression), and emotion dysregulation (poorly modulated emotional responses) (Betts, Gullone, & Allen, 2009; Garnefski, Legerstee, Kraaij, van den Kommer, & Teerds, 2002; Suveg, Hoffman, Zeman, & Thomassin, 2009; Zeman, Shipman, & Suveg, 2002). Children with internalizing problems have more difficulty reappraising a situation and are more likely to suppress emotions compared to children without symptoms (Betts et al., 2009; Carthy, Horesh, Apter, & Gross, 2010; Legerstee, Garnefski, Jellesma, Verhulst, & Utens, 2010). Fortunately, emotion regulation deficits are amenable to intervention, and improvements in emotion regulation skills relate to symptom improvement (e.g., Beauregard, 2007; Gortner, Rude, & Pennebaker, 2006; Kaufman, Rohde, Seeley, Clarke, & Stice, 2005; Kendall & Treadwell, 2007; Moscovitch et al., 2011; Muris, Mayer, den Adel, Roos, & van Wamelen, 2009; Reinecke, Hoyer, Rinck, & Becker, 2013; Shirk, Crisostomo, Jungbluth, & Gundmundsen, 2013).

Although research to date indicates that difficulties with emotion regulation are correlates – but not necessarily causes - of anxiety and depression (reflecting a need for longitudinal studies), evidence that deficits are amenable to intervention suggests the potential utility of including emotion-focused components in prevention programming to mitigate risk for internalizing problems. Indeed, children receiving emotion-focused prevention programming have shown decreased negative emotional expression (Izard, Trentacosta, King, & Mostow, 2004). In fact, social-emotional skills such as problem solving and cognitive reappraisal have been identified as common elements not only of anxiety and depression prevention but also of programs focused on preventing other outcomes such as substance use and promoting more broad and general life skills (Boustani et al., 2015). Further, these emotion-focused components have been implemented not only in selective preventive interventions but also in universal programs designed to promote good mental health and prevent anxiety and depressive symptoms among all youth in a setting (e.g., Lock & Barrett, 2003), highlighting their potential for reducing *symptoms* for youth who are already exhibiting them, and reducing *risk* among youth who are not.

Prevention of Childhood Emotional Disorders

Several effective preventive interventions have been developed to reduce risk for anxiety and depression (see reviews, Cuijpers, Van Straten, Smit, Mihalopoulos, & Beekman, 2008; Fisak, Richard, & Mann, 2011). As mentioned above, the most heavily studied and widely cited programs share common ingredients designed to influence the emotion-focused mechanisms of action, including problem solving, cognitive reappraisal,

changing negative thought patterns, and decreasing the avoidance of anxiety-provoking stimuli and negative emotional states (e.g., Ehrenreich-May & Bilek, 2011).

Many prevention programs have been designed for schools (e.g., Barrett, Farrell, Ollendick, & Dadds, 2006; O'Kearney, Kang, Christensen, & Griffiths, 2009), but competing priorities (e.g., academic instruction, standardized test preparation) and limited resources (e.g., time for teacher training) make it difficult to integrate such programs into these settings or sustain them over time. Schools serving economically disadvantaged communities face even more barriers (e.g., Weist & Paternite, 2006; Wilson, Lipsey, & Derzon, 2003). Yet this population is particularly at risk, as the number of vulnerable youth is even higher due to the correlates of poverty (e.g., crime) that contribute to elevations in both anxious and depressive symptoms (Holmes, Yu, & Frentz, 1999; Leventhal & Brooks-Gunn, 2000).

Further, the under-identification of internalizing symptoms in particular among elementary school children and ongoing, widespread stigma associated with receiving mental health services (e.g., Dwyer, Nicholson, & Battistutta, 2006; Hinshaw & Stier, 2008) highlight a need for preventive interventions. This may be particularly true for youth in poverty who, despite experiencing higher rates of anxiety and depression, are less likely to be identified for or receive services (Anderson et al., 2006; Thompson & May, 2006). Developing strategies to mitigate risk for vulnerable youth is paramount.

Leveraging Recreation to Promote Resilience

A few notable programs have used children's recreational activities to both treat and prevent mental health problems. The Summer Treatment Program is well-known for utilizing a sports summer camp format to provide behavioral treatment for children with

attention-deficit hyperactivity disorder (Pelham et al., 1997). While several studies have demonstrated symptom reduction and improved functioning (e.g., Pelham et al., 2000; Pelham et al., 2014), the program is cost and time intensive for staff, thereby limiting its transportability to community settings (Frazier, Chacko, Van Gessel, O'Boyle, & Pelham, 2012). Leaders @ Play was designed for middle school youth with elevated levels of emotional distress; youth received after school training that emphasized core skills of prevention programming (Boustani et al., 2015), including communication, problem-solving, and emotion regulation, and then practiced those skills as junior counselors during the summer camp that followed (Frazier et al., 2014). Leaders @ Play relied heavily on sports and physical activities to teach and practice skills and referred youth were exhibiting more externalizing than internalizing symptoms, reflecting teacher concerns. The Emotion Detectives Prevention Program (Ehrenreich-May & Bilek, 2011) for anxiety and depression used components of the Unified Protocol, in the context of a children's summer camp, to prevent internalizing problems among youth. Programming relied on more traditional mental health activities delivered independent of, rather than infused into, recreational sports and games.

These programs extend beyond traditional treatment and prevention programming, relying on after school and outside of school opportunities to build resilience for youth exhibiting or at risk for psychopathology. They converge on their use of sports and fitness to teach social and emotional skills. By extension, we propose that prevention programs can even more explicitly and intentionally leverage the strengths, natural routines, and recreational activities of after-school programs and that activities such as art, dance, and music lend themselves equally well to providing opportunities for

youth to learn and practice these important skills. Further, while previous studies have shown after-school program staff to be receptive to training and consultation (Frazier et al., 2013), it remains unknown the extent to which youth mental health need may influence the amount and type of consultation necessary and sufficient to create effective programming for those youth. For instance, staff providing after school care in settings where youth exhibit an overall higher level of mental health need may benefit from more frequent training and consultation. Similarly, after school staff with less experience and education related to child development and youth mental health may benefit from different types of support than staff with more experience. Ultimately, being a strong athlete doesn't make you a good coach; by extension, being a talented musician doesn't make you an effective music teacher. Support for less experienced music teachers may promote better outcomes for youth not only in music instruction but also in other domains that are often strengthened by involvement in recreational activities.

The Current Study

The current study represents the early stages of research collaboration with a community based after school program focused on music education and social development for ethnic/racial minority youth or youth living in economically vulnerable communities. Collaboration and goals were two-fold: (a) provide training and consultation to music educators related to youth development, activity engagement, and behavior management, and (b) infuse social-emotional goals into music education via explicit opportunities for youth to learn and practice skills. These two collaboration goals led to the development of initial research questions to begin addressing each goal of collaboration. To support our first collaboration goal, we examined youth and family

mental health and social functioning to document variability across sites that may influence ongoing program development, delivery and consultation. To support our second collaboration goal, we examined the extent to which there was stakeholder enthusiasm for a social-emotional curriculum, as measured by staff attendance and youth participation and enthusiasm. We developed, implemented, and examined music activities that provide explicit and strategic opportunities for youth to learn and practice social-emotional skills. Programming was facilitated by clinical psychology graduate students (N = 9) and implemented over the course of one week, with 162 music students participating (48.5% Latino, 40.9% Black/African American). Although the data collected in this study are limited, we believe they represent a starting place for this work, with the possibility of advancing what we know about risks for anxiety and depression in economically vulnerable and immigrant communities and highlighting the urgent and critical need and under-utilized opportunities for after school programs to promote mental health.

Method

Setting

Miami Music Project (MMP) is a non-profit, urban after-school music education program. MMP'S mission statement reflects their commitment to social development: "Miami Music Project uses music as an instrument for social transformation, empowering children to acquire values and achieve their full potential, positively affecting their society through the study and performance of music." MMP was founded in 2008 as an organization to introduce public school students to classical music. In 2010, MMP began their youth orchestra program, based on the El Sistema model of youth orchestras in

Venezuela. The El Sistema model emphasizes ensemble participation by youth at all levels of musical training, group and individual instruction, peer-to-peer learning, and social development through music. MMP primarily is funded through private foundation grants and individual contributions. Programming is free for families whose children receive free or reduced lunch (and is offered for a nominal fee to families whose children do not), and students who qualify receive donated instruments.

MMP has experienced rapid growth (from 12 students to over 300 students in 5 years), serving four sites (expanded from the two sites that participated in this early work). Music classes are offered at local schools 3-4 days per week, with a variety of formats consisting of individual instruction and small (8-12 youth) and large (20-40 youth) group rehearsals. Youth are divided into classes according to their musical knowledge and skill that, at the time of the current study, included introductory (ages 5-7), novice (ages 7-12), beginner (ages 8-14), and intermediate (ages 8-18) levels. MMP's staff of "teaching artists" (N = 23, with overlap across program sites) consists primarily of professional musicians with training in music performance, though a few staff members have educational background or prior experience in music education. At the time of the study, MMP offered programs in two demographically distinct neighborhoods.

Site 1. Site 1 is located in a middle class, Latino neighborhood and serves primarily Latino students (83% Hispanic/Latino, 16% white, 1% black). A total of 137 students were enrolled at Site 1, with 17 teaching artists providing music instruction. MMP classes are provided at a local middle school; however, most MMP students come from other schools in the area. Parent involvement is high, with a significant proportion

of parents volunteering their time at MMP to assist with administrative needs and special events. Although many students come from middle class backgrounds (44% of students come from families who make $50,000 or more per year; 56% of students come from families who make less than $50,000 per year), music education opportunities in the area are scarce.

Site 2. Site 2 is located in a lower-income, predominantly Haitian-American neighborhood, with 47.5% of the population living below the poverty line. MMP students represent the ethnic composition of the neighborhood (84% black, 11% Hispanic, 5% white). A total of 127 youth were enrolled at Site 2, with 13 teaching artists providing music instruction. MMP classes take place at a local elementary school serving approximately 430 students. Ninety-four percent of students at the school come from economically disadvantaged backgrounds, and 43 percent of students are English Language Learners. Students struggle academically; 80% of students are not proficient in reading by third grade. Further, 28% of students receive two or more behavior referrals over the course of the school year. The majority of students in MMP are current or former students at the school.

University-Community Partnership

Our university team's partnership with MMP began three and a half years ago, initiated by MMP's program director. The investigative team met several times over the course of 10 months with MMP leadership about goals for collaboration. Early meetings prioritized relationship building and needs assessment, and meeting agendas at this stage were largely driven by MMP leadership, reflecting values inherent to community-based research (e.g., Dubois et al., 2011). Meetings lasted 90 minutes to two hours and were

scheduled monthly until the team arrived at a decision to prioritize two partnership goals: (a) Support MMP teaching artists via training and consultation and (b) Infuse social-emotional goals into music education via explicit opportunities for youth to learn and practice skills.

First, MMP sought collaboration to support their teaching artists around enhancing student engagement and managing difficult behaviors. Specifically, they wanted to empower teachers by integrating into their initial and ongoing training information about youth development and mental health, principles of behavior, and strategies for family involvement. Three graduate students, each assigned to a Teaching Artist, followed the investigative team's prior consultation framework (Frazier et al., 2007), providing weekly, real-time support for Teaching Artists. Consultation focused on the development of clear rules, appropriate routines and instruction, and reward systems (e.g., Good Behavior Game; Barrish, Saunders, & Wolf, 1969). Graduate students met weekly with Teaching Artists before or after class to discuss implementation and problem-solve challenges. In several cases, Teaching Artists revealed considerable concern about and difficulty addressing students' social and mental health needs. The investigative team's experience in MMP classrooms led to consideration for the extent to which the level of student mental health need across classes and sites may influence and inform the type of consultation required to meet MMP goals related to teacher support and the types of interventions and strategies recommended for classroom implementation. Toward that end, we developed a preliminary research question to begin addressing the first partnership goal: to what extent are emotion regulation deficits and internalizing symptoms elevated and variable across sites served by MMP?

Partnership Goal 1: Support MMP Teaching Artists via training and consultation

Research Question 1: To what extent are emotion regulation deficits and internalizing symptoms elevated and variable across sites served by MMP?

Participants. MMP youth (*N* = 77 consented; *N*=61 completed; 69% Site 1 and 31% Site 2) and their parents provided information on mental health need. Youth ranged in age from 5-16 (*M*=9.67±2.66). Twenty-five participants (41%) were male. Youth were predominantly Hispanic/Latino (60.8%) or Black/African American (35.3%). Eighty-nine percent of parent participants were mothers. The majority of parent participants were over the age of 35 (79%). Seventy-three percent of parents had completed a 2-year college degree or higher. Half of parents (51%) reported a family income of $50,000 or greater, while nearly a quarter of parents (24.4%) reported a family income of $21,000 or below. Parents' preferred languages included English (31.1%), Spanish (32.8%), and Haitian Creole (6.6%), with many parents endorsing more than one preferred language (29.5%). The majority of parent participants (78.8%) had emigrated to the U.S.

Measures. Measures were selected to cover a wide range of mental health problems (internalizing and externalizing problems), social functioning, and emotion regulation strategies. Measures were selected to do two things: (a) assess the mental health need broadly to support consultation to Teaching Artists, and (b) examine variability in emotion regulation, reflecting our second goal of integrating social-emotional skills into the music curriculum. Specific measures were selected due to their strong psychometric properties, low burden, widespread use with diverse samples, and availability in multiple languages. All measures were offered in both English and Spanish, as they had been reliably translated and reported to be psychometrically valid

with Spanish-speaking populations. Forty-two percent (N = 18) of parents elected to complete measures in Spanish. All youth completed measures in English. The only measure available in Haitian Creole was the Hopkins Symptom Checklist (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). Although the investigative team had access to translation services, we determined that it would be premature to use such measures as determinants of youth mental health and social functioning without determining the suitability of the other measures among the Haitian Creole-speaking population in a larger trial investigating psychometric invariance. Thus, to include parent participants who spoke Haitian Creole and also include their children, parent participants who completed measures in Haitian Creole only (N = 5) completed the HSCL and demographic information and provided consent for their children to participate.

Revised Children's Anxiety and Depression Scale-Short Version (RCADS-25; Muris, Meesters, & Schouten, 2002). The RCADS-25 is a 25-item informant-report measure of youth anxiety and depressive symptoms. Youth age 8 and above and their parents rated how often they experience a particular symptom on a 4-point scale (0 = never, 1 = sometimes, 2 = often, 3 = always). The RCADS-25 contains 5 subscales that map onto diagnostic criteria for anxiety and depressive disorders (separation anxiety disorder, social phobia, generalized anxiety disorder, panic disorder, and major depressive disorder). Additionally, the RCADS-25 includes cut-off scores for the 10th percentile to help identify youth with high levels of anxiety and/or depression. The RCADS-25 shows acceptable reliability in English and Spanish (Muris et al., 2002; Sandín, Valiente, & Chorot, 2009). Youth were considered to have elevated internalizing symptoms compared to norms if they were at or above the 10th percentile on any subscale

by either parent or youth report. Total scores (sum across all items) on the RCADS were used for comparisons between sites. Internal consistency for the current sample was acceptable (Cronbach's α=.77 for parent report, Cronbach's α=.91 for youth report).

Emotion Regulation Questionnaire: Child and Adolescent (ERQ-CA; Gullone & Taffe, 2012). The ERQ-CA is a 10-item self-report questionnaire used to assess children's emotion regulation strategies. The scale is comprised of two subscales: cognitive reappraisal (6 items, e.g., I control my negative feelings about things by changing what I'm thinking about) and emotional suppression (4 items, e.g., I keep my emotions to myself.). Children rate how much they agree with each statement on a 5-point scale (1=strongly disagree, 2=disagree, 3=half and half, 4=agree, 5=strongly agree), and scores are averaged across items on each subscale. Initial investigations have shown strong psychometric properties (Gullone & Taffe, 2012). Internal consistency for the current sample was acceptable (Cronbach's α=.88 for the cognitive reappraisal subscale, Cronbach's α=.76 for the emotional suppression subscale). Scores were compared to a normative sample (Gullone, Hughes, King, & Tonge, 2010) with a cut-off of one standard deviation from the mean.

Strengths and Difficulties Questionnaire (SDQ Youth and Parent Version; Goodman, 2001). The SDQ is a 25-item informant-report measure of youth mental health symptoms. Youth age 8 and above and their parents independently rated how well a particular statement characterized the child (0 = not true, 1 = somewhat true, 2 = certainly true). The SDQ contains a prosocial behavior subscale as well as four clinical subscale scores (hyperactivity/inattention, emotional symptoms, conduct problems, peer problems) that yield a Total Difficulties score. The SDQ has demonstrated good psychometric

properties in English and Spanish (Gómez-Beneyto et al., 2013; Goodman, 2001). Internal consistency for the current sample was acceptable (Cronbach's α=.68 for parent report, Cronbach's α=.78 for youth report). Scores on the emotional symptoms and peer problems subscales were used as measures of internalizing symptoms, while scores on the hyperactivity/inattention and conduct problems subscales were used as indicators of externalizing symptoms. The prosocial behavior subscale was used as a measure of youth's social functioning. Scores were compared to normative data from the National Health Interview Survey (2001), and a cut-off of two standard deviations was used.

Social Skills Improvement System (SSIS; Gresham & Elliott, 2008). The SSIS is a 51-item parent-report measure of youth adjustment. The SSIS consists of three scales: social skills, problem behavior, and academic competence. Parents rated the frequency of their child's behavior for each item on a 4-point scale (0 = never, 1 = seldom, 2 = often, 3 = almost always). The SSIS has demonstrated good psychometric properties in English and Spanish (Gresham & Elliot, 2008; Gresham, Elliott, Vance, & Cook, 2011; Schneider, 2012). Scores on the problem behavior subscale (α =.94) and social skills subscale (α =.98) were used as as measures of youth social functioning. Scores were compared to a national sample representative of the 2006 US Census (U.S. Census Bureau, 2006).

Hopkins Symptom Checklist-25: Depression subscale (HSCL-25; from the HSCL-25, Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). The HSCL-25 is a 25-item parent self-report measure of anxiety and depressive symptoms. Respondents rated the degree to which each symptom has characterized them over the past week on a 4-point scale (1=not at all to 4=extremely). In the current study, only items assessing

depression were administered (a total of 15 items) to minimize burden. The mean score across items was used to determine "caseness" with a cut-off score of 1.75 (Winokur, Winokur, Rickels, & Cox, 1984). The HSCL-25 has been validated against diagnostic criteria for major depressive disorder according to DSM-IV (Kaaya et al., 2002) and has been used with diverse populations, including Haitian caregivers (Fawzi et al., 2010). Internal consistency was acceptable for the current sample (Cronbach's α=.80).

Procedure.

Participant recruitment and data collection. Researchers attended parent events (e.g., MMP parent orientation, scheduled family nights, concerts) and were present during drop-off and pick-up times to provide families with an overview of the study purpose and procedures. Families had the opportunity to ask questions and provide written consent for their own and their children's participation. Following consent, parents either completed measures at their MMP site or brought them home and returned them to research staff at drop-off or pick-up. Youth completed measures at designated times pre-arranged with teaching artists during the after school program and were compensated with a small prize. Parents and youth completed measures within 15-30 minutes.

Partnership Goal 2: Infusing social-emotional goals into music education

Research Question 2: To what extent is there stakeholder enthusiasm for a social-emotional curriculum, as measured by staff attendance and youth participation and enthusiasm?

To begin addressing the second partnership goal, we developed a second research question: to what extent is there stakeholder enthusiasm for a social-emotional

curriculum, as measured by staff attendance and youth participation and enthusiasm? MMP sought collaboration to prioritize and enhance the social development goals of their program. Specifically, they wanted to infuse routine music instruction with more explicit and intentional opportunities for students to learn and practice social-emotional skills highlighted by their stated mission. Toward this goal, they asked our investigative team to develop and pilot a social-emotional curriculum called "Music Games". Discussions with MMP leadership centered on particular skills that would promote the organization's core values of respect, self-esteem, perseverance, teamwork, and compassion. Aligning these with common elements from evidence-based prevention programs (Boustani et al., 2015) led to the following three skills: feelings identification and relaxation techniques, cognitive change strategies, and problem solving.

Feelings identification and relaxation techniques. This skill focused on increasing youth awareness of their feeling states and accompanying reactions in their bodies, as well as techniques to help them handle stress and anxiety. First, reflecting effort in prevention science to increase youth emotional awareness (e.g., Izard et al., 2004), youth listened to and identified how different excerpts of music made them feel, using music clips to elicit particular feelings (e.g., sadness, fear, joy), for example, to help youth think about reactions in their bodies (e.g., heart beats faster when listening to a scary music clip). Second, relaxation training was introduced by using the length of music notes (whole, half, quarter) to demonstrate the effects of different types of breathing on mood and to introduce and practice relaxation skills. In music, whole notes represent 4 counts, half notes represent 2 counts, and quarter notes represent 1 count.

Students breathed in and out to the count of different notes and reflected on the way that it made them feel. Then, whole notes were used to introduce and practice deep breathing.

Cognitive change. This skill focused on perspective taking and teaching youth about influences of thoughts on feelings and behaviors. Cognitive change strategies are common to both anxiety treatment (Silverman et al., 2008) and anxiety prevention programs (Boustani et al., 2015). Activities included playing/singing a melody in a major and minor key, discussing how these different ways of "thinking" about the melody can change how we feel about it, and using movie clips to demonstrate how thoughts (including biased attributions of ambiguous cues) can influence emotions and actions.

Problem solving. This skill teaches youth ways to approach and solve problems, including defining the problem, generating solutions, evaluating the feasibility and likely outcome of each potential solution, choosing a solution, and evaluating the results. Problem solving is common across prevention programs (e.g., anxiety, suicide, violence, life skills, sexual health) and, in fact, emerged as the most common element across a number of different types of evidence-based youth prevention programs (Boustani et al., 2015). Youth learned and practiced problem solving via the acronym SONGS (i.e., identify the Situation, explore your Options, Narrow your options, Go for the best one, Sit back and evaluate how it went) and put the steps into practice through games.

Implementation.

Activity participation and format. All youth enrolled in MMP were eligible and encouraged to participate in one week of Music Games. Although the long-term vision was to integrate Music Games into regular instruction, implemented by teaching artists, for this pilot work MMP leadership asked the investigative team to plan and deliver a

single week of activities that would follow their spring concert. Thus, MMP students and teaching artists both were encouraged but not required to attend (and teaching artists were not compensated for participation). Graduate students facilitated activities in pairs or individually with the help of MMP teaching artists and staff. Graduate student facilitators were assigned to sites and groups based on their availability. Group size varied from 4 to 20 MMP students. MMP students participated in three days of activities throughout the week during regularly-scheduled MMP programming, participating each day in a different set of activities targeting each of the three skills (e.g., feelings identification). For example, students in the introductory level participated in Feelings Identification activities on Tuesday, Cognitive Coping activities on Wednesday, and Problem Solving activities on Thursday. Activities were designed to fit within the 45-minute rehearsal time, and graduate students followed a prescribed agenda for each day.

Facilitator characteristics and training. Clinical psychology graduate students (N = 8) were in their first (N = 1), second (N = 5), or third year (N = 2) of doctoral training. They volunteered to receive training and implement activities toward the goal of acquiring community-based clinical research experience. Graduate students had variable prior experience treating youth with anxiety and depression (M = 0.88 years, SD = 1.03, Range: 0-3 years), and variable prior experience offering community-based intervention (M = 1.12, SD = 2.40, Range 0-7 years). Facilitators received activity descriptions and agendas, and were asked to familiarize themselves with the activities prior to a 1-hour group training, facilitated by the lead investigator (1st author), that included discussion and role-play. Training also included brief information on the university-community partnership, rationale underlying the study, participating MMP sites (demographics of the

community, background of the staff, needs of the youth), professional expectations in the community, and managing disruptive behavior (e.g., through use of the Good Behavior Game; Barrish, Saunders, & Wolf, 1969). With the exception of two students, each graduate student observed a more experienced graduate student prior to leading activities themselves. Ahead of each day's activities, the first author met with all graduate student facilitators to review skills and activities for that particular day and offer feedback from the prior day. Although feedback from in vivo supervision was not feasible, graduate students took detailed notes for each class they facilitated in order to problem-solve at the end of the day with the first author (to prepare for the next day's activities). After the week's activities, all graduate students met for a 1.5-hour clinical supervision about the week's activities.

Measures.

Participation. Youth and staff attendance during Music Games was recorded.

Youth Satisfaction. Youth completed 4 items (5 minutes) measuring overall satisfaction and student preference for activities. Students rated how much they liked each day's activities on a 4-point scale from 0 (sad face = did not at all like) to 3 (smiley face = liked very much). Students also listed their favorite and least favorite activities and indicated whether they would choose to participate in these activities again.

Facilitators and Barriers. Graduate students completed an open-ended questionnaire about their overall impressions, classroom attendance, confidence with implementation, facilitators and barriers to implementation, and suggestions for improvement.

Data collection and analysis. All youth completed satisfaction measures after each day's activities. All graduate students completed measures related to facilitators and barriers to implementation following each set of activities. Data were collected and archived as part of Music Games to inform iterative revisions and additions to activities. Descriptive statistics provide preliminary results for acceptability and feasibility.

Results

Partnership Goal 1: Support MMP Teaching Artists via training and consultation

Research Question 1: To what extent are emotion regulation deficits and internalizing symptoms elevated and variable across sites served by MMP?

Anxiety and depression. Results from the SDQ revealed 10 youth (of 60, 17% of those where either parent or youth completed the SDQ) were two standard deviations or higher above the mean on either the emotional subscale or the peer problems subscale (either youth or parent report). There were no differences across sites on SDQ scores by either parent [t (48) = 1.10, p = .278] or youth self-report [t (35) = 1.08, p = .287]. Using either parent or youth report on the RCADS-25, 66% of children (39 of 59) were at or above the 10^{th} percentile on any of the five subscales. More youth were above the cutoff for separation anxiety (26 of 59) and social phobia (23 of 59) symptoms than for generalized anxiety (7 of 59), panic (9 out of 59), or major depression symptoms (10 of 59). Site differences emerged by youth self-report [t (34) = 2.29, p = .029]. Youth at Site 2 reported more anxiety and depression symptoms (M = 24.62, SD = 10.32) than youth at Site 1 (M = 15.87, SD=11.39). There were no differences across site by parent report [t (48) = 0.20, p = .841].

Emotion regulation. Results from the ERQ-CA revealed 7 youth (19% of 36 youth who completed the self-report measure) were one standard deviation below the mean for the cognitive reappraisal subscale, indicating low use of cognitive reappraisal strategies. Eleven youth (31% of 36 youth) were one standard deviation above the mean for the emotional suppression subscale, indicating elevated use of emotional suppression strategies. Site differences emerged for the cognitive reappraisal subscale [$t(34) = 2.08$, $p = .045$]. Youth at Site 2 reported more use of cognitive reappraisal strategies ($M = 4.08$, $SD = 0.73$) than youth at Site 1 ($M = 3.28$, $SD = 1.26$). No site differences emerged for the emotional suppression subscale [$t(34) = 0.17$, $p = .867$).

Externalizing behavior. Results from the SDQ revealed 9 youth (15% of 60 youth) two standard deviations or higher above the mean on either the conduct problems subscale or hyperactivity/inattention subscale. There were no site differences by either parent report [$t\ (48) = 1.17$, $p = .248$] or youth self-report [$t\ (35) = 1.74$, $p = .090$]. Results from the SSIS revealed 5 youth (8.3% of 60 youth) above average (i.e., standard score above 115) on the problem behaviors subscale. There were no differences across sites [$t\ (48) = 1.70$, $p = .097$].

Social functioning. Using either parent or youth report on the SDQ, 4 youth (7% of 60 youth) were two standard deviations or more below the mean, indicating low levels of prosocial behavior. Site differences emerged for youth self-report [$t\ (35) = 3.21$, $p = .003$]. Youth at Site 2 reported higher levels of prosocial behavior ($M = 9.54$, $SD = 1.13$) than youth at Site 1 ($M = 7.50$, $SD = 2.13$). There were no differences for parent report [$t\ (48) = .036$, $p = .971$]. Results from the SSIS revealed only one youth with a below

average score (i.e., standard score below 85) on the social skills subscale. There were no differences in social skills subscale scores across sites [t (48) = 1.06, p = .295].

Parental depression. Thirteen out of the 53 parents (25%) who completed the HSCL reported elevated depression levels (i.e., scores above a cutoff of 1.75, indicative of the likely presence of depression; Winokur et al., 1984). Common symptoms endorsed [i.e., >10% of the sample endorsed a particular item as either a 3 (quite a bit) or a 4 (extremely)] included "feeling low in energy or slowed down," "poor appetite," "difficulty falling asleep or staying asleep," "worrying too much about things," and "feeling everything is an effort." There were no differences across sites [t (48) = .91, p =.368].

Partnership Goal 2: Infusing social-emotional goals into music education

Research Question 2: To what extent is there stakeholder enthusiasm for a social-emotional curriculum, as measured by staff attendance and youth participation and enthusiasm?

Participation. Sixty-one percent of eligible students (youth enrolled in MMP) across sites participated in at least one day of social activities, including 59% of students (81 of 137) at Site 1 and 64% of students (81 of 127) at Site 2 for a total sample of N=162. Participating youth represented all levels of instruction. Five staff (three Teaching Artists and two administrative staff) of 26 eligible (19%) participated in Music Games week. Of those, three primarily observed activities, while two staff provided assistance with behavior management and co-facilitated activities.

Youth satisfaction. Youth endorsed high overall levels of satisfaction with activities; ninety percent of youth reported they liked or liked very much the activities

that were presented (M = 2.31, SD = 0.74). Ninety-six percent of youth indicated they would participate in activities again if they were offered. Rates of satisfaction varied by age group (75% for introductory students, 91% for novice students, 95% for beginner students, and 85% for intermediate students) and by type of activity (95% for feelings identification, 94% for cognitive change strategies, and 89% problem solving).

Facilitators and barriers. Graduate students overall (88%; 7 of 8) reported confidence with activity implementation and high levels of student engagement. Challenges were reported with younger age groups (ages 5-8 in particular posed challenges with comprehension of the material as presented) and in groups where individual students displayed more severe levels of disruptive behavior.

Discussion

Adhering to principles and values of community-based intervention research (Dubois et al., 2011), the current study focused on two goals through collaboration with a community-based after school music program. First, we conducted a family mental health needs assessment to inform ongoing consultation to teaching artists around youth development, activity engagement and behavior management. Results revealed considerable mental health need among youth and their families that continues to inform ongoing teacher training and consultation, with a focus on the particular needs of individual communities. Second, we developed, implemented, and examined music activities through which students had the opportunity to learn and practice social-emotional skills, and we examined preliminary data on acceptability and feasibility to inform iterative revisions to the curriculum content and delivery format.

Partnership Goal 1: Support MMP Teaching Artists via training and consultation

Research Question 1: To what extent are emotion regulation deficits and internalizing symptoms elevated and variable across sites served by MMP?

Nearly two thirds of youth reported heightened levels of anxiety and depression symptoms (at or above the 10th percentile). One quarter of parents also indicated elevated depression symptoms (i.e., a score indicating "caseness"), both reflecting needs that exceed prevalence rates reported in the literature (Costello et al., 2003). Perhaps this is not so surprising, as youth and parents in these communities face several challenges that could contribute to elevated rates of anxiety and depression. Many youth are the children of immigrants or are themselves immigrants, and consequently, many families experience difficulties associated with immigrant status. For instance, parents often travel back and forth between the United States and their home country, with separations and reunifications leading to increased stress and contributing to anxiety and depression (Rusch et al., 2013). In addition, language barriers may interfere with parents' ability to support their children's academic progress (e.g., challenges helping with homework and communicating with teachers; Turney & Kao, 2009). Further, particularly for Site 2, a majority of youth are often from economically disadvantaged families, where parents may be under-employed and lack knowledge of and access to resources (e.g., Williams & Sanchez, 2013). Indeed, poverty-related stress has been associated with increased levels of anxiety and depression (e.g., Holmes et al., 1999). This may in part explain why youth at Site 2 reported even higher levels of anxiety and depression than youth at Site 1. The fact that there were no differences across sites for parent-reported child symptoms may reflect the under-recognition by parents of underlying internalizing problems, reflected in

low to moderate correlations with child-reported symptoms (e.g., De Los Reyes et al., 2015).

These results suggest potential challenges for teaching staff whose performance background and limited experience with youth or teaching leave them unprepared to respond to disengaged behaviors that can accompany an internalizing profile. Training after school staff on youth development and strategies to engage students with mental health needs may help ensure that youth derive full benefits from participating in programs. Similar to training for parents whose children experience internalizing symptoms, teaching artists can learn about acceptance, encouragement, and basic behavioral principles (e.g., related to negative reinforcement and avoidance) that in turn may help them to create a classroom environment characterized by positive relationships and low-stakes opportunities for students to face their fears (e.g., practice performing in front of an audience). Within their classrooms, teaching artists could emphasize that mistakes are learning opportunities (rather than striving for perfection), celebrate and reward effort rather than outcome, help students appreciate and develop joy for music (which itself holds benefit for youth), and seek opportunities to leverage peers as positive models, rehearsal partners, and agents of change.

Further, site differences in mental health need, particularly for internalizing problems that are often overlooked and less easily observed than externalizing behaviors, suggest that the content and impact of training and consultation models may benefit from additions or modifications that address unique needs of these communities, including an explicit focus on how to recognize symptoms of anxiety and depression and how to make appropriate referrals for youth in need. There is a growing literature related to training

school teachers to recognize mental health signs and symptoms and serve as gatekeepers to the mental health system (Levitt, Saka, Romanelli, & Hoagwood, 2007; Wyman et al., 2008). Extending this to after school time, music educators may be well-positioned for this role, as they spend considerable time with youth each week and have an opportunity to observe them in a more social setting.

In addition to elevated rates of internalizing problems, youth reported elevated rates of emotion regulation difficulties. Specifically, 19% of youth indicated low use of cognitive reappraisal compared to norms, while 31% of youth indicated over-use of emotional suppression. Given the association of these emotion regulation variables with increased rates of internalizing problems, interventions directed at strengthening emotion regulation may be particularly well-positioned to arm youth with skills that can help prevent or minimize internalizing problems.

Somewhat surprisingly, elevated rates of externalizing behavior were lower than those of internalizing problems, with 15% of youth showing elevated symptoms on the SDQ and no differences across sites. The latter finding in particular contradicted our expectations, as previous work has shown elevated rates of externalizing behavior among youth in high poverty communities (e.g., Henninger & Luze, 2014). It may be that parents and youth at Site 2 viewed higher levels of externalizing behavior as more normative within their community (Dirks et al., 2010), such that a particular behavior that may be viewed as problematic at Site 1 may be viewed as acceptable by parents and youth at Site 2. On the other hand, since the current study used only a screening measure of externalizing symptoms, it is also possible that more sensitive measures would yield a different outcome.

Partnership Goal 2: Infusing social-emotional goals into music education

Research Question 2: To what extent is there stakeholder enthusiasm for a social-emotional curriculum, as measured by staff attendance and youth participation and enthusiasm?

With regards to acceptability and preliminary feasibility of the integrated curriculum, 61% of eligible students participated in Music Games. By request of MMP leadership, we implemented Music Games during the week that followed the spring concert, which also coincided with state standardized testing. Attendance was encouraged but not mandatory. The rationale was that priority on social development would not interfere with students' preparation for the concert, and children whose parents preferred to bring them home after school while testing was in progress wouldn't miss rehearsal time. However, it should be noted that attendance exceeded estimates for other after-school programs nationally (e.g., Learning Point Associates, 2011), suggesting the utility of integrating mental health promotion with after-school programming.

Attendance rates for Music Games may reflect parents' reliance on after-school programs for childcare during work hours, which would not have changed during the week of standardized testing. This may particularly be the case for students at Site 2, where students primarily came from the school where the site is located. However, particularly for Site 1 where parents must drive their children to the program, the rate of attendance likely reflects interest by parents in these explicit skills building opportunities. Overall, though, we are encouraged by high levels of enthusiasm among participating students and staff, though we acknowledge that these results should be interpreted cautiously reflecting non-attendance and self-selection.

We did not systematically collect information from families about why their children did not attend, but the model is moving toward better integration of music education and social-emotional skills building, with weekly activities, homework, and opportunities for teaching staff to integrate skills throughout the rest of the curriculum (e.g., teachable moments, modeling). Youth in MMP will participate in 15-minute activities weekly designed explicitly to focus on building social-emotional skills. Although 15-minutes is relatively brief each week, fifteen-minute segments already represent one-third of music instruction (i.e., one-third of a class), reflecting MMP's significant investment and insight regarding feasibility and sustainability. In addition, homework assignments present opportunities for youth to practice skills, teach their parents, and in turn be reinforced at home, as supplemented by parent meetings introducing the skills and ways to reinforce their children using them. Anecdotally, during Music Games week, several parents expressed a great deal of enthusiasm to the investigative team, including an interest in designing a parent session for parents to learn the skills and activities delivered to their children so that they can model and reinforce them at home. Teaching artists also will model the skills, reinforce effort to use the skills, and provide positive and instructive feedback, increasing opportunities for youth to practice and observe the skills being taught. Importantly, this integrated model (versus Music Games week) is expected to reach all youth who regularly attend MMP. Finally, the model reflects a robust literature that suggests short, repeat opportunities for practice encourages skill acquisition and promotes better learning outcomes than extended practice sessions over a shorter timeframe (Pashler, Rohrer, Cepeda, & Carpenter, 2007).

Likewise, although MMP staff was encouraged to observe and participate in Music Games, only five staff (of 26) attended any Music Games activities. Many staff, although they expressed interest, did not attend because they were not compensated for their time. Several MMP staff members are professional musicians, and they looked for gigs and performances to compensate for income lost that week. It thus reduced the information we could obtain from staff about their views of the integrated activities, their comfort with co-facilitation, and willingness to implement activities in their classrooms. Integrating weekly activities focused on mental health promotion would mean a task shift for teaching artists, with a new skill set and requisite workforce development, and this has become a direct focus of the ongoing work.

University-Community Partnership

Results from the needs assessment have informed conversation with MMP administration around the priority on social emotional skills and the nature, format, and delivery of social development activities. In our ongoing discussion with MMP, we have highlighted results from the current study suggesting high rates of internalizing problems, and these conversations have informed social-emotional curriculum development by focusing our conversation on skills aimed at improving emotion regulation, promoting good mental health and reducing and preventing anxiety and depression. However, conversations with MMP administration alone will not promote the adoption of an integrated social-emotional music curriculum. The extent to which teaching artists see these activities and the overall goals of promoting good mental health as similar to or well aligned with their current teaching practice will influence the likelihood of implementation and sustainability (Schoenwald & Hoagwood, 2001). Further

endorsement by and technical support for teaching artists from MMP leadership, reflecting their commitment to social development goals, also will encourage adoption of these new practices.

To promote adoption, implementation and sustainability, incorporate expertise of MMP stakeholders and build upon parents' expressed interest to increase involvement, we are currently adhering to a community-based participatory research framework to involve teaching artists and parents in shared decision-making around curriculum development and study design. The current structure includes three Consorts (i.e., community advisory boards) consisting of parents and teaching artists at each site, one Youth Consort, and a central Steering Committee consisting of one parent and one teaching artist representative from each Consort, one youth representative, MMP's program director, and the first author. Conversations with teaching artists and parents thus far have focused on community needs and priorities regarding mental health promotion and ways to increase youth's coping skills and teaching artists' ability to implement social development activities in their classrooms.

In addition to developing activities for the curriculum, we are building a training model that supports teaching artists to develop comfort, confidence, and competence implementing activities in their classrooms. We are discussing and developing ways by which teachers can implement and model emotion regulation, cognitive coping, and problem solving throughout routine music activities (e.g., by using problem solving steps aloud to resolve conflicts during class time), maximizing opportunities for students to observe, learn and practice the skills. We are hopeful that such a model will not only improve the MMP experience for youth currently participating, but also that products of

the current partnership (i.e., activities and teaching artist training) will be sustainable such that MMP can incorporate them into their infrastructure, and generalize them to additional sites, for many years to come.

Limitations, Lessons Learned, and Future Directions

The work presented here represents the evolution of a university-community collaboration to infuse mental health promoting skills into music education curriculum. The lack of availability of measures in Haitian Creole limited what could be learned about family mental health needs at Site 2. For this reason, as part of our continued collaboration with MMP, we currently are working on translating and validating a series of mental health measures into Haitian Creole to increase eligibility for participation among all families.

Additionally, there is a potential selection bias regarding participants who completed the measures, given that our sample was considerably smaller than the number of youth who participated in the week of Music Games. Further, given the early and iterative stage of curriculum design, we did not measure adherence to Music Games, or impact on emotion regulation or internalizing outcomes, as these were viewed by both the research team and MMP as premature. However, these preliminary data have informed important modifications to the format and content of the intervention activities, and more rigorous and systematic study is ongoing.

Finally, although the goal of the integrated curriculum was to adapt current skills building activities to fit a musical context, some skills lent themselves to this more readily than others. For example, feelings identification and relaxation training were more easily incorporated into musical activities than cognitive coping, for which we

ended up relying more on movie than music clips per se. Perhaps it's not as important that all skills rely on music, but instead that all teaching artists model and reinforce the targeted skills during natural routines of music instruction. For example, teaching artists could use the "think aloud" strategy to model problem solving steps to identify a solution to a problem that arises during regular class time.

Informed by what we've learned here, collaboration with MMP continues to prioritize the original goals of supporting teaching artists and developing an integrated social-emotional and musical curriculum. Teaching artist training has expanded to include general training in youth development, behavioral principles, student engagement, and classroom management. The investigative team continues to offer real-time support for teaching artists who experience particularly challenging classes (e.g., where a higher proportion of students demonstrate disengaged or disruptive behavior). This real-time support by clinical psychology graduate students has included implementation of classroom management strategies, education and discussion about recognizing mental health problems, and referring youth to community mental health resources when appropriate.

Summary

Anxiety and depression among youth are common but preventable. For youth vulnerable to internalizing symptoms but with limited access to services, after school programs may offer mental health promoting skills that can mitigate risk, build resilience, and minimize symptoms and impairment. The university-community collaboration presented here extends work done primarily in sports recreation to an after school music program, demonstrating preliminary acceptability and feasibility of an integrated social-

emotional music curriculum. Attention to population-specific needs is warranted to ensure program staff is adequately equipped to handle the unique challenges facing each community. Data presented herein represent a starting place for this work, and we believe they advance what we know about risks for internalizing symptoms, in particular, in economically vulnerable and immigrant communities, highlighting the needs, opportunities, and urgency for mental health promotion after school.

III. TESTING THE MEASUREMENT INVARIANCE OF THE STRENGTHS AND DIFFICULTIES QUESTIONNAIRE ACROSS SOCIOECONOMIC GROUPS

This manuscript will be submitted to the Journal of Child Psychology and Psychiatry, and thus adheres to its use of APA 6th Edition formatting guidelines.

Hedemann, E.R., Frazier, S. L., Dirks, M., A., & Rusch, D. (in preparation). Testing the Measurement Invariance of the Strengths and Difficulties Questionnaire across Socio-economic Groups.

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Abstract

Previous research has demonstrated that youth living in urban poverty experience higher rates of mental health problems than youth from affluent backgrounds. However, the extent to which measures of mental health symptoms are invariant across these groups has not been investigated. The current study examined the measurement invariance of the Strengths and Difficulties Questionnaire (SDQ), a commonly-used mental health screener, across groups representing different levels of socioeconomic opportunity. Six hundred fifteen parents completed the SDQ regarding their children's mental health and behavior. A series of increasingly restrictive confirmatory factor analyses were conducted to test for measurement invariance. Results suggested full configural, metric, strong, and strict invariance of the SDQ across socioeconomic groups, meaning the SDQ was interpreted similarly by parents of different socioeconomic means. The SDQ appears to be a psychometrically-valid instrument for measuring levels of mental health need among diverse socioeconomic groups.

Keywords: measurement invariance, assessment, urban poverty, & mental health need

Testing the Measurement Invariance of the Strengths and Difficulties Questionnaire Across Socioeconomic Groups

Introduction

Mental health problems are common among youth, with an annual prevalence of approximately 13% for any mental disorder (Merikangas et al., 2010). Rates are even higher for youth living in poverty compared to other youth (e.g., Storch, Nock, Masia-Warner, & Barlas, 2003; Van Voorhees et al., 2008), perhaps reflecting the risks associated with home, school, and neighborhood difficulties that accompany economic hardship (e.g., Cecil, Viding, Barker, Guiney, & McCrory, 2014; Delgado, Killoren, & Updegraff, 2013; Roy & Raver, 2014). Indeed, youth who experience family dysfunction (Bannon et al., 2012; Skeer et al., 2011; Washington et al., 2017) or school difficulties (Lester, Waters, & Cross, 2013; Rose, Lindsey, Xiao, Finigan-Carr, & Joe, 2017; Schlack, Ravens-Sieberer, & Petermann, 2013), or who are exposed to high rates of neighborhood crime and violence (Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009; Kelly, 2010; Zinzow et al., 2009) are more likely to report high levels of mental health problems and substance use compared to youth who do not experience these life stressors. Economic stress and poverty have been associated not only with concurrent mental health problems, but also with the ensuing or onset of problems later in life (Lee, Wickrama, & Simons, 2013; Manseau, 2014).

Despite these well documented mental health disparities, there has been limited consideration for how measures of mental health symptoms may be differentially interpreted across economic groups. Yet, there are several meaningful implications should differences emerge. If economically vulnerable youth understand or interpret

mental health problems – or assessment tools that screen for problems – differently from their peers, then the extent to which they are indeed experiencing symptoms or impairment warranting intervention could be overestimated or, worse, underestimated. Underestimating mental health need may impact funding allocated to public and community mental health agencies who serve families living in poverty. On the other hand, overestimating need may contribute to stereotypes of some groups as struggling more compared to other groups, yielding disproportionate rates of mental health difficulties, when in fact their actual level of mental health need is comparable to other groups.

Several questionnaires have been developed to assess mental health symptoms among youth (e.g., Child Behavior Checklist, Achenbach & Rescorla, 2001; Pediatric Symptom Checklist, Jellinek et al., 1988). The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) is one of the most widely used mental health screeners across research, clinic, and educational settings, with over 4,200 SDQ-related articles published as of January 2017 (sdqinfo.org, 2018). The SDQ is a 25-item informant-report measure of youth mental health symptoms, with respondents rating how well each statement characterizes a child using a 3-point scale (0 = not true, 1 = somewhat true, 2 = certainly true). It is available for children of different ages (ages 2-4, 4-10, and 11-17) and in formats for youth self-report, parent report, and teacher report. Subscales include emotional symptoms (primarily anxiety and depression), conduct problems, hyperactivity/inattention, and peer relationship problems, which may be summed to provide a total difficulties score (Goodman, 2001). The SDQ also includes several questions on prosocial behavior, as well as an impairment supplement to assess

chronicity, impact, personal distress, and extent to which the youth's reported symptoms interfere with family, school, or peers. The SDQ has demonstrated good psychometric properties (e.g., Goodman, 2001) and been translated into over 75 languages. It has been used with both clinical (e.g., Goodman, Renfrew, & Mullick, 2000) and community samples (e.g., Goodman & Goodman, 2009).

Several studies have documented higher rates of parent- and youth-reported mental health problems on the SDQ among youth whose families experience economic stress (Bøe et al., 2014; Bøe, Øverland, Lundervold, & Hysing, 2012; Capistrano, Bianco, & Kim, 2016). However, to our knowledge, only one study has investigated measurement invariance of the SDQ across income groups. He, Burstein, Schmitz, and Merikangas (2013) reported that the SDQ youth-report was invariant across gender, age, race/ethnicity, and income subgroups among a nationally-representative sample of U.S. adolescents. However, regarding income, families were categorized dichotomously only as falling above or below a cutoff that was three times the poverty line. While this study provides initial evidence for the invariance of the SDQ across comparatively higher and lower income groups, it remains unclear if the SDQ is invariant at even lower income levels. There may be important differences between families experiencing different levels of economic need (e.g., families falling above and below the poverty line), given poverty's association with access to important services such as healthcare and childcare (e.g., Cecil et al., 2014), which would have been missed in previous analyses. Further, to our knowledge, there have been no examinations of the invariance of the SDQ across socioeconomic categories when examining parent report of children's symptoms.

The goal of the present study was to test the measurement invariance of the SDQ across socioeconomic groups. In particular, the present study examined the extent to which the SDQ was invariant among families experiencing differing levels of economic hardship (e.g., poverty vs. lower income vs. moderate-high income) and socioeconomic opportunity (e.g., home ownership, unemployment, caregiver's level of education).

Method

Participants

Participants were enrolled in a study that examined associations among program delivery and children's outcomes in community-based after-school programs offered daily by a large, urban, Midwestern park district. The program was publicly funded, though families also paid a nominal fee that varied by community and relied on a sliding scale ($20 to $175 per 12-week session, M = $102, SD = $50). Forty-four after-school programs participated; 768 children between ages 5 and 14 (M = 8.95, SD = 2.19) enrolled in the study (approximately 52% of those eligible). Of the 768 participating children, parents of 615 youth (80%) completed the SDQ and were retained in the present sample. One hundred forty-nine parents (24%) completed the SDQ for youth ages 11-17, while 468 parents (76%) completed the version for youth age 4-10. Sixty-three parents (10%) completed measures in Spanish; the remainder (n=552, 90%) completed measures in English. Demographic characteristics of youth in the final sample were as follows: 52% female; 61% African-American, 22% Hispanic, 7% non-Hispanic White, 3% Asian/Pacific Islander, 7% other.

Measures

Strengths and Difficulties Questionnaire (SDQ Parent Version; Goodman, 1997). The SDQ Parent Version was used in the present study. Parents rated how well each statement fit their child (0 = not true, 1 = somewhat true, 2 = certainly true) on the full measure (25-items), assessing emotional symptoms, conduct problems, hyperactivity/inattention, peer problems, and prosocial behavior. Psychometric properties reflect strong internal consistency (α = .82 parent version for Total Difficulties) and test-retest reliability (4 to 6 months mean r = .62; Goodman, 2001). Internal consistency for the current sample was acceptable (Cronbach's α=.72).

Child Opportunity Index (COI; Acevedo-Garcia et al., 2014). The COI measures the relative educational, health, environmental, social, and economic opportunities across neighborhoods within a given metropolitan area. Neighborhoods (i.e., census tracts) are rated on 19 component indicators of opportunity (e.g., poverty, quality early childhood education, lack of access to healthy foods). Component indicators then are converted to z-scores for each tract within the metropolitan area relative to other tracts (i.e., the analysis takes into account the mean and standard deviation for each area in computing its z-score). Related indicators are averaged to produce a sub-index score reflecting educational, health and environmental, and social and economic opportunities. An overall Opportunity Index Score is calculated from the average of the sub-index scores. Neighborhoods are classified into quintiles (i.e., very low, low, moderate, high, very high) based on their Opportunity Index Scores relative to other neighborhoods in the same metropolitan area. The current study grouped participants by COI scores using the census tract corresponding to park programs in which their children were enrolled.

Reflecting the focus of the larger study, there were more participants in the lower quintiles (i.e., very low and low) than in the upper quintiles (*N* very low = 223, *N* low = 180, *N* moderate = 122, *N* high = 68, *N* very high = 22). Given our interest in examining differences among low-income, low opportunity groups, we combined the upper three quintiles to form three groups for comparison (*N* Very Low Opportunity = 223, *N* Low Opportunity = 180, *N* High Opportunity = 212).[1]

Procedure

All procedures for the original study and the present data analysis were approved by the Institutional Review Boards of the associated universities. Participating parents provided written consent and completed measures either at home or during recruitment nights at their after-school programs.

Data Analytic Plan

We followed the steps outlined by Millsap and Yun-Tein (2004) to examine measurement invariance of the SDQ across levels of child opportunity (i.e., COI groups). Analyses were conducted in MPlus 7.2 (Muthén & Muthén, 2014). The SDQ requires parents to rate their child's behavior using three discrete response score options; hence, we treated items as ordered categories and used the mean- and variance-adjusted weighted least squares (WLSMV) estimator and delta parameterization.

First, we examined the configural invariance of the SDQ using confirmatory factor analysis (CFA) to determine whether the same number of factors and pattern of factor loadings provided adequate fit across COI groups. It was necessary to constrain

[1] We also ran analyses combining the very low and low groups for a comparison across two groups (i.e., low opportunity and high opportunity). Results did not change with this different set of groups. Thus, we present only the results from the comparison between three groups.

factor means to 0 and scale factors to 1 for identification purposes (Muthén & Asparouhov, 2002). Good model fit is often indicated by a nonsignificant χ^2-test. However, it is difficult to obtain a non-significant χ^2 with large sample sizes (Meade & Bauer, 2007). Thus, we also considered the Comparative Fit Index (CFI) and the Root Mean-Square Error of Approximation (RMSEA). A CFI exceeding .95 and an RMSEA below .06 indicate good fit (Hu & Bentler, 1999).

Second, we examined metric invariance, i.e., whether the magnitude of factor loadings was equal across groups. In this model, all factor loadings were constrained to be equal across COI groups. Thresholds were allowed to vary across groups. Factor means were still estimated at 0 for all groups. Scale factors were constrained at 1 for the Very Low Opportunity group and allowed to vary for the other groups. We used the χ^2 difference test to assess if model fit worsened as a result of constraining factor loadings, with a non-significant test indicating invariance. In addition, because chi-square statistics are sensitive to sample size, we examined differences in CFI scores between models as another indicator of measurement invariance, with Δ CFI <= .01 indicating invariance (Cheung & Rensvold, 2002).

Next, we tested strong (scalar) invariance. Strong invariance tests the equivalence of thresholds across groups, where thresholds are the levels of the latent variables at which the score on the item changes (Flora & Curran, 2004). If thresholds are equivalent, the same level of the underlying variable will translate into the same score on a given item across groups. In this stage, all factor loadings and all thresholds (two per item, because there are three response categories) were constrained to be equal across groups. Factor means were constrained to 0 for the Very Low Opportunity group but allowed to

vary for the other two groups. Similarly, scale factors were fixed at 1 for the Very Low Opportunity group but also allowed to vary for the other two groups. We used the χ^2 difference test and the difference in CFI values to assess if model fit worsened as a result of constraining thresholds to be equal across groups compared to the previous model (i.e., the metric invariance model).

Finally, we examined strict (error) invariance by constraining residuals to 1 for both groups. Again, we used the χ^2 difference test and the difference in CFI values to determine if model fit worsened from the previous model (i.e., the strong invariance model) as a result of constraining the residuals to be equal across groups.

Results

Confirmatory factor analyses testing configural invariance of the SDQ yielded the following fit statistics: χ^2 (795) = 1149.79, $p < .01$; RMSEA = .047 (90% C.I. = .041-0.052); CFI = 0.924. Although the χ^2 was significant and the CFI approached .95, the RMSEA indicated acceptable model fit. Thus, we accepted this model and continued to test for measurement invariance.

Second, confirmatory factor analyses testing metric invariance yielded the following fit statistics: χ^2 (845) = 1176.66, $p < .01$; RMSEA = .044 (90% C.I. = .038-.050); CFI = 0.929. The RMSEA value indicated acceptable model fit. Results of χ^2 difference testing and change in CFI did not reveal statistically significant differences in model fit between the configural and metric invariance models ($\Delta\chi^2$ (Δ 50) = 54.45, p = .31; Δ CFI = .005), suggesting model fit did not worsen when factor loadings were constrained to be equal across groups.

Next, we tested for strong invariance using confirmatory factor analyses, yielding the following fit statistics: χ^2 (875) = 1201.52, $p < .01$; RMSEA = .043 (90% C.I. = .037-.048); CFI = .930. Results from χ^2 difference testing and change in CFI did not reveal statistically significant differences in model fit between the metric and strong invariance models ($\Delta \chi^2$ (Δ30) = 40.08, $p = .10$; Δ CFI = .001). Thus, the results suggested that model fit did not worsen as a result of constraining the thresholds to be equivalent across groups, indicating that the same level of the underlying variable translated to the same score across groups, and we proceeded to test for strict invariance.

Confirmatory factor analyses testing strict invariance yielded the following fit statistics: χ^2 (925) = 1257.60, $p < .01$; RMSEA = .042 (90% C.I. = .036-.048); CFI = .929. The χ^2 difference test comparing the strong and strict invariance models was significant, $\Delta \chi^2$ (Δ 50) = 83.39, $p < .01$, suggesting a statistically significant difference in model fit between the strong and strict invariance models. However, the change in CFI did not indicate meaningful difference between the strong and strict models (Δ CFI = .001). This suggests that the SDQ measures constructs across groups with a similar amount of error (i.e., the SDQ explains the same amount of variance for each group).

Discussion

Our study examined the measurement invariance of the parent-report SDQ for children and adolescents across socioeconomic groups. Analyses revealed configural, metric, and strong invariance of the SDQ, as well as some support for strict invariance. Regarding configural and metric invariance, results suggest that parents from diverse socioeconomic backgrounds group the constructs measured in the SDQ (hyperactivity/inattention, emotional symptoms, conduct problems, peer problems, and

prosocial behavior) similarly; put simply, the factor structure of the SDQ and the magnitude of factor loadings are equivalent across groups. Overall, evidence of the measure's strong invariance (i.e., item thresholds are equal across groups) and strict invariance (i.e., similar precision across groups) lends support for comparing group means on latent constructs and associating those to external variables (Dimitrov, 2010).

Altogether, findings point to the utility and appropriateness of utilizing the SDQ as a mental health screener for individual youth, as well as for comparing mental health need across socioeconomic groups. These results extend the findings of He et al. (2013) that the SDQ was invariant across income subgroups by using a more robust indicator of socioeconomic opportunity, the COI, to designate groups based on economic, educational, and health-related opportunities and by paying particular attention to and comparing sub-groups within the low-income spectrum. The invariance of the SDQ across these groups suggests that any differences found in terms of mental health symptoms are indeed indicative of elevated mental health need rather than differences in the way informants may interpret the measure or its underlying constructs.

However, findings should be considered with some caution in light of study limitations. First, data used in the current study were collected as part of a larger investigation of program delivery in children's after-school programs. The larger study focused more on after-school programs in areas of socioeconomic need, and as such, our sample for the current study included many more families in the lower two quintiles of the COI than in the upper three. While this limited our ability to differentiate among families with moderate, high, and very high income, it allowed us to extend previous literature looking at the measurement invariance of the SDQ across socioeconomic

groups (e.g., He et al., 2013) by examining the extent to which the SDQ was invariant across groups with higher levels of economic need.

Second, COI scores were assigned based on location (i.e., the census tract) of the park program they attended for after-school activities. It is possible that families had their home in one area of the city but enrolled their children in a program in another area (e.g., closer to their workplace, to make pick-up easier). However, the majority of families in the study lived in close proximity to their parks (e.g., many children walked home). Thus, the COI score assigned to participants based on the park they attended likely reflected the level of opportunities available to families in their neighborhoods.

Finally, the COI takes into account relative levels of opportunity within a specific metropolitan area but does not offer comparisons of opportunity between groups from different geographic areas (e.g., a city in one state versus another). As such, it is possible that there is less variability in socioeconomic opportunities available in the geographic area of the current sample compared to the variability that may exist at the national level. Further research that examines the extent to which the SDQ is invariant for youth in other areas (e.g., urban vs. rural) may reveal differences in opportunity that are more or less pronounced.

Despite these limitations, the current study supports the use of the SDQ with diverse groups of children from different socioeconomic backgrounds. These findings, coupled with the SDQ's availability in over 80 languages, highlight its utility as an instrument for screening mental health need and comparing rates of mental health problems among diverse groups.

IV. EMOTION REGULATION FOR URBAN YOUTH: MINIMIZING RISK FOR ANXIETY AND DEPRESSION

This manuscript will be submitted to Administration and Policy in Mental Health and Mental Health Services Research, and thus adheres to its use of APA 6th Edition formatting guidelines.

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Abstract

Using a community-based participatory research approach, we developed and examined the acceptability and promise of an Emotion Regulation Skills Intervention (ERSI) in collaboration with staff and families from an after-school music program. ERSI activities were integrated into the music curriculum and focused on feelings identification, communication, and problem solving skills. Students in the music program were randomized by classroom to participate in ERSI activities (n=70) or in their music curriculum as usual (n=60). All youth who participated in ERSI completed measures of satisfaction with ERSI activities. Twenty-seven youth who participated in ERSI and 15 youth in the control condition (22 boys, M age=8.05, SD=1.83, 17% Black/African American, 24% Haitian American, 48% Hispanic/Latino/a/x) completed measures of internalizing symptoms, emotion regulation, social functioning, and life satisfaction at baseline and at the end of the year. Data were analyzed using ANCOVAs and Reliable Change Index (RCI) scores for the full sample, and RCI scores also were separately examined for the subset of youth reporting elevated internalizing symptoms at baseline and youth who reported internalizing symptoms in the normal range. Findings suggested high satisfaction with ERSI activities and preliminary evidence of improved emotion regulation, social functioning, and life satisfaction. However, ERSI did not appear to have a significant effect on internalizing symptoms. Implications for integrating emotion regulations skills building activities into after-school programs are discussed.

Keywords: emotion regulation, after school, internalizing symptoms, & music education

Emotion Regulation for Urban Youth: Minimizing Risk for Anxiety and Depression

Introduction

Approximately ten percent of youth experience clinically impairing anxiety or depression during childhood (Centers for Disease Control, 2013). Prevalence is higher among ethnic minority youth (Anderson & Mayes, 2010) and among youth living in poverty compared to their peers from higher-income families (Centers for Disease Control, 2013). Left untreated, anxiety and depression can interfere with interpersonal relationships and school functioning (Early et al., 2017; Nail et al., 2015), and ultimately predict substance abuse, internalizing problems and occupational and interpersonal impairment (Barrera & Norton, 2009; Copeland, Shanahan, & Costello, 2009; O'Neil, Conner, & Kendall, 2011). These longitudinal negative outcomes highlight the need for intervening early on mechanisms underlying anxiety and depression.

One promising avenue involves addressing emotion regulation deficits that have been associated with internalizing problems (e.g., Wilamowska et al., 2010), in particular cognitive reappraisal (i.e., the ability to reinterpret a situation to change its emotional impact), emotional suppression (i.e., the inhibition of emotional experiences and expression), and emotional awareness (i.e., the recognition and awareness of others' and one's own emotions; Betts, Gullone, & Allen, 2009; Schäfer, Naumann, Holmes, Tuschen-Caffier, & Samson, 2017; Suveg, Hoffman, Zeman, & Thomassin, 2009). Interventions to reduce these deficits have shown promise for improving emotion regulation and reducing internalizing symptoms among youth in clinic (e.g., Ehrenreich-May et al., 2017; Muris, Mayer, den Adel, Roos, & van Wamelen, 2009; Shirk,

Crisostomo, Jungbluth, & Gudmundsen, 2013) and community samples (e.g., Ehrenreich-May & Bilek, 2011; O'Kearney, Kang, Christensen, & Griffiths, 2009).

Several prevention programs have demonstrated promise to mitigate children's risk for anxiety and depression (see reviews, Cuijpers, Van Straten, Smit, Mihalopoulos, & Beekman, 2008; Fisak, Richard, & Mann, 2011). The majority of effective programs rely on cognitive-behavioral principles, with an explicit focus on reducing maladaptive emotion regulation strategies (e.g., changing negative thought patterns and behaviors, decreasing the avoidance of anxiety-provoking stimuli and negative emotional states) and increasing the use of adaptive strategies, including problem solving and cognitive reappraisal (e.g., Ehrenreich-May & Bilek, 2011). While many prevention programs have been designed for use in schools (e.g., Barrett, Farrell, Ollendick, & Dadds, 2006; O'Kearney et al., 2009), competing priorities (e.g., academic instruction, standardized test preparation) and limited resources (e.g., time for teacher training) limit the extent to which these programs can be implemented and sustained by teachers and point toward the need for examining the potential of out-of-school time and settings to promote resilience for vulnerable youth.

Recreation during Out-of-school Time to Promote Youth Resilience

After-school programs are increasingly recognized as a setting for promoting resilience and preventing mental health problems. Eighteen percent (10.2 million) of U.S. children participate in after-school programs, and the percentage of children who would participate if an after-school program were available to them has risen from 30% in 2004 to 41% in 2014 (Afterschool Alliance, 2016). Interest in after-school programs is even higher among families living in poverty, where 24% of youth currently attend an after-

school program, and 56% more would enroll if one were available to them (Afterschool Alliance, 2016). After-school program goals align well with mental health promotion and present great opportunity for promoting children's healthy development (Frazier, Cappella, & Atkins, 2007).

Organized, community-based after-school programs tend to offer recreational activities (e.g., sports, art, dance, music), with inherent opportunities for socio-emotional skills building (Frazier et al., 2007), for instance related to navigating peer conflict, tolerating frustration, and problem solving. Indeed, participation in recreational activities has been shown to enhance youth mental health, friendships, academic performance, and quality of life (Afterschool Alliance, 2013; Durlak, Weissberg, & Pachan, 2010; Gottfredson, Gerstenblith, Soule, Womer, & Lu, 2004). In addition to natural teachable moments, explicit skills instruction may be integrated into children's natural activities and after school routines, in particular targeting mechanisms of action (e.g., emotion regulation) and underlying pathways to poor outcomes, to enhance the reach of preventive intervention tools to youth with unidentified need, underlying vulnerabilities, and early symptoms.

Benefits of Music Education to Well-being and Mental Health

Music education has long been touted as highly beneficial to children's development. Previous research has shown the benefits of music education to auditory processing and attention, reading skills, spatial learning, overall intelligence, and academic achievement (Črnčec, Wilson, & Prior, 2006; Kraus et al., 2012; Schellenberg, 2004; Southgate & Roseigno, 2009; Tierney & Kraus, 2013). In addition to these academic benefits, music also has demonstrated positive influence on children's social

development, self-esteem, and mental health (e.g., Costa-Giomi, 2004; Rickard et al., 2013; Walker & Boyce-Tillman, 2002).

Music education is a common component of after-school programming and particularly well-suited for fostering emotion regulation skills. Many musical pieces are meant to express or invoke particular emotional experiences (e.g., Juslin, Liljestrom, Vastfjall, & Lundqvist, 2010); learning about these pieces and experiencing them through practice and performance provides a platform for discussing emotion-related constructs. Thus, music education offers opportunities to build youth's emotional understanding and help develop capacity for emotion regulation, key skills for preventing anxiety and depression in particular and promoting mental health more generally. Further, music education that takes place in group format such as choir, band, or orchestra emphasizes skills such as teamwork, cooperation, and artistic understanding and expression, offering a platform for youth to develop skills such as insight, communication, and problem solving in social settings. Partnerships between mental health and music education programs may represent new opportunities to infuse socio-emotional curriculum into children's naturally-occurring activities (Hedemann & Frazier, 2017).

Music Education for Urban Elementary-Aged Youth

Despite the reported benefits of music, music education programs often have to justify their presence in a difficult economic environment that prioritizes standard subject instruction, such as math and English (The Farkas Duffett Research Group, 2012). This is particularly true for urban schools serving lower-income students. Music education is available in fewer elementary schools serving predominantly low-income students than in schools serving predominantly higher-income students (Parsad & Spiegelman, 2012).

Given the increased risk faced by urban, low-income youth for negative outcomes (e.g., Grant et al., 2004), opportunities for urban youth to practice socio-emotional skills are even more critical. Music in particular offers a culturally meaningful platform from which to leverage opportunities for youth to practice socio-emotional skills, and music education programs that work with elementary school-aged youth offer additional opportunity for youth to develop socio-emotional skills at a critical stage of social and emotional development (van Lier & Deater-Deckard, 2016).

What We Know and What We Don't Know

We know that high rates of anxiety and depression exist for youth, in particular for youth in urban poor communities. We also know that emotion regulation deficits underlie symptoms and impairment, and that prevention programs designed to reduce deficits and mitigate symptoms are available and effective. Programs have largely been designed with schools in mind, but schools lack the time and resources to implement and sustain them. After school programs represent an alternative setting and recreation routines offer an especially good platform for teaching emotion regulation. Music education in particular is well-suited for teaching emotion regulation; however, there have been no studies to date evaluating the integration of socio-emotional skills activities within music education. Thus, we don't know the extent to which integrating such activities is acceptable to program staff, youth, and families or the extent to which such integration impacts important childhood outcomes.

The Current Study

The present study represents the next step in a community-university partnership aimed at integrating emotion regulation skills building into an after-school music

education program (see Hedemann & Frazier, 2017 for a description of earlier stages in the partnership). Adhering to a community-based participatory research (CBPR) approach, we developed and infused an Emotion Regulation Skills Intervention into after-school music instruction; specifically, music activities were designed to provide children with explicit practice of emotion regulation skills: emotional awareness, communication, cognitive reappraisal, and problem solving. We examined change over time in child-reported internalizing problems, emotion regulation strategies, and functioning through a cluster-randomized controlled design. We predicted that children who participated in the Emotion Regulation Skills Intervention would report (a) high levels of satisfaction with intervention activities; (b) fewer anxiety and depressive symptoms over time; (c) increases over time in their use of cognitive reappraisal; and (d) decreases over time in their use of emotional suppression compared to children receiving music-as-usual in the control condition. We also examined whether participation in the Emotion Regulation Skills Intervention would affect children's social functioning and life satisfaction.

Method

Academic-Community Partnership

Our team has collaborated for the past six years with the Miami Music Project (MMP), an after-school program whose aim is to use music as a tool for social transformation. Commitment to social development is reflected in their vision to help youth develop self-esteem, perseverance, respect, teamwork, and compassion. Collaboration goals focused on supporting MMP Teaching Artists (i.e., music educators) to increase classroom engagement and integrate activities explicitly focused on the

program's personal and social development goals. Corresponding to MMP-identified priorities, curriculum was designed and implemented with the youngest, most novice students at three sites.

Youth, parents, and MMP Teaching Artists from three sites collaborated with academic partners as part of a community-based participatory research (CBPR; Minkler & Wallerstein, 2013) approach to developing and implementing a socio-emotional curriculum. Parents, Teaching Artists, and youth who were approached to participate were identified by MMP administrators as being particularly involved in MMP and interested in contributing to MMP's social development goals. The first author reached out to potential CBPR participants, explained the nature of participation, and invited them to attend initial meetings to learn more.

The community advisory structure consisted of Consorts (i.e., community advisory boards) at each site, with participation from MMP staff (*n*=2), youth (*n*=2), and parents (*n*=9). Decisions on research methods (e.g., recruitment, measures, intervention activities) were by consensus. Meetings occurred monthly at the beginning and decreased to bi-monthly at the start of implementation. Although we'd originally planned for a central Steering Committee to be comprised of representatives from each Consort, challenges associated with transportation and scheduling conflicts made it difficult to pull together a consistent central group. Instead, the first author communicated discussions and recommendations from each Consort to the others, and consensus was reached during each individual Consort meeting. Additionally, although the original vision was for representation from parents, youth, and staff from each site, only youth from Sites 2 and 3 (sites described below) and staff from Sites 1 and 3 participated in research design and

intervention development. While some procedures were consistent across sites (e.g., measures, randomization), others (e.g., recruitment procedures) varied to accommodate site-specific needs.

Setting

MMP serves youth ages 6-17 at four sites across Miami-Dade County, selected for their limited access to formal arts education. Youth are organized into levels by age and skill and are in classes based on instrument; three sites provide programming for younger, novice youth (i.e., the Prelude and Debut Orchestras) that participated in the current study, while more advanced youth come together from across the county to participate in combined orchestras. Prelude and Debut Orchestras include string, woodwind, and brass ensembles which meet between three and five times a week (depending on the site) for two hours. Youth participate in small group instruction by their instrument (e.g., violin section, cello section, trumpet section), larger ensemble instruction by instrument family (i.e., string, brass, woodwind), and choir. The Prelude level is designed to introduce young, elementary-aged youth (primarily 1st-3rd grade) to their instruments and classical music instruction, while the Debut level is designed to further increase youth's comfort and skill with their instruments and reading music. Music education is provided by MMP Teaching Artists. Representative of line-level instructors in typical after-school programs, Teaching Artists (n=40 across all MMP sites and levels, range 1-6 years working with MMP) are a college-educated workforce, predominantly composed of individuals with backgrounds in music performance, with variable experience in child development, education, and mental health. Youth in MMP reflect the diversity of greater Miami-Dade County (56% Hispanic/Latino, 40% Black

Non-Hispanic, 4% White Non-Hispanic and Other Race/Ethnicities) and predominantly come from lower-income households (82%). Information on sites from the current study are presented below.

Site 1. Site 1 is located in a historically lower-income, predominantly Haitian-American neighborhood, currently experiencing some of the most rapid gentrification in Miami-Dade County. Approximately 100 youth were enrolled at the start of the school year at Site 1 across two levels. MMP classes take place at a local elementary school serving approximately 420 students. Over ninety-eight percent of students at the school receive free or reduced lunch, and 38 percent of students are English Language Learners. Students struggle academically; only 23% and 28% of students are at grade level for reading and math, respectively, by third grade. Further, the school is among the highest in Miami-Dade County for reported violent incidents. The majority of students in MMP at Site 1 are current or former students at the school. Regarding parent involvement, a few dedicated parents volunteer their time on a regular basis to assist with administrative activities and special events, but parental involvement is comparatively lower at Site 1 than at other MMP sites.

Site 2. Site 2 is located in a predominantly African-American, lower-income neighborhood that experiences high crime. Approximately 75 youth across two levels were enrolled in MMP at Site 2 at the start of the school year. MMP classes at Site 2 are located in a local K-8 school serving 580 students, and the majority of youth enrolled in MMP attend the school. Over 94 percent of students who attend the school identify as African-American, and 98 percent of students receive free or reduced lunch. Students struggle academically; 40 percent of third graders are at grade level for math, while only

10 percent of third graders at the school are reading at grade level. Parent involvement at Site 2 is moderate, with parents volunteering and fundraising for special events throughout the year.

Site 3. Site 3 is located in a middle class, Hispanic/Latino neighborhood and serves primarily Hispanic/Latino students. Approximately 120 students were enrolled at the beginning of the school year at Site 3. MMP classes are provided at a local K-8 school; however, most MMP students come by parent drop-off from other schools in the area. Parental involvement in MMP activities is comparatively high at Site 3, with a large number of parents volunteering to assist with MMP administrative needs and special events. Although many students come from middle class backgrounds, there are limited opportunities in the area for music education.

Participants

Seventy-six children were enrolled in the study (n = 30 Site 1, n = 6 Site 2, n = 40 Site 3). There were an equal number of girls and boys (n = 38 each). Forty-three children (56.6%) identified as Hispanic/Latino/a/x, 13 children (17.1%) identified as Black/African American, 13 children (17.1%) identified as Haitian American, three children (3.9%) identified as White Non-Hispanic, two children (2.6%) identified as Asian/Pacific Islander, and two children (2.6%) indicated "other race/ethnicity." Children ranged in age from five to eleven years (M = 7.55, SD = 1.66). Over half of children enrolled in the study came from families with annual incomes less than $25,000 per year; 82 percent of children in the study came from families with annual incomes less than the median income of Miami-Dade County (i.e., $44,224; U.S. Census Bureau, 2016). The majority (64.6%) of children came from households where at least one parent had a two-

year college degree or higher level of education; 15.4 percent of children came from households where parents had completed only up to a high school diploma. *See Table 1*.

Participant differences across sites and conditions. Across sites, children did not differ by gender [$\chi^2(2) = 0.78$, $p = .682$], age [$F(2, 61) = 0.003$, $p = .997$], or pre-intervention internalizing total scores [$F(2, 35) = 0.54$, $p = .589$], cognitive reappraisal [$F(2, 37) = 0.30$, $p = .745$], or emotional suppression [$F(2, 37) = 1.10$, $p = .345$]. However, children did differ by race/ethnicity, reflecting the different demographics of each site. Most children from Site 1 (73%) and Site 2 (67%) identified as Black/African American, while a majority of children from Site 3 (84%) identified as Hispanic/Latino/a/x. Across conditions (intervention vs. music education-as-usual control), children did not differ by gender [$\chi^2(1) = 1.43$, $p = .231$], age [$F(1, 29) = 0.46$, $p = .504$], or pre-intervention internalizing total scores [$F(1, 36) = 0.17$, $p = .679$], cognitive reappraisal [$F(1,38) = 0.06$, $p = .807$], or emotional suppression [$F(1, 38) = 0.34$, $p = .563$]. However, child race/ethnicity did differ by condition [$\chi^2(1) = 11.08$, $p = .011$]. Children in the intervention condition were more likely to identify as Hispanic/Latino/a/x (63%) compared to children control condition (20%); children in the control condition were more likely to identify as Black/African American or Haitian American (73%) compared to children in the intervention condition (22%). Differences in race/ethnicity across conditions resulted from randomization of children to condition by classroom (*See Procedures*).

Characteristics of participants involved in analyses. We obtained partial data (i.e., baseline data) for 76 percent of the sample ($n = 58$) and full data for 55 percent of the sample ($n = 42$; $n = 27$ ERSI, $n = 15$ control). Sixteen children ($n = 7$ ERSI, $n = 9$

control) reported elevated internalizing symptoms at baseline; complete data were available for nine of these children (n = 5 ERSI, n = 4 control). Analyses were conducted with the 42 children who completed measures at both timepoints (n = 15 Site 1, 50% of those initially enrolled; n = 3 Site 2, 50% of those initially enrolled; n = 24 Site 3, 60% of those initially enrolled). These 42 children ranged in age from 5 to 11 years (M = 8.05, SD = 1.83); 22 children were boys (52%), and 20 were girls (48%). Seven children (17%) identified as Black/African American, ten children (24%) identified as Haitian American, 20 children (48%) identified as Hispanic/Latino/a/x, three children (7%) identified as White Non-Hispanic, and two children (4%) identified as Asian/Pacific Islander.

Procedure

This study was conducted in adherence to Institutional Review Board (IRB) procedures and was approved by the authors' IRB. Procedures were determined by Consorts, reflecting the CBPR approach to the current study.

Recruitment, randomization, and data collection. Researchers attended several MMP parent events (e.g., parent orientation, information sessions, concerts) to introduce the study and answer questions. Researchers also were available during drop-off and pick-up times at each site to recruit families who may not have been able to attend other events. Data were collected at two times points (i.e., baseline and end of school year) at each site. Parents completed measures (10-20 minutes) either at the site or at their home. All children completed measures on site. Research assistants read measures aloud to all children age 10 or younger in groups of two or three and assessed comprehension by using example items. Research assistants helped older children with measures as needed. Youth measures took between 20 and 35 minutes to complete. Participating parents

received school supplies ($5 value) for completing measures at baseline and a $10 gift card at the end-of-year timepoint. Children received a small prize at each timepoint ($3 value).

Children were randomized (by coin flip) by ensemble (i.e., instrument family) within sites into intervention or control conditions. Because randomization occurred within site, and each site had two classrooms (i.e., two instrument groups) at the Prelude level, each site had one intervention group and one control group. Children in the brass ensemble at Sites 1 (n=15) and 2 (n=5) and Children in the string ensemble at Site 3 (n=50) were assigned to the intervention condition; children in the string ensemble at Sites 1 (n=30) and 2 (n=20) and children in the woodwind ensemble at Site 3 (n=10) were assigned to the control condition.

Intervention condition. Informed by the common elements of evidence-based prevention programs (Boustani et al., 2014), previous pilot work (Hedemann & Frazier, 2017), and ongoing discussions with MMP staff and families during Consort meetings, Emotion Regulation Skills Intervention (ERSI) activities related to feelings identification, cognitive coping, and problem solving were selected from previously piloted activities, an MMP activities library, and activities previously used by MMP Teaching Artists to directly target emotional regulation (emotional awareness, cognitive reappraisal, and emotional suppression) and to promote MMP's core values.

Feelings identification focuses on increasing awareness of feeling states (e.g., sad, nervous) and accompanying body reactions (e.g., fast-beating heart, sweaty palms), and techniques to help youth handle stress and anxiety. Sample activities include playing music excerpts for youth to identify how different pieces of music make them feel, using

fast and slow examples to consider reactions in their bodies, and using length of music notes (e.g., half, quarter) to demonstrate effects of breathing on mood. Cognitive coping involves viewing situations from multiple perspectives and changing thoughts to influence feelings and behaviors. Sample activities relied on movie clips to illustrate how characters' biased thoughts or misinterpretations influence how they feel and act and acting out different ways a scene could go if a character replaced negative thoughts with positive ones. Problem solving includes defining a problem, brainstorming solutions (assessing feasibility and likely consequence of each), choosing a solution, and evaluating results. Sample activities include having youth work in pairs to apply the steps and solve a problem (e.g., build a new musical instrument with simple supplies). ERSI activities were designed to be infused into MMP curriculum to provide engaging opportunities for practice with feedback, mirroring the natural routines of music instruction (practicing the same piece over time to improve skill, fluidity, and coordination among orchestra members).

Originally, ERSI activities were planned for weekly delivery in 15-minute sessions over the course of approximately 28 weeks, totaling 7 hours of intervention time. With an eye toward sustainability and corresponding to prior after-school workforce support efforts (e.g., Helseth & Frazier, 2018), we'd planned for each ERSI activity to be delivered three times over consecutive sessions to allow children repeated opportunities for practice with feedback (with a few classes to review activities and solidify skills), and to provide Teaching Artists with opportunities to observe, practice, and build competence to lead the activities. Specifically, we'd planned for the first author to facilitate each activity first, with the MMP Teaching Artist in each classroom observing, followed by

co-facilitation by the first author and MMP Teaching Artist for the activity's second implementation and, finally, facilitation of the activity a third time by the MMP Teaching Artist with the first author observing and providing feedback. Although originally planned for subsequent weekly delivery, several barriers (e.g., staff turnover, ongoing program enrollment, competing demands on staff) led to significant variability across sites regarding who facilitated intervention activities and how many activities were implemented.

Control condition. Children in the control condition participated in their regularly-scheduled MMP classes. Classes for children in the control condition met at the same time as classes which integrated ERSI activities; there were no Teaching Artists who overlapped between intervention and control conditions. Classes primarily consisted of teaching youth how to play their instruments and practice playing different musical pieces for seasonal performances. Although MMP Teaching Artists were encouraged as part of their classes to include games and activities to work on skills such as teamwork, they were not a consistently scheduled part of the curriculum.

Measures

Implementation.

Participation. Attendance was recorded for each ERSI activity delivered. Attendance numbers include all MMP youth – enrolled or not enrolled in the study.

Adherence. The first author documented which activities were delivered, who facilitated each activity (i.e., the first author, the Teaching Artist, or co-facilitated), and how long it lasted.

Acceptability. All youth—enrolled or not enrolled in the study—completed anonymous ratings of satisfaction for each ERSI activity on a 4-point scale from 0 (sad face = did not at all like) to 3 (smiley face = liked very much). Youth also indicated their favorite activity as well as activities that they would change if given the opportunity.

Impact.

Mental health symptoms.

Revised Children's Anxiety and Depression Scale (RCADS; Chorpita et al., 2000). The RCADS is a 47-item informant-report measure of youth anxiety and depressive symptoms. Youth rated how often they experience a particular symptom on a 4-point scale (0 = never, 1 = sometimes, 2 = often, 3 = always). The RCADS contains 6 subscales that map onto diagnostic criteria for separation anxiety disorder, social phobia, generalized anxiety disorder, panic disorder, and major depressive disorder. Additionally, the 47 items can be summed to produce a total internalizing score. The RCADS can be used to identify youth in the borderline and clinical ranges for each subscale as well as the total internalizing score. The RCADS has demonstrated adequate psychometric properties with youth as young as fourth grade (e.g., Chorpita et al., 2000; Muris, Merckelbach, Ollendick, King, & Bogie, 2002). Internal consistency for the current sample was acceptable (α = .72 - .82 for individual subscale scores, α = .95 for the full scale).

Mechanisms of change.

Emotion Regulation Questionnaire: Child and Adolescent (ERQ-CA; Gullone & Taffe, 2012). The ERQ-CA is a 10-item self-report questionnaire used to assess children's emotion regulation strategies. The scale is comprised of two subscales: cognitive

reappraisal (6 items) and emotional suppression (4 items). Children rate how much they agree with each statement on a 5-point scale (1 = strongly disagree to 5 = strongly agree), and scores are averaged across items on each subscale. Initial investigations have shown strong psychometric properties for youth report (Gullone & Taffe, 2012), though previous studies have been conducted with older youth (i.e., older elementary school through high school age). Following Consort concern that the ERQ-CA would not be understood by younger participants, item language was altered slightly to increase comprehension. For example, the item, "When I am feeling *positive* emotions, I am careful not to show them," was changed to, "When I am feeling *good* feelings, I try not to show them." Internal consistency for the current sample was low (Cronbach's α = .59 for the cognitive reappraisal subscale, Cronbach's α = .41 for the emotional suppression subscale).

Functioning.

Strengths and Difficulties Questionnaire: Youth Report (SDQ; Goodman, 1997). The SDQ is a 25-item self-report measure of youth mental health symptoms, with youth rating how well each statement characterizes them using a 3-point scale (0 = not true, 1 = somewhat true, 2 = certainly true). Subscales include emotional symptoms, conduct problems, hyperactivity/ inattention, peer relationship problems, and prosocial behavior; however, for the current study, youth were asked only to rate items corresponding to the peer relationship problems and prosocial behavior subscales. The SDQ has demonstrated good psychometric properties (e.g., Goodman, 2001); internal consistency for the peer problems subscale in the current study was poor (Cronbach's α = .27), while internal consistency for the prosocial behavior subscale was adequate (Cronbach's α = .71).

Multidimensional Students' Life Satisfaction Scale (MSLSS; Huebner, 1994). The MSLSS is a 40-item self-report measure of youth satisfaction with important life domains. Youth rate how true each statement is for them using a 4-point scale (1 = not true, 2 = a little true, 3 = somewhat true, 4 = very true). Subscales tap into satisfaction with family, friends, school, living environment, and self. The MSLSS has demonstrated good psychometrics (Huebner et al., 1994), and internal consistency for the current study was acceptable (Cronbach's α = .59-.80)

Analytic Plan

Implementation. Descriptive statistics summarized youth attendance, adherence, and youth enthusiasm for ERSI activities.

Impact. We conducted ANCOVAs to examine differences across conditions in cognitive reappraisal, emotional suppression, and internalizing symptoms, controlling for baseline scores on those measures. Additionally, due to the small sample size, we examined Reliable Change Index Scores ($\frac{x1-x2}{Sdiff}$) (Jacobson & Truax, 1991) to examine the potential clinical significance of ERSI. RCI scores greater than or equal to 1.96 represent reliable change (improvement or decline) at the α = .05 level.

Of the subset of children who at minimum partially completed impact measures (*n* = 58), 9 children at Site 1, 0 children at Site 2, and 26 children at Site 3 were in the intervention group, while 15 children at Site 1, 4 children at Site 2, and 4 children at Site 3 were in the control group. Full data were available for 27 children in the ERSI condition (Site 1 *n* = 7, Site 3 *n* = 20) and 15 children in the control condition (Site 1 *n* = 8, Site 2 *n* = 3, Site 3 *n* = 4). ANCOVAs were conducted with the full sample. RCI score were examined for the full sample as well as with a subset of children (*n* = 9) reporting

elevated internalizing symptoms (i.e., RCADS scores in the borderline or clinical range) at baseline. We also examined RCI scores for the subset of children not reporting elevated internalizing symptoms at baseline (n = 33), who may have responded more to ERSI activities aimed at mitigating risk.

Results

Implementation

Participation. All children in classes randomized to the intervention group participated in ERSI activities. Average attendance at Site 1 was 12.44 students per session (SD = 2.20), reflecting 83% of those enrolled. At Site 2, average attendance was 4.17 students per session (SD = 0.38), or 83% of those enrolled. Average attendance at Site 3 was 36.50 students per session (SD = 8.37), or 73% of those originally enrolled; lower average attendance reflects that n = 10 students left MMP over the course of the year.

Adherence. Consorts consulted with MMP staff at each site regarding intervention delivery, which began in stages across sites (Site 3 in November, Site 1 in January, Site 2 in February). At Site 3, the first author and MMP Teaching Artists co-facilitated the first six sessions; turnover in Teaching Artists resulted in the first author facilitating the remaining six intervention sessions. At Site 1, the first half of intervention sessions (n = 4) were facilitated by the first author, while the subsequent four sessions were co-facilitated with MMP Teaching Artists as they became increasingly comfortable with the planned activities. At Site 2, all activities were co-facilitated from the beginning with MMP Teaching Artists. Children at Site 1 participated in intervention activities across eight weeks, totaling 4.33 hours (M session length = 30.00 minutes, SD = 10.35).

Children at Site 2 participated in intervention activities across seven weeks, totaling 4.17 hours of intervention time (*M* session length = 32.86 minutes, *SD* = 12.54). Children at Site 3 participated in intervention activities across 12 weeks, averaging 7.21 hours of intervention time (*M* session length = 33.82 minutes, *SD* = 4.52). More activities focused on feelings identification (*n* = 3) and problem solving (*n* = 4) than on cognitive coping (*n* = 2).

Acceptability. Mean satisfaction for ERSI activities ranged from 2.33 to 4.00, with eight of nine activities receiving a majority of responses of "like" or "liked very much." Only one activity received more responses of "did not like" or "did not at all like" than "like" or "liked very much."

Impact

Mental health symptoms.

Internalizing symptoms. We conducted an ANCOVA with intervention condition as the independent variable, end of year total RCADS scores as the dependent variable, and baseline total RCADS scores as a covariate. There was no significant effect for intervention condition, and intervention condition did not account for much of the variance in end of year scores, $F(1, 35) = 0.01$, $p = .925$, partial $\eta^2 < .001$. Children who participated in ERSI (*M* = 42.04, *SD* = 23.21) did not report fewer internalizing symptoms at the end of the year compared to children in the control group (*M* = 44.75, *SD* = 25.53). ANCOVAs examining individual differences for individual subscale scores largely mirrored results of the Total RCADS Score. *See Table 2*.

RCI Scores for the RCADS total score revealed that six children who participated in ERSI (24%) declined over the course of the year, 15 children who participated in ERSI

(60%) exhibited no change, and four children who participated in ERSI (16%) improved over the course of the year. Five children in the control condition (36%) worsened over the course of the year, five children in the control condition (36%) exhibited no change, and four children in the control condition (28%) improved over the course of the year.

RCI Scores for the RCADS total score were also calculated for the subsample of children exhibiting elevated internalizing symptoms at baseline (*n*=5 ERSI, *n*=4 control). Results resembled those for the full sample. Specifically, RCI Scores revealed that one child who participated in ERSI declined over the course of the year, three children who participated in ERSI exhibited no change, and one child who participated in ERSI improved. RCI Scores for the control group revealed two children exhibited no change, while two children improved over the course of the year.

Finally, RCI scores were calculated for the subsample of children reporting scores in the normal range (no elevation in internalizing symptoms) at baseline (*n* = 20 ERSI, *n* = 9 control). RCI scores revealed that five children who participated in ERSI (25%) worsened over the course of the year, twelve children who participated in ERSI (60%) exhibited no change, and three children who participated in ERSI (15%) improved over the course of the year. RCI scores for the control group revealed four children (44%) worsened over the course of the year, three children (33%) exhibited no change, and two children (22%) improved over the course of the year.

Mechanisms of change.

Cognitive reappraisal. We conducted an ANCOVA with intervention condition as the independent variable, end of year cognitive reappraisal scores on the ERQ-CA as the dependent variable, and baseline cognitive reappraisal as a covariate. Results revealed

no significant difference between ERSI and the control group, $F(1, 37) = 0.11$, $p = .748$, partial $\eta^2 = .003$. The use of cognitive reappraisal strategies did not differ between children who participated in ERSI ($M = 3.15$, $SD = .75$) and children in the control condition ($M = 3.06$, $SD = .99$). RCI Scores were calculated to examine change over time in children's use of cognitive reappraisal as an emotion regulation strategy. One child who participated in ERSI (4%) worsened over the course of the year (i.e., reported less frequent use of cognitive reappraisal), 21 children who participated in ERSI (78%) exhibited no change, and five children who participated in ERSI (18%) improved in their use of cognitive reappraisal (i.e., reported more frequent use of cognitive reappraisal). Of the control participants, ten (77%) exhibited no change, and three (23%) improved in their use of cognitive reappraisal.

RCI Scores for cognitive reappraisal were also calculated for the subsample of children exhibiting elevated levels of internalizing symptoms at baseline. RCI Scores for children with elevated internalizing symptoms showed that four children who participated in ERSI exhibited no change with regards to cognitive reappraisal skills, while one child who participated in ERSI improved. Three children in the control condition exhibited no change, while one child in the control condition improved in their use of cognitive reappraisal.

Finally, we calculated RCI scores related to cognitive reappraisal for the subsample of children reporting internalizing symptom scores in the normal range at baseline. RCI scores revealed that one child who participated in ERSI (5%) worsened over the course of the year, 15 children who participated in ERSI (75%) exhibited no change, and four children who participated in ERSI (20%) improved over the course of

the year, while seven children in the control condition (78%) exhibited no change and two children in the control condition (22%) improved over the course of the year in their use of cognitive reappraisal.

***Emotional suppression*.** An ANCOVA with intervention condition as the independent variable, emotional suppression scores on the ERQ-CA at the end of the year as the dependent variable, and baseline emotional suppression scores as a covariate revealed no significant difference between ERSI and the control group, $F(1, 37) = 2.58$, $p = .116$, partial $\eta^2 = .065$, but yielded a moderate effect size. Children who participated in ERSI ($M = 2.80$, $SD = 0.90$) reported less frequent use of emotional suppression at the end of the year compared to children in the control condition ($M = 3.37$, $SD = 1.11$). RCI Scores were also calculated to examine the potential clinical significance of change over time in use of emotional suppression. Two children who participated in ERSI (7%) worsened over the course of the year (i.e., reported more frequent use of emotional suppression), 23 children who participated in ERSI (85%) exhibited no change, and two children who participated in ERSI (7%) improved over the course of the year (i.e., reported less frequent use of emotional suppression). Of the children in the control condition, one (8%) worsened over the course of the year, while the remaining twelve (92%) exhibited no change with regard to their use of emotional suppression.

We also computed RCI Scores related to emotional suppression for the subsample of children exhibiting elevated levels of internalizing symptoms at baseline. RCI Scores revealed that all five children who participated in ERSI and all four children in the control condition did not experience clinically significant change with regards to their use of emotion suppression as an emotion regulation strategy.

Finally, RCI scores related to emotional suppression were computed for the subsample of children reporting internalizing symptom scores in the normal range at baseline. RCI scores revealed two children who participated in ERSI (10%) worsened over the course of the year, 16 children who participated in ERSI (80%) exhibited no change, and two children who participated in ERSI (10%) improved over the course of the year. One child in the control condition (11%) worsened over the course of the year, and eight children in the control condition (89%) exhibited no change with regards to their use of emotional suppression over the course of the year.

Functioning.

Peer problems and prosocial behavior. We conducted an ANCOVA with intervention condition as the independent variable and end of year child-reported Peer Problems subscale scores from the SDQ as the dependent variable, covarying baseline child-reported Peer Problems subscale scores. Results were not statistically significant but did yield a small effect size, $F(1, 37) = 2.12$, $p = .154$, partial $\eta^2 = .054$. Children in ERSI ($M = 3.04$, $SD = 2.33$) reported fewer peer problems at the end of the year compared to children in the control condition ($M = 4.31$, $SD = 2.33$). RCI scores were also calculated and revealed that 25 children who participated in ERSI (93%) did not exhibit change in peer problems, while two children who participated in ERSI (7%) improved over the course of the year (i.e., reported fewer peer problems). One child in the control condition (8%) worsened over the course of the year (i.e., reported a higher level of peer problems), while twelve children in the control condition (92%) did not exhibit change. RCI scores for the subset of children reporting elevated internalizing problems at baseline revealed no clinically significant change in peer problems for

children who participated in ERSI or children in the control condition. For children who did not report elevated internalizing symptoms at baseline, RCI scores revealed that 18 children who participated in ERSI (90%) did not exhibit change over the course of the year, while two children who participated in ERSI (10%) improved. One child in the control condition (11%) worsened over the course of the year, while eight children in the control condition (89%) did not exhibit clinically significant change.

An ANCOVA with intervention condition as the independent variable, end of year child-reported SDQ Prosocial subscale scores as the dependent variable, and baseline child-reported SDQ Prosocial subscale scores as a covariate did yield statistically significant results for intervention condition and a moderate effect size, $F(1, 37) = 4.52$, $p = .04$, partial $\eta^2 = .109$. Children who participated in ERSI ($M = 7.85$, $SD = 2.05$) reported higher levels of prosocial behavior at the end of the year compared to children in the control condition ($M = 6.08$, $SD = 2.54$). RCI scores for the full sample revealed two children who participated in ERSI (7%) worsened over the course of the year (i.e., reported less prosocial behavior), 22 children who participated in ERSI (81%) exhibited no change, and three children who participated in ERSI (11%) improved over the course of the year (i.e., reported higher levels of prosocial behavior). Three children in the control condition (23%) worsened over the course of the year, nine children in the control condition (69%) did not exhibit significant change, and one child in the control condition (8%) improved over the course of the year. RCI scores for the subsample of children reporting elevated internalizing problems at baseline revealed that one child who participated in ERSI (20%) and two children in the control condition (50%) worsened over the course of the year, while four children who participated in ERSI (80%) and two

children in the control condition (50%) did not exhibit significant change over the course of the year with regard to prosocial behavior. RCI scores for the subsample of children reporting internalizing symptom scores in the normal range at baseline revealed one child who participated in ERSI (4%) and one child in the control condition (11%) worsened over the course of the year, 18 children who participated in ERSI (82%) and seven children in the control condition (78%) exhibited no change, and three children who participated in ERSI (14%) and one child in the control condition (11%) improved over the course of the year.

Life satisfaction. We conducted a series of ANCOVAs with intervention condition as the independent variable and end of year MSLSS subscale scores as the dependent variables, covarying for baseline MSLSS subscale scores. For School Satisfaction [$F(1, 37) = 2.66 \times 10^{-4}$, $p = .987$, partial $\eta^2 < .001$], differences between conditions were not statistically significant and did not account for much of the variance in end of year scores. For Satisfaction with Living Environment [$F(1, 37) = 1.82$, $p = .186$, partial $\eta^2 = .047$], Self-Satisfaction [$F(1, 37) = .75$, $p = .392$, partial $\eta^2 = .020$], Satisfaction with Friends [$F(1, 37) = 1.23$, $p = .273$, partial $\eta^2 = .032$], and Family Satisfaction [$F(1, 37) = 1.87$, $p = .179$, partial $\eta^2 = .048$], differences between conditions were not statistically significant but yielded small effect sizes. Compared to children in the control condition, children who participated in ERSI reported higher satisfaction with Living Environment (ERSI $M = 28.63$, $SD = 7.19$; Control $M = 26.15$; $SD = 7.76$), Self (ERSI $M = 23.67$, $SD = 3.05$; Control $M = 23.46$, $SD = 4.89$), Friends (ERSI $M = 29.15$, $SD = 6.24$; Control $M = 27.92$, $SD = 6.86$), and Family (ERSI $M = 24.19$, $SD = 3.95$;

Control *M* = 22.00, *SD* = 5.79). *See Table 3 for RCI Scores related to Life Satisfaction measures*.

Discussion

The present study sought to mitigate risk for internalizing problems among urban youth by integrating emotion regulation skills building activities into an after-school music program curriculum. Utilizing a community-based participatory research (CBPR) approach, we conducted a cluster-randomized controlled trial examining the acceptability and impact of an emotion regulation skills intervention (ERSI) on emotion regulation strategies, internalizing symptoms, and functioning. We predicted that children who participated in ERSI would report high levels of satisfaction with intervention activities and increased use of cognitive reappraisal, decreased use of emotional suppression, and fewer internalizing symptoms over time compared to children in the control condition. Results for acceptability were in line with predictions, as most children reported enjoying ERSI activities. Findings related to impact measures were mixed; children involved in ERSI did not report increased use of cognitive reappraisal or fewer internalizing problems overall compared to children in the control condition. However, preliminary evidence did suggest improvements in emotion suppression and functioning for children involved in ERSI.

Acceptability of ERSI

Overall, youth endorsed enjoying ERSI activities. The majority of children responded that they “liked” or “liked very much” eight of nine ERSI activities implemented; only one ERSI activity received more ratings of dissatisfaction. Although

we were not able to systematically collect staff enthusiasm for ERSI activities, anecdotally, staff echoed youth enthusiasm, as evidenced by staff comments, such as:

> I was glad it was an explicit focus with something besides the instruments…to be able to allow the kids to do this other activity and then bring it back to like—well how does this apply to lining up, or how does this apply to playing as a section, or practicing something new, or learning something new at school? What are we going to do when someone's breaking the rules, or, like, running when they're not supposed to, or pushes somebody, you know, and all of those things that they have to learn to deal with as children. You know, I'm glad we did it.

Rates of attendance during ERSI activities also speak to the acceptability of intervention activities, with an average attendance of 83 percent of children involved in ERSI at Sites 1 and 2. Site 3 experienced somewhat lower attendance rates, with an average of 73 percent of children attending activities. This may reflect, in part, the increased variability in group composition and structure at Site 3. Due to staffing changes at the Debut level, the main Teaching Artist for the Prelude group changed after the third ERSI session; three sessions later, the Prelude and Debut classes were combined for a few weeks (two ERSI sessions). Another Teaching Artist came in towards the end of the year, and the Prelude and Debut groups were divided again for the last few months (five ERSI sessions), although a few children originally enrolled in the Prelude level stayed with the Debut orchestra. This high level of transition and turnover may have accounted for decreased enrollment and attendance at Site 3.

Mental Health Symptoms

Total scores on the RCADS revealed no significant differences between children in ERSI and children in the control condition. While there is some evidence that children who participated in ERSI may have benefited in specific domains relative to children in the control condition (e.g., small effect sizes favoring ERSI for the Separation Anxiety, Panic Disorder, and Depression subscales of the RCADS), there do not appear to be differences in other important domains (e.g., Social Anxiety, Generalized Anxiety). Further, there is evidence that children in the control condition reported fewer obsessive compulsive symptoms compared to children who participated in ERSI. Thus, findings largely suggest that ERSI did not have a significant effect on internalizing problems.

It is possible that ERSI activities, while designed to focus on skills that have been associated with internalizing problems, were not explicitly focused enough on internalizing problems to effect change in these outcomes. However, there is some evidence that ERSI may have led to decreases within specific internalizing domains for children who participated, suggesting that activities designed to give youth opportunities to practice emotion regulation, communication, and problem solving skills may indeed have had a small effect on internalizing problems. Further, as ERSI was designed in a universal prevention framework, it is possible that while differences were not apparent in end-of-year measures, the skills practiced in ERSI may help in an ongoing way to promote good mental health for the children who participated, leading to decreased risk for internalizing problems later in life.

Emotion Regulation Strategies

Findings related to proposed ERSI mechanisms of change were mixed. Results did not support predictions that ERSI would lead to greater use of cognitive reappraisal among children who participated in ERSI compared to children in the control condition. Although the original intervention design was intended to take place across 28 weeks, with short (15 minute), frequent sessions to offer youth opportunities for practice with feedback of each skill across several sessions, intervention sessions were fewer (between seven and twelve sessions) and longer (range 20-60 minutes) allowing for more practice within sessions but less opportunity to reinforce what was learned in previous weeks. Overall, children received, on average, 91 percent of planned ERSI time (62% at Site 1, 60% at Site 2, 103% at Site 3). As a result, children who participated in ERSI were given only a few explicit opportunities to learn about and practice each skill, which may not have allowed for enough time to gain competence in that skill or affect the frequency with which children use the skill.

However, we did find preliminary evidence that children who participated in ERSI reported using emotional suppression less frequently than children in the control condition. While there were only a few sessions focused on emotion understanding and expression, it is possible that since these sessions occurred early in implementation, children continued to practice appropriate emotional expression with feedback during the remaining ERSI activities (e.g., when working on effective communication with peers). It also may have been one of the skills that was better able to be integrated within the rest of the music curriculum, as music is often emotionally expressive and lends itself more readily to discussions of emotion (e.g., Juslin et al., 2010). Teaching Artists may also

have had more experience or comfort with these skills relative to others (e.g., cognitive reappraisal) and may have included discussions of emotion in other activities during their classes, leading to further opportunities for children to practice.

Functioning

Perhaps the most consistent results came from measures of social functioning and life satisfaction. Children who participated in ERSI reported fewer peer problems and more prosocial behavior compared to children in the control condition. It may be that repeated opportunities focused on understanding emotional states, practicing effective communication, and solving problems within a group increased children's competence in social situations and their desire to help others. Indeed, although the ensemble nature of orchestra rehearsals gave all children in MMP an opportunity to work together as a group, the explicit focus on emotional understanding, communication, and problem solving, coupled with specific questions to get children engaged in practicing and reflecting on these skills, provided even more opportunities for children in ERSI to practice effective emotional expression and interpretation, communication, and problem solving.

Similarly, children who participated in ERSI reported more satisfaction with life domains reflecting living circumstances, self, friends, and family compared to children in the control condition. Although ERSI activities did not explicitly target these satisfaction outcomes, it is possible that the skills practiced in ERSI (feelings identification, communication, and problem solving) generalized to other domains (e.g., friendships, family), leading to a greater understanding of others, increased social competency, and

decreased problems within these domains. This, in turn, may have increased satisfaction in these areas relative to children in the control condition.

It is important to note that measures of social functioning and satisfaction were included because of significant interest from MMP Consort members to examine the effect of ERSI on functional outcomes. Consorts wanted a way to be able to quantify possible change in domains reflected in MMP's vision to improve the quality of life for youth involved in their program. Specifically, MMP's mission includes the following goals: "To develop values of community, sharing and teamwork; to develop creativity, discipline, perseverance and self-esteem; to inspire children to reach excellence through their own efforts; to improve the performance of children at school; [and] to strengthen the unity of families." Consorts selected the MSLSS because the measure's domains mapped onto the specific goals within MMP's vision. Without the participation of Consorts in the design and implementation of the current study, we likely would have missed these important outcomes related to ERSI's impact.

Limitations

While we did find preliminary evidence of ERSI's promise in important domains (e.g., emotion regulation, life satisfaction), results should be considered in light of the study's limitations. First, our analyses were severely underpowered to detect a significant difference between ERSI participants and control participants, should a significant effect have been present. A priori power analyses looking at one-way Analyses of Covariance with an alpha level of .05, power at 0.80, and one covariate (i.e., baseline scores) revealed the study would require a sample size of 128 to detect a medium effect (i.e., partial η^2=.06), over three times as large as our final sample of 42 youth. Thus, it is not

surprising that the majority of our analyses were not statistically significant. However, the effect sizes offer preliminary support that ERSI did in fact lead to decreased use of emotional suppression, fewer peer problems, and increased life satisfaction and prosocial behavior relative to the control condition.

The study also had several limitations related to measurement. Although we originally had planned to collect data at baseline and at the end of the year for both youth and parents, we were only able to collect data from 14 parents at the end of year timepoint. Researchers called and emailed families and attended end of year MMP events to try to increase parent participation but were unable to get many parents to complete measures. This may have reflected competing demands on parents' time at the end of the school year or, for some, diminishing enthusiasm for the program overall. Thus, our findings are based solely on youth report which only gives a partial look at youth functioning in the domains of interest.

Additionally, although research assistants read measures aloud to children and checked for comprehension, the low internal consistency obtained for some measures (e.g., the emotion suppression subscale of the ERQ-CA, the peer problems subscale of the SDQ) suggests that these measures may not have been well understood by children in our study. Although there was interest in including physiological and computer-based measures of emotion regulation, concerns by Consort members about the feasibility and acceptability of these types of measures with MMP youth and families led to their elimination from the research protocol. In particular, Consorts worried about the length of administration for some measures (an additional 15-25 minutes), for which children would have missed more music instruction, and Consorts weighed the incremental

validity of including these measures against feasibility and acceptability concerns. Ultimately, Consorts eliminated physiological or computer-based measurement, which likely increased the quality of the data that were obtained (e.g., by having children remain more engaged for a shorter number of measures), as well as the measures' and study's overall acceptability. Discussions like these highlight the value and importance of including community stakeholders as equal decision-makers in the research design and implementation process.

Another limitation was the absence of fidelity data. We had planned to collect fidelity data for Teaching Artists' implementation during the third delivery of each ERSI activity, but given that all activities were either solely facilitated by the first author or co-facilitated by the first author and the Teaching Artist, we lost the opportunity to measure the fidelity of Teaching Artists' sole implementation of ERSI activities. However, Teaching Artists did express enthusiasm for activities and increased comfort with ERSI activities at some sites, as evidenced by increased co-facilitation of activities over the course of the year. Similarly, we did not observe or code the activities taking place in control classes. Thus, we do not know the extent to which Teaching Artists in control classrooms utilized games and activities resembling ours or used other activities that likewise explicitly focused on the same skills. It is possible that Teaching Artists who observed and co-facilitated ERSI activities shared their experiences with their colleagues. However, as is the case for many after-school workforces, there are few built-in, explicit opportunities in MMP for sharing ideas or learning from fellow Teaching Artists, and so it is difficult to know the extent to which Teaching Artists may have been able to share their experiences with ERSI activities with each other.

Finally, although we found preliminary evidence for the impact of ERSI activities, it is important to note several barriers to implementation which may have affected the extent to which ERSI activities were able to be integrated effectively into MMP. Teaching Artists often faced competing priorities (e.g., visits from donors, pressure for students to perform well at seasonal concerts), and thus, there were several weeks where, despite Teaching Artist enthusiasm for ERSI activities, all class time was devoted to other activities (e.g., concert rehearsal). This, in turn, limited the overall amount of time youth spent in ERSI activities.

Future Directions and Conclusions

The current study provided preliminary evidence of the acceptability and promise of an integrated emotion regulation skills intervention in the context of an after-school music program. Following a CBPR approach, we sought representation from different stakeholders (e.g., MMP staff, parents, and youth) to design and implement ERSI activities. While we were able to implement activities at three different MMP sites, various challenges with implementation limited the extent to which we could evaluate the sustainability of ERSI activities within MMP's curriculum. Future studies should focus on training and consultation models with MMP Teaching Artists with a focus on comfort, confidence, and capacity to implement ERSI activities as part of the regular music education curriculum offered. Additionally, in consultation with a community advisory board, future studies should expand the measurement of constructs of interest (e.g., emotion regulation, social functioning) beyond youth self-report to include other informants (e.g., parents, Teaching Artists) and/or other measurement methods (e.g., task-based measures) to corroborate the information obtained from youth. Finally, the

current study only implemented and evaluated intervention activities with the youngest, most novice students in MMP. Future work should examine ways that skills highlighted in ERSI (feelings identification, communication, and problem solving) can be incorporated into developmentally-appropriate activities within music education curricula for implementation with older youth.

Tables and Figures

Table 1. Descriptive Statistics Across Sites

	Site 1		Site 2*	Site 3		Total	
	Control (*n*=15)	ERSI (*n*=9)	Control (*n*=4)	Control (*n*=4)	ERSI (*n*=26)	Control (*n*=23)	ERSI (*n*=35)
Age M(SD)	7.93 (1.75)	8.44 (2.40)	7.50 (2.07)	8.00 (1.41)	7.38 (1.63)	7.65 (1.67)	7.66 (1.88)
Boys	5	7	1	2	15	8	22
Girls	10	2	3	2	12	15	14
Black/African American	4	1	3	0	0	7	1
Haitian American	8	5	0	0	0	8	5
Hispanic/Latino	2	3	1	3	23	6	26
White	0	0	0	1	2	1	2
Asian/Pacific Islander	0	0	0	0	2	0	2
Other race/ethnicity	1	0	0	0	0	1	0
% Family Income < $25,000	52.6		83.3	45.2		51.8	
% Parent Completed 2-year college degree or more	45.0		16.7	82.1		64.7	

*No youth at Site 2 who completed impact measures were in the ERSI condition.

Table 2. Means, Standard Deviations, F-statistics, p-values, and Partial η^2 for End of Year RCADS Subscale Scores

	Mean (SD) ERSI	Mean (SD) Control	*F*	*p*	Partial η^2
Separation Anxiety	6.40 (4.73)	7.47 (6.04)	.92	.345	.026
Generalized Anxiety	5.56 (4.31)	6.38 (5.08)	.11	.746	.003
Social Anxiety	8.90 (6.32)	9.23 (6.17)	1.35×10^{-4}	.991	<.001
Panic Disorder	5.42 (4.29)	7.38 (4.94)	.58	.453	.016
Obsessive Compulsive	7.23 (4.25)	5.66 (3.70)	2.13	.154	.056
Depression	7.88 (4.46)	8.62 (6.06)	.55	.464	.015
Total Anxiety	34.04 (19.71)	36.12 (21.83)	.004	.949	<.001

Possible ranges for subscale scores: Separation Anxiety (0-21), Generalized Anxiety (0-18), Social Anxiety (0-27), Panic Disorder (0-27), Obsessive Compulsive (0-18), Depression (0-30), and Total Anxiety (0-111).

Table 3. RCI Significant Change for Life Satisfaction Subscales

Full Sample (*n*=40)						
	ERSI improve	ERSI no change	ERSI worsen	Control improve	Control no change	Control worsen
School (*N*)	2	23	2	2	10	1
Living (*N*)	1	24	2	0	12	1
Self (*N*)	0	26	1	1	11	1
Friends (*N*)	1	25	1	0	12	1
Family (*N*)	2	22	3	0	12	1
RCADS elevated at baseline (*n*=9)						
	ERSI improve	ERSI no change	ERSI worsen	Control improve	Control no change	Control worsen
School (*N*)	0	5	0	0	4	0
Living (*N*)	0	4	1	0	4	0
Self (*N*)	0	5	0	0	3	1
Friends (*N*)	1	3	1	0	3	1
Family (*N*)	0	3	2	0	4	0
RCADS not elevated at baseline (*n*=29)						
	ERSI improve	ERSI no change	ERSI worsen	Control improve	Control no change	Control worsen
School (*N*)	2	16	2	2	6	1
Living (*N*)	1	18	1	0	8	1
Self (*N*)	0	19	1	1	8	0
Friends (*N*)	0	20	0	0	8	1
Family (*N*)	1	18	1	0	8	1

IV. FIELD STATEMENT

High rates of mental health need among urban youth, coupled with the under-identification of mental health problems and limited access to and utilization of mental health services, speak to the challenge of promoting good mental health among urban youth, particularly those living in poverty. The studies presented here represent part of a larger body of work aimed at characterizing the scale of mental health need for urban youth and developing alternatives to standard intervention models in order to reach those youth who otherwise may not receive services. Regarding measurement in particular, there is growing evidence of the utility of brief screening measures such as the Strengths and Difficulties Questionnaire (Goodman, 1997) to characterize mental health need at an epidemiological level and identify individual youth who are in need of intervention. Yet, as previously mentioned, once youth are identified as having mental health need, they may be less likely to have access to or take advantage of psychological services (e.g., Dwyer, Nicholson, & Battista, 2006; Hinshaw & Stier, 2008). Given their increasing popularity and utilization, after-school programs may provide a good fit for promoting mental health among urban youth. The studies described in chapters two and four provide preliminary evidence for integrating mental health intervention activities into children's already-occurring routines, indicated by high levels of satisfaction with intervention activities and preliminary evidence of promise in emotion regulation skills, social functioning, and life satisfaction.

Where to go from here? Findings from these studies highlight the need to not only have communities in mind during assessment and intervention design but to create lasting, sustainable partnerships with community stakeholders to address those issues that

are most pressing for their communities. If mental health interventions aim to promote adaptive functioning and minimize suffering due to mental health problems, those interventions must be designed not just with diverse groups in mind but with their equitable participation. This equitable participation elevates the rigor and relevance of the research conducted, maximizes engagement of all partners, and helps ensure the feasibility of research design and intervention implementation. More importantly, participatory research maximizes the opportunity for findings to respond to local priorities and contribute generalizable knowledge to advance science and service. Without it, psychological science will continue to struggle with how to address the mental health need of diverse communities.

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APPENDIX

Appendix A: Pilot ERSI Activities

Module 1: Feelings Identification and Relaxation Techniques

Introduction: Introduce yourself to students. Begin with short icebreaker game (e.g. go around the circle and introducing yourself by name and by an animal with the same letter, or the more complicated version where one person starts by introducing themselves and each successive person introduces the ones before; or throw a ball to someone who introduces themselves and says something they like to do, while all other people who like to do that stand up and switch places).

After the icebreaker, give a brief introduction for being in class and for what you will be doing with the students that day. Something like, "Abi and your Miami Music Project teachers have asked me to come in this week and do some music games. Games are so cool because you can learn things from them that you can use in lots of different situations—when you're feeling angry, frustrated, nervous, sad…"

Activity 1: Making Silence This activity is designed to help students become more aware of what is going on in their minds and in their bodies when they are feeling a certain way. In the Miami Music Project, the teachers emphasize that music is a collection of sounds and silences, and they highlight that without "making silence" you cannot make music. Capitalizing on this, begin the activity by starting a discussion of what the students already know about making silence. Ask questions like, "Who has heard Abi/your teacher say to make silence? What does that mean? We know what you're not doing when you're making silence, but what are you doing?"

After this discussion, explain that when we make silence, we can pay attention to what is going on in our bodies and noticing what is going on around us. Hand out raisins to the kids and give them the following instructions: "Pick up a raisin and hold it in the

palm of your hand. Look at it. Examine it. Describe the raisin. What does it look like? What color is it? How would you describe the texture? Now, feel the raisin in the palm of your hand. What does it feel like against your skin? Pick it up with your other hand. What does it feel like in your fingers? Is it slimy? Rough? Smooth? Soft? Hard? Squeeze it softly. What do you feel? Smell the raisin. Describe how it smells. Put the raisin in your mouth, but do not eat it. What does it feel like on your tongue? What does the texture feel like now? How does it taste? How does the taste compare to the way it smelled? Move it around in your mouth and notice every aspect of the raisin. Bite the raisin and think about what you taste. Now how does the raisin feel in your mouth? Finish chewing and eat the raisin. How did it taste? Describe the experience of the raisin."

Alternatively, explain again that when we make silence, we can pay attention to what is going on in our bodies and what is going on around us. Then, give the students instructions to close their eyes and pay attention to various parts of their body (e.g. stomach, heart, head) as they are making silence and as you're talking to them. Talk about things unrelated to emotional situations (e.g. "think about your favorite animal," "imagine you are eating your favorite ice cream"). This should reflect guided imagery in some ways, but it shouldn't be extensive.

Activity 2: Music Excerpts and Reactions This activity is designed to more concretely show what was talked about in the previous activity and to help students connect what they're feeling in their bodies and what they're thinking. Hand out journals to students. Explain that they will be practicing making silence while you play different pieces of music. Explain that for each piece of music, they will write down what they are feeling in their bodies and where, as well as what they're thinking about as they're

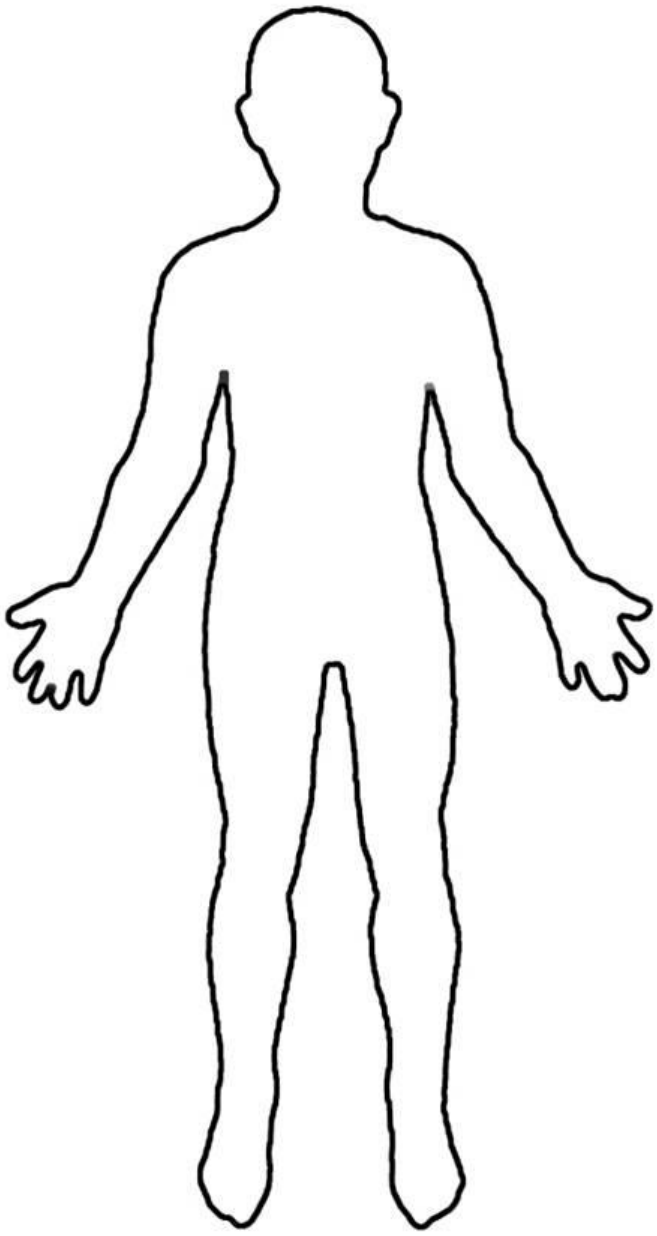
listening to the music. Play the first two excerpts where they're just sitting and listening to the music. Then, for the next three excerpts, ask the students to stand up and dance how they feel the music, pausing the music every once in a while "freeze-dance style" and having the students write in their journals at those moments what they are feeling.

After playing all of the excerpts, bring the group back in to a short discussion. Ask students to share what they've written for the different musical excerpts.

Activity 3: Breathing This activity is designed to teach students about how different types of breathing can affect our mood and about how to use the skills we have taught them. This activity goes off of the different breathing strategies in different programs such as "balloon breathing." Explain to the students that just as things that are going on around us can affect how we feel, we can also do things to change the way we're feeling in a certain situation. Explain that today we're going to be learning about one way to help us calm down and that later in the week we will be going over other things to do to change the way we feel in a given situation. Ask the students to describe the differences between a whole note, half note, quarter note, and eighth note. Have the students practice breathing each of these different ways. Ask the students about how the different types of breathing made them feel (and try to elicit a response that the longer notes made them feel calmer).

Explain that half and whole note breathing can be used in different situations to help us calm down. Ask students when it might be helpful to use half or whole note breathing.

Song/Piece # _____



What am I feeling?

_____

Where am I feeling it?

_____

Module 2: Cognitions

Introduction: The introduction to this module is to give a musical example to help students start thinking about cognitive strategies and how they affect our emotions and behavior. Explain that you will be playing a melody, and you want students to write what they think of the melody. Start off by saying something like "Listen when I play this melody—how does it sound?" Play the melody in a major key. "Now listen when I play this one—how does it sound?" Play the melody in a minor key. Ask students to share what they wrote and describe the similarities and differences. Say during the discussion something like, "It's the same melody, but we think about it differently."

Activity 1: Movie Clip This activity is designed to help students notice how our thoughts can affect the way we feel. Explain that the students will watch a scene from a movie, and ask them to pay attention to what is going on and what the characters are thinking and feeling. Play the film clip (where one character misinterprets what is going on in a situation). Ask students to describe that character's misinterpretation (e.g. "What was he thinking? How did he act after that?"). Explain the risk of negative interpretations in a situation and how that can affect what we do.

Activity 2: Discussion This activity is designed to more explicitly reference how misinterpretations can affect how different situations play out. Start off by giving the following example: "You're sitting in class doing some math work when the teacher gets up, walks over to you, and says she needs to speak with you. What are some things that could be happening?" Have students generate several different ideas for what might be going on in the situation. After they've generated several ideas, ask them how each thought would make them feel (e.g. nervous, sad, excited) and begin

listing the thoughts in those different categories. Explain how we can change the way we feel about something by changing the way we think about it. Brainstorm with students different situations where the way we think about something will affect how we feel about it and how we act. Choose one or two situations to use as examples of generating the "bad feeling" thoughts and the "good feeling" thoughts.

Activity 3: Active Movie Clips This activity is designed to give students more practice with the concept that we can change how we feel by changing the way we think. Start off by explaining that the students will watch another scene from a movie, but that this time will be a little different. The students will watch the first part of the clip. Then, pause the movie clip and ask the students to brainstorm in their journals the possible "good feeling" thoughts and the "bad feeling" thoughts the character might have. Next, break the students into two groups and have each group come up with a way that the scene would end depending on how the character is thinking. Have one group do the "good feeling" thoughts and the other group the "bad feeling" thoughts. Bring the two groups back together to share what they came up with. Have students finish watching the movie clip to see how it turns out. If time permits, repeat the exercise with another movie clip and flip-flop the types of thoughts that the groups brainstorm (e.g. the "good feeling" thoughts group would do the "bad feeling" thoughts and vice versa).

What We Think and Feel

MELODY 1 Thoughts

_____

_____

MELODY 2 Thoughts

_____

_____

MOVIE CLIP 1

What was the character thinking?

_____

_____

How was he feeling?

_____

_____

MOVIE CLIP 2

“Good feeling” thoughts

_____

_____

_____

“Bad feeling” thoughts

_____

_____

_____

MOVIE CLIP 3

“Good feeling” thoughts

_____

_____

_____

“Bad feeling” thoughts

_____

_____

_____

Module 3: Problem Solving

Introduction and Activity 1: Birthday Game The introduction to this module is to play the "birthday game." Tell the students that for the first activity of the day, they will be starting off with a challenge. Explain that students will need to line up according to their birthday, starting with January on one end and ending with December on the other. Explain that the catch is that they cannot talk to each other to figure this out and that they will have to communicate in other ways. Give the students a few minutes to complete this and then check in to see if they got the right order. Begin a discussion about how the activity went (e.g. "What did you find challenging about the activity?" "How did you communicate with each other?")

Activity 2: Discuss Problem Solving Steps This activity is designed to help students effectively problem solve. Ask students to write down different problems they encounter and the ways that they solve problems. Next, have volunteers share what they've written with the group. Identify aspects of what they say that map onto the five problem solving steps that will be described later (SONGS: Situation, Options, Narrow down, Go for it, Sit back and evaluate). Explain that when we have problems that we deal with there are certain strategies that can help us make a good decision. Select one of the situations shared by the students and use it as an example as you go through the different steps. Discuss how the first step when solving problems is to look at the situation ("Situation"). Describe how this includes looking at what is going on and how it makes you feel. Have the students describe how a particular situation would make them feel, describe what might be going on, etc. Next, describe the second step in the problem solving process ("Options") and how it is important to think of different things we might

do in a given situation. Have students generate different options for how to deal with a particular problem situation. Next, describe the third step in the problem solving sequence ("Narrow down"). Explain how it is useful to think of how the different options would lead to different outcomes and to choose one that would lead to the desired outcome. Have students select which option they think is best, given the situation. Next, describe the fourth step in the problem solving sequence ("Go for it"), saying that this is the step where you put your chosen option into practice. Finally, describe the fifth step ("Sit back and evaluate"). Explain the importance of looking at what we do from the perspective of how things turned out (e.g. "Did I get my desired outcome?" "How did other people react?").

Activity 3: Crash Landing This activity is designed to help students put their problem solving skills to the test. Start off by breaking the students into pairs. Explain that this next activity will be a good chance to practice the skills they just learned. Then, read the following scenario: "You (in your pairs) are the crew for a new type of test aircraft. The aircraft crashed on a tiny island in the ocean; the island has no clean, fresh water source. The crew survived; however, one crew member lost their sight while the other lost the use of their arms. All that is left from the aircraft is one radio transmitter, one weather machine, pieces of the aircraft, and some tape. The weather machine just indicated that it is going to rain in 4 minutes and the crew needs to use the tape and aircraft pieces to create cups that can catch the rain water. If the crew is not able to catch enough rain water, they may not survive until the rescue team arrives." Within each pair, blindfold one student (the "blind" one) and tie the arms of the other student behind their back (the one who "lost use of their arms"). Instruct students that they have 4 minutes to

use the materials provided to collect rain water. After the four minutes, bring the group back in for discussion. Discuss how the activity went, how each team member felt during the activity, what feelings each student had during the activity, and how students dealt with those feelings during the course of the activity.

Handling Our Problems

What are some problems you have to deal with?

_____

_____

_____

_____

_____

_____

How do you deal with those problems?

_____

_____

_____

_____

_____

_____

Appendix B: Research Measures

Parent Demographic Questionnaire

1. What is your child's age? _____

2. What is your child's gender?

- ☐ Male
- ☐ Female

3. Which best describes your child's race or ethnicity?

a. Black (not Hispanic)
b. Hispanic/Latino
c. Asian or Pacific Islander
d. Native American or Alaskan Native
e. White (not Hispanic)
f. Other (Specify)_____

4. What is your age?

a. Under 18
b. Between 18-21
c. Between 22-25
d. Between 26-35
e. Between 36-45
f. Over 45

5. Please specify your gender:

- ☐ Male
- ☐ Female

6. Which best describes your race or ethnicity?

a. Black (not Hispanic)
b. Hispanic/Latino
c. Asian or Pacific Islander
d. Native American or Alaskan Native
e. White (not Hispanic)
f. Other (Specify)_____

7. **What is your highest level of education?**
    a. Less than high school
    b. High school or GED
    c. Some college, other classes/training not related to degree
    d. Completed two-year college degree
    e. Completed four-year college degree
    f. Some graduate work
    g. Master's degree or higher

8. **What is your country of origin? _____**

9. **What is your preferred language? _____**

10. **Please specify your present annual family income:**

    a. $0-$9,999
    b. $10,000-$14,999
    c. $15,000-$19,999
    d. $20,000-$24,999
    e. $25,000-$29,999
    f. $30,000-$34,999
    g. $35,000-$39,999
    h. $40,000-$44,999
    i. $45,000-$49,999
    j. $50,000-$59,999
    k. $60,000-$69,999
    l. $70,000-79,999
    m. $80,000-$89,999
    n. $90,000-$99,999
    o. Over $100,000

11. **How many adults are in your household? _____**

12. **How many children are in your household? _____**

13. **Do you have any other children in Miami Music Project? Y N**
    If so, how many? _____

14. **How involved would you as a parent like to be with Miami Music Project?**
    Not at all A little Somewhat Very much

15. **How far do you travel to get to Miami Music Project? _____**

16. **What other activities is your family involved in? _____**
    _____

Tell us about Miami Music Project (MMP)!

We would like to know how you and your child feel about coming to MMP. Please put a check in the box that shows how true each of these things is for you.
There are no right or wrong answers.

	Not True	A Little True	Somewhat True	Very True
1. I feel like part of a community at MMP.				
2. I appreciate MMP's focus on music education.				
3. I wish there were more opportunities for parents in MMP.				
4. I appreciate MMP's focus on social transformation.				
5. I would recommend MMP to other families.				

6. Why did you choose MMP? Circle as many as you like:

   I want my child to learn about music

   I want my child to play an instrument

   My child wants to be with his/her friends

   I want my child to have fun after school

   I want my child to develop socially

   I want my child to meet new kids

   I want an affordable after-school program

   I want my child to have something to do after school

   I want my child to feel they are part of a community

7. What are some other reasons your child goes to MMP?

8. What are your expectations for your child and your family in MMP?

9. Do you play an instrument? Y N

10. How much experience do you have with music?

None A little Some A lot

RCADS

Please put a circle around the word that shows how often each of these things happens for **your child**.

1.	My child worries about things.	Never	Sometimes	Often	Always
2.	My child feels sad or empty.	Never	Sometimes	Often	Always
3.	When my child has a problem, he/she gets a funny feeling in his/her stomach.	Never	Sometimes	Often	Always
4.	My child worries when he/she thinks he/she has done poorly at something.	Never	Sometimes	Often	Always
5.	My child would feel afraid of being on his/her own at home.	Never	Sometimes	Often	Always
6.	Nothing is much fun for my child anymore.	Never	Sometimes	Often	Always
7.	My child feels scared when taking a test.	Never	Sometimes	Often	Always
8.	My child worries when he/she thinks someone is angry with him/her.	Never	Sometimes	Often	Always
9.	My child worries about being away from me.	Never	Sometimes	Often	Always
10.	My child is bothered by bad or silly thoughts or pictures in his/her mind.	Never	Sometimes	Often	Always
11.	My child has trouble sleeping.	Never	Sometimes	Often	Always
12.	My child worries about doing badly at school work.	Never	Sometimes	Often	Always
13.	My child worries that something awful will happen to someone in the family.	Never	Sometimes	Often	Always
14.	My child suddenly feels as if he/she can't breathe when there is no reason for this.	Never	Sometimes	Often	Always
15.	My child has problems with his/her appetite.	Never	Sometimes	Often	Always
16.	My child has to keep checking that he/she has done things right (like the switch is off, or the door is locked).	Never	Sometimes	Often	Always
17.	My child feels scared to sleep on his/her own.	Never	Sometimes	Often	Always
18.	My child has trouble going to school	Never	Sometimes	Often	Always

	in the mornings because of feeling nervous or afraid.				
19.	My child has no energy for things.	Never	Sometimes	Often	Always
20.	My child worries about looking foolish.	Never	Sometimes	Often	Always
21.	My child is tired a lot.	Never	Sometimes	Often	Always
22.	My child worries that bad things will happen to him/her.	Never	Sometimes	Often	Always
23.	My child can't seem to get bad or silly thoughts out of his/her head.	Never	Sometimes	Often	Always
24.	When my child has a problem, his/her heart beats really fast.	Never	Sometimes	Often	Always
25.	My child cannot think clearly.	Never	Sometimes	Often	Always
26.	My child suddenly starts to tremble or shake when there is no reason for this.	Never	Sometimes	Often	Always
27.	My child worries that something bad will happen to him/her.	Never	Sometimes	Often	Always
28.	When my child has a problem, he/she feels shaky.	Never	Sometimes	Often	Always
29.	My child feels worthless.	Never	Sometimes	Often	Always
30.	My child worries about making mistakes.	Never	Sometimes	Often	Always
31.	My child has to think of special thoughts (like numbers or words) to stop bad things from happening.	Never	Sometimes	Often	Always
32.	My child worries what other people think of him/her.	Never	Sometimes	Often	Always
33.	My child is afraid of being in crowded places (like shopping centers, the movies, buses, busy playgrounds).	Never	Sometimes	Often	Always
34.	All of a sudden my child will feel really scared for no reason at all.	Never	Sometimes	Often	Always
35.	My child worries about what is going to happen.	Never	Sometimes	Often	Always
36.	My child suddenly becomes dizzy or faint when there is no reason for this.	Never	Sometimes	Often	Always
37.	My child thinks about death.	Never	Sometimes	Often	Always
38.	My child feels afraid if he/she has to talk in front of the class.	Never	Sometimes	Often	Always

39.	My child's heart suddenly starts to beat too quickly for no reason.	Never	Sometimes	Often	Always
40.	My child feels like he/she doesn't want to move.	Never	Sometimes	Often	Always
41.	My child worries that he/she will suddenly get a scared feeling when there is nothing to be afraid of.	Never	Sometimes	Often	Always
42.	My child has to do some things over and over again (like washing hands, cleaning, or putting things in a certain order).	Never	Sometimes	Often	Always
43.	My child feels afraid that he/she will make a fool of him/herself in front of people.	Never	Sometimes	Often	Always
44.	My child has to do some things in just the right way to stop bad things from happening.	Never	Sometimes	Often	Always
45.	My child worries when in bed at night.	Never	Sometimes	Often	Always
46.	My child would feel scared if he/she had to stay away from home overnight.	Never	Sometimes	Often	Always
47.	My child feels restless.	Never	Sometimes	Often	Always

Strengths and Difficulties Questionnaire

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of the child's behavior over the last six months or this school year.

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings			
Restless, overactive, cannot stay still for long			
Often complains of headaches, stomach-aches or sickness			
Shares readily with other children, for example toys, treats, pencils			
Often loses temper			
Rather solitary, prefers to play alone			
Generally well behaved, usually does what adults request			
Many worries or often seems worried			
Helpful if someone is hurt, upset or feeling ill			
Constantly fidgeting or squirming			
Has at least one good friend			
Often fights with other children or bullies them			
Often unhappy, depressed or tearful			
Generally liked by other children			
Easily distracted, concentration wanders			

Nervous or clingy in new situations, easily loses confidence			
Kind to younger children			
Often lies or cheats			
Picked on or bullied by other children			
Often offers to help others (parents, teachers, other children)			
Thinks things out before acting			
Steals from home, school or elsewhere			
Gets along better with adults than with other children			
Many fears, easily scared			
Good attention span, sees work through to the end			

SSIS

Please read each item and think about **your child's** behavior during the past two months. Then, decide how often your child displays the behavior.

If your child **never** behaves this way, check the **'Never'** box.
If your child **seldom** behaves this way, check the **'Seldom'** box.
If your child **often** behaves this way, check the **'Often'** box.
If your child **almost always** behaves this way, check the **'Almost Always'** box.

SOCIAL SKILLS	Never	Seldom	Often	Almost Always
1. Expresses feelings when wronged.				
2. Follows household rules.				
3. Tries to understand how you feel.				
4. Says "thank you."				
5. Asks for help from adults.				
6. Takes care when using other people's things.				
7. Pays attention.				
8. Tries to make others feel better.				
9. Joins activities that have already started.				
10. Takes turns in conversations.				
11. Says when there is a problem.				
12. Works well with family members.				
13. Forgives others.				
14. Speaks in appropriate tone of voice.				
15. Stands up for others who are treated unfairly.				
16. Is well-behaved when unsupervised.				
17. Follows your directions.				
18. Tries to understand how others feel.				
19. Starts conversations with peers.				
20. Uses gestures or body appropriately with others.				
21. Resolves disagreements with you calmly.				
22. Respects the property of others.				
23. Makes friends easily.				
24. Says "please."				
25. Questions rules that may be unfair.				

SOCIAL SKILLS	Never	Seldom	Often	Almost Always
26. Takes responsibility for her/his own actions.				
27. Completes tasks without bothering others.				
28. Tries to comfort others.				
29. Interacts well with other children.				
30. Responds well when others start a conversation or activity.				
31. Stays calm when teased.				
32. Does what she/he promised.				
33. Introduces herself/himself to others.				
34. Takes criticism without getting upset.				
35. Says nice things about herself/himself without bragging.				
36. Makes a compromise during a conflict.				
37. Follows rules when playing games with others.				
38. Shows concern for others.				
39. Invites others to join in activities.				
40. Makes eye contact when talking.				
41. Tolerates peers when they are annoying.				
42. Takes responsibility for her/his own mistakes.				
43. Starts conversations with adults.				
44. Responds appropriately when pushed or hit.				
45. Stands up for herself/himself when treated unfairly.				
46. Stays calm when disagreeing with others.				

PROBLEM BEHAVIORS	**Never**	**Seldom**	**Often**	**Almost Always**
47. Has difficulty waiting for turn.				
48. Repeats the same thing over and over.				
49. Forces others to act against their will.				
50. Has stereotyped motor behaviors.				
51. Fidgets or moves around too much.				
52. Keeps others out of social circles.				
53. Is inattentive.				
54. Acts without thinking.				
55. Becomes upset when routines change.				
56. Is aggressive toward people or objects.				
57. Withdraws from others.				
58. Has temper tantrums.				
59. Does things to makes others feel scared.				
60. Breaks into or stops group activities.				
61. Has low energy or is lethargic.				
62. Uses odd physical gestures in interactions.				
63. Bullies others.				
64. Acts anxious with others.				
65. Talks back to adults.				
66. Says nobody likes her/him.				
67. Gets distracted easily.				
68. Acts sad or depressed.				
69. Is preoccupied with object parts.				

PROBLEM BEHAVIORS	**Never**	**Seldom**	**Often**	**Almost Always**
70. Disobeys rules or requests.				
71. Has sleeping problems.				
72. Lies or does not tell the truth.				
73. Gets embarrassed easily.				
74. Says bad things about self.				
75. Has nonfunctional routines or rituals.				
76. Cheats in games or activities.				
77. Acts lonely.				
78. Fights with others.				
79. Has eating problems.				

THANK YOU FOR YOUR TIME!

ERQ

We would like to ask you some questions about **your** emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways. For each item, please answer using the following scale:

1----------2----------3----------4----------5----------6----------7
strongly disagree **neutral** **strongly agree**

1. ____ When I want to feel more *positive* emotion (such as joy or amusement), I *change what I'm thinking about*.

2. ____ I keep my emotions to myself.

3. ____ When I want to feel less *negative* emotion (such as sadness or anger), I *change what I'm thinking about*.

4. ____ When I am feeling *positive* emotions, I am careful not to express them.

5. ____ When I'm faced with a stressful situation, I make myself *think about it* in a way that helps me stay calm.

6. ____ I control my emotions by *not expressing them*.

7. ____ When I want to feel more *positive* emotion, I *change the way I'm thinking* about the situation.

8. ____ I control my emotions by *changing the way I think* about the situation I'm in.

9. ____ When I am feeling *negative* emotions, I make sure not to express them.

10. ____ When I want to feel less *negative* emotion, I *change the way I'm thinking* about the situation.

HSCL

Instructions: Listed below are some symptoms or problems that people sometimes have. Please read each one carefully and decide how much the symptoms bothered or distressed **you** in the last week, including today (these are symptoms that YOU have had, not your child). Please circle your answer.

	Not at all	**A little**	**Quite a bit**	**Extremely**
1. Feeling low in energy, slowed down.				
2. Blaming yourself for things.				
3. Crying easily.				
4. Loss of sexual interest or pleasure.				
5. Poor appetite.				
6. Difficulty falling asleep, staying asleep.				
7. Feeling hopeless about the future.				
8. Feeling sad.				
9. Feeling lonely.				
10. Thoughts of ending your life.				
11. Feeling of being trapped or caught.				
12. Worrying too much about things.				
13. Feeling no interest in things.				
14. Feeling everything is an effort.				
15. Feelings of worthlessness.				

Tell us about Miami Music Project (MMP)!

We would like to know how you feel about coming to MMP. Please put a check in the box that shows how often each of these things happen to you.
There are no right or wrong answers.

	Not True	A Little True	Somewhat True	Very True
11. I learn a lot at MMP.				
12. I enjoy MMP activities.				
13. I worry I might look foolish while playing my instrument.				
14. I like my teachers in MMP.				
15. I worry about making mistakes playing my instrument.				
16. People at MMP are nice to me.				
17. I am easily distracted and find it difficult to concentrate at MMP.				
18. I worry that I will do badly at music.				
19. My instrument is important to me.				
20. I feel bad at MMP.				
21. I have trouble going to MMP because I feel nervous or afraid.				

22. I look forward to going to MMP.				
23. There are many things about MMP I don't like.				
24. I wish I didn't have to go to MMP.				
25. I have one good friend or more at MMP.				
26. I feel scared when I have an MMP evaluation (like a chair test).				
27. I am afraid to go on stage.				
28. I like being in MMP.				

Tell us more!

29. What do you like about MMP? What would you change?

RCADS

Please put a circle around the word that shows how often each of these things happen to you. There are no right or wrong answers.

		Never	Sometimes	Often	Always
1.	I worry about things.	Never	Sometimes	Often	Always
2.	I feel sad or empty.	Never	Sometimes	Often	Always
3.	When I have a problem, I get a funny feeling in my stomach.	Never	Sometimes	Often	Always
4.	I worry when I think I have done poorly at something.	Never	Sometimes	Often	Always
5.	I would feel afraid of being on my own at home.	Never	Sometimes	Often	Always
6.	Nothing is much fun anymore.	Never	Sometimes	Often	Always
7.	I feel scared when I have to take a test.	Never	Sometimes	Often	Always
8.	I feel worried when I think someone is angry with me.	Never	Sometimes	Often	Always
9.	I worry about being away from my parents.	Never	Sometimes	Often	Always
10.	I get bothered by bad or silly thoughts or pictures in my mind.	Never	Sometimes	Often	Always
11.	I have trouble sleeping.	Never	Sometimes	Often	Always
12.	I worry that I will do badly at any school work.	Never	Sometimes	Often	Always
13.	I worry that something awful will happen to someone in my family.	Never	Sometimes	Often	Always
14.	I suddenly feel as if I can't breathe when there is no reason for this.	Never	Sometimes	Often	Always
15.	I have problems with my appetite.	Never	Sometimes	Often	Always
16.	I have to keep checking that I have done things right (like the switch is off, or the door is locked).	Never	Sometimes	Often	Always

		Never	Sometimes	Often	Always
17.	I feel scared if I have to sleep on my own.	Never	Sometimes	Often	Always
18.	I have trouble going to school in the mornings because I feel nervous or afraid.	Never	Sometimes	Often	Always
19.	I have no energy for things.	Never	Sometimes	Often	Always
20.	I worry I might look foolish.	Never	Sometimes	Often	Always
21.	I am tired a lot.	Never	Sometimes	Often	Always
22.	I worry that bad things will happen to me.	Never	Sometimes	Often	Always
23.	I can't seem to get bad or silly thoughts out of my head.	Never	Sometimes	Often	Always
24.	When I have a problem, my heart beats really fast.	Never	Sometimes	Often	Always
25.	I cannot think clearly.	Never	Sometimes	Often	Always
26.	I suddenly start to tremble or shake when there is no reason for this.	Never	Sometimes	Often	Always
27.	I worry that something bad will happen to me.	Never	Sometimes	Often	Always
28.	When I have a problem, I feel shaky.	Never	Sometimes	Often	Always
29.	I feel worthless.	Never	Sometimes	Often	Always
30.	I worry about making mistakes.	Never	Sometimes	Often	Always
31.	I have to think of special thoughts (like numbers or words) to stop bad things from happening.	Never	Sometimes	Often	Always
32.	I worry what other people think of me.	Never	Sometimes	Often	Always
33.	I am afraid of being in crowded places (like shopping centers, the movies, buses, busy playgrounds).	Never	Sometimes	Often	Always
34.	All of a sudden I feel really scared for no reason at all.	Never	Sometimes	Often	Always
35.	I worry about what is going to happen.	Never	Sometimes	Often	Always

		Never	Sometimes	Often	Always
36.	I suddenly become dizzy or faint when there is no reason for this.	Never	Sometimes	Often	Always
37.	I think about death.	Never	Sometimes	Often	Always
38.	I feel afraid if I have to talk in front of my class.	Never	Sometimes	Often	Always
39.	My heart suddenly starts to beat too quickly for no reason.	Never	Sometimes	Often	Always
40.	I feel like I don't want to move.	Never	Sometimes	Often	Always
41.	I worry that I will suddenly get a scared feeling when there is nothing to be afraid of.	Never	Sometimes	Often	Always
42.	I have to do some things over and over again (like washing my hands, cleaning or putting things in a certain order).	Never	Sometimes	Often	Always
43.	I feel afraid that I will make a fool of myself in front of people.	Never	Sometimes	Often	Always
44.	I have to do some things in just the right way to stop bad things from happening.	Never	Sometimes	Often	Always
45.	I worry when I go to bed at night.	Never	Sometimes	Often	Always
46.	I would feel scared if I had to stay away from home overnight.	Never	Sometimes	Often	Always
47.	I feel restless.	Never	Sometimes	Often	Always

Strengths and Difficulties Questionnaire

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of how things have been for you over the last six months.

	Not True	Somewhat True	Certainly True
I try to be nice to other people. I care about their feelings.			
I usually share with others, for example games or food.			
I would rather be alone than with people of my age.			
I am helpful if someone is hurt, upset, or feeling ill.			
I have one good friend or more.			
Other people my age generally like me.			
I am kind to younger children.			
Other children or young people pick on me or bully me.			
I often offer to help others (parents, teachers, children).			
I get along better with adults than with people my own age.			

ERQ-CA

We would like to ask you some questions about your thoughts and feelings, in particular, how you control your feelings. The questions below involve two types of feelings. One is what you feel inside. The other is how you show your emotions in the way you talk or behave. Although some of the questions may look the same, they are different in important ways. For each question, please answer using the following scale:

1	2	3	4	5
NO!	no	In the middle	yes	YES!

PRACTICE QUESTION: _____ Medicine helps people feel better when they are sick.

Some good feelings:

Some bad feelings:

1. _____ When I want to have more *good* feelings (like happy), I *change what I am thinking*.

2. _____ I keep my feelings to myself.

3. _____ I control my *bad* feelings (like sad) by *changing what I am thinking*.

4. _____ When I am feeling *good* feelings, I try not to show them.

5. _____ When I am in a stressful situation, I *think about it* in a way that helps me stay calm.

6. _____ I control my feelings by *not showing them*.

7. _____ When I want to feel *good* feelings, I *change the way I am thinking*.

8. _____ I control my feelings by *changing the way I think*.

9. _____ When I am feeling *bad* feelings, I make sure not to show them.

10. _____ When I want to feel *fewer bad feelings*, I *change the way I am thinking*.

MULTIDIMENSIONAL STUDENTS' LIFE SATISFACTION SCALE (MSLSS)

We would like to know what thoughts about life you've had during the past several weeks. Think about how you spend each day and night and then think about how your life has been during most of this time. Here are some questions that ask you to indicate your satisfaction with life. Check the box next to each statement that shows how true that statement is for you. It is important to know what you REALLY think, so please answer the question the way you really feel, not how you think you should. This is NOT a test. There are NO right or wrong answers. Your answers will NOT affect your grades, and no one will be told your answers.

	Not True	A Little True	Somewhat True	Very True
1. My friends are nice to me				
2. I am fun to be around				
3. I feel bad at school				
4. I have a bad time with my friends				
5. There are lots of things I can do well				
6. I learn a lot at school				
7. I like spending time with my parents				
8. My family is better than most				
9. There are many things about school I don't like				
10. I think I am good looking				
11. My friends are great				
12. My friends will help me if I need it				

13. I wish I didn't have to go to school				
14. I like myself				
15. There are lots of fun things to do where I live				
16. My friends treat me well				
17. Most people like me				
18. I enjoy being at home with my family				
19. My family gets along well together				
20. I look forward to going to school				
21. My parents treat me fairly				
22. I like being in school				
23. My friends are mean to me				
24. I wish I had different friends				
25. School is interesting				
26. I enjoy school activities				
27. I wish I lived in a different house				
28. Members of my family talk nicely to one another				
29. I have a lot of fun with my friends				
30. My parents and I do fun things together				
31. I like my neighborhood				

32. I wish I lived somewhere else				
33. I am a nice person				
34. This town is filled with mean people				
35. I like to try new things				
36. My family's house is nice				
37. I like my neighbors				
38. I have enough friends				
39. I wish there were different people in my neighborhood				
40. I like where I live				

Your thoughts count!

How much did you enjoy the **Musical Pieces** activity? (Circle one)

How much did you enjoy the **Helicopter** game? (Circle one)

How much did you enjoy the **Partner Challenges** game? (Circle one)

How much did you enjoy the **Emotion Orchestra** game? (Circle one)

How much did you enjoy the **Lineup** activity? (Circle one)

How much did you enjoy the **Undercover Conductor** game? (Circle one)

How much did you enjoy the **Breathing** activity? (Circle one)

How much did you enjoy the **What Were They Thinking** activity?
(Circle one)

How much did you enjoy the **Making an Instrument** activity?
(Circle one)

What was your **favorite** game or activity?

_____

_____

What did you **like** about the games and activities?

_____

_____

_____

_____

What would you **change**?

_____

_____

_____

_____

Teaching Artist Interview Guide

PARTICIPANT ID:
MODERATOR ID:
LOCATION:
DATE OF INTERVIEW:
TIME STARTED:
TIME ENDED:

Welcome

Good afternoon/evening and welcome. Thank you for taking the time to join our discussion about the activities we provided in the Miami Music Project. My name is [Name of Moderator] and I am [State Role on Project] for **Project Crescendo**. Assisting me is [Name], also from our project.

Overview of the Topic

"I am interested in hearing from you about your experiences with the activities we led. I want to learn from your experiences so far so we can improve our efforts."

You were invited because you are a music educator participating in this program. We want to better understand your experiences and opinions about the activities."

Ground Rules

"*As stated in the consent form that you signed, you agreed to participate in this interview for approximately 90 minutes. We are recording the session so that we don't miss any of your comments. Later, this recording will be transcribed and maintained on a secure computer and destroyed after 7 years. No names will be included in any of those transcriptions. Codes will be used to protect your identity and the identity of anyone else you mention.*

"There are no right or wrong answers. We just want to know what you think. If you have a cell phone, it would help if you could put it on quiet or vibrate, and if you need to answer the phone please step out to do so. Feel free to eat throughout the meeting!

Do you have any questions before we get started?"

Opening Question

1. How well do you think music lends itself to helping kids build social/life skills? For example, calming down when frustrated and problem solving.

Guiding Questions

1. Let's talk first about your observations of the students during the activities. Tell me what you thought about the student's engagement and participation.

   Cued:

   a. How engaged were the students in the activities?
   b. What kinds of things did students learn from the activities?
   c. How have these activities influenced student motivation/participation in MMP?

   Now let's talk about your experience of the activities and the degree to which you felt they were relevant and helpful.

   Cued:

   d. How interested are you to integrate these activities into the classes/rehearsals you lead with the children?
   e. How comfortable would you feel leading these activities on your own? What kind of training or support would be helpful / welcomed?
   f. What challenges do you anticipate in leading the activities on your own?
   g. How would you change the activities to improve them?
   h. What else would you like to add about these activities?

2. Remember the day when we:
   a. Played musical clips and asked students to draw or write what they were feeling and thinking?
   b. Had the students divide into partners and small groups to complete different challenges?
   c. Played "helicopter" (had students form shapes that could be "seen by a helicopter")?
   d. Played "emotion orchestra" where students were different feelings sections?
   e. Played "lineup" where the students lined up by age without speaking?
   f. Played "undercover conductor?"
   g. Talked about deep breathing and when to use it?
   h. Talked about how what we think influences how we feel?
   i. Had the students divide into partners and work together to create a musical instrument with materials provided?

Summary

Moderator gives a short summary of participants' discussion of the questions above.

"What did I miss? What didn't we touch on about the program that you'd like to discuss?"

Closing

"This ends our interview today. What questions do you have for me?"

"Thank you very much. I really appreciate the time you have taken to discuss these questions, and give your honest feedback about the program. Your feedback and opinions will really help us shape this work so that it best supports Miami Music Project's El Sistema program and the children and families they serve."

VITA

ERIN REBECCA HEDEMANN

2018-2019	Clinical Psychology Predoctoral Internship – Integrated Health Care Track University of New Mexico Health Sciences Center Albuquerque, New Mexico
2015-2017	Ruth L. Kirschstein National Research Service Award Individual Fellowship National Institute of Mental Health
2011-2014	Presidential Fellowship Florida International University
2011-Present	Doctoral Candidate in Clinical Psychology Florida International University Miami, Florida
2007-2011	B.S. in Psychology (with honors), summa cum laude B.F.A. in Vocal Performance Tulane University New Orleans, Louisiana

SELECTED PUBLICATIONS AND PRESENTATIONS

Hedemann, E.R., & Frazier. S.L. (2017). Reducing Risks for Anxiety and Depression among Urban Youth: Leveraging After School Programs to Promote Emotion Regulation. *Administration and Policy in Mental Health and Mental Health Services Research, 44*(5), 756-770. Doi: 10.1007/s10488-016-0758-x

Hedemann, E.R., Durosier, E., & Frazier, S.L. (2015, September). Reducing Risks for Anxiety and Depression Among Urban Youth: Leveraging after-School Programs to Promote Emotion Regulation. Poster presented at the 9th World Congress on the Promotion of Mental Health and the Prevention of Mental and Behavioural Disorders. Columbia, SC.

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Motoca, L. M., del Busto, C.T., Hedemann, E., Bechor, M., & Silverman, W.K. (2013, April). *The impact of parenting behaviors on child anxiety and avoidance in a clinic referred sample: An observational study.* Paper presented at the biennial meeting of the Society for Research in Child Development. Seattle, Washington.

Motoca, L., del Busto, C., Hedemann, E., Bechor, M., & Silverman, W.K. (2013, April). *Contextual Influences on Childhood Anxiety*. Symposium conducted at the biennial meeting of the Society for Research in Child Development, Seattle, WA.

Boustani, M. M., Frazier, S. L., Becker, K., Bechor, M., Dinizulu, S. M., Hedemann, E. R et al. (2012, October). Common elements of adolescent prevention programming: Minimizing the burden while maximizing the reach. Presented at The National Conference in Clinical Child and Adolescent Psychology. Lawrence, KS.