

**The Impact of a Short-Term Music Therapy Program on Emotional Regulation
Development in Preschool Age Children Following the COVID-19 Pandemic**

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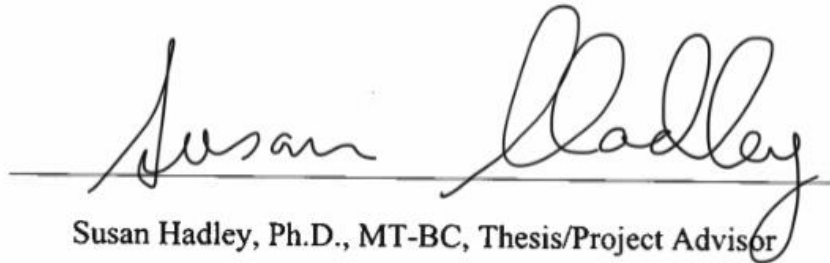
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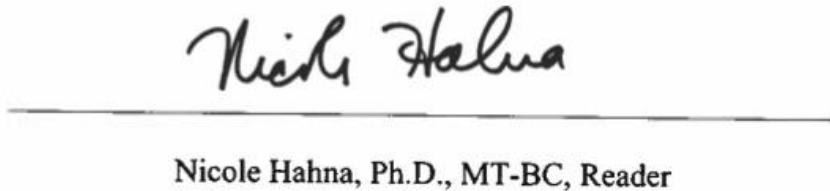
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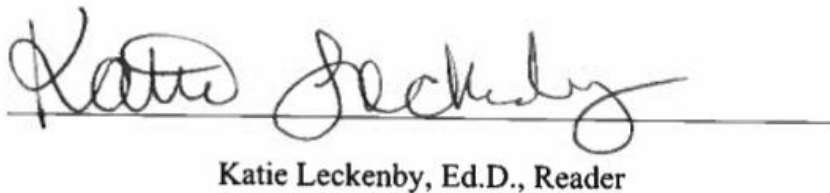
Presented to the
Slippery Rock University
Music Therapy Program



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Abstract

Early child development has been impacted by the COVID-19 pandemic, which effects later development through school and adulthood (Davies et al., 2021; Jiao et al. 2020; Paulauskaite et al., 2021; Spiteri, 2021; Takahashi and Honda, 2021; Timmons et al., 2021). Concerns related to early childhood development of academic and social-emotional skills, including emotion regulation, have arisen due to isolation during the COVID-19 pandemic, which have been linked to increased school readiness, forming positive relationships, and preventing maladaptive behaviors in older childhood and adulthood. Music therapy has been shown to support emotion regulation skills in older childhood and adolescence (Foran, 2009; Ross, 2016; Williams, 2018; Zhenyu and Zhenhua, 2022). There is limited research on the use of music therapy in early childhood for emotion regulation. Since the developmental impact of the COVID-19 pandemic, it is imperative to understand ways music therapy can support emotion regulation development in early childhood. This study used a short-term music therapy program focused on shifting arousal levels in preschool-age children to understand the effect on emotion regulation skill development in early childhood with two groups experiencing music therapy over the course of eight weeks compared to eight weeks of typical learning. Participants were assessed at baseline, following music therapy, and following typical learning for emotion regulation skills. 83% of participants experienced a reduction in behavioral concerns with music therapy. Half of participants increased self-regulation with music therapy. On average all participants with music therapy intervention increased social-emotional and attention and self-control skills. This research shows potential for improving emotion-regulation skill in early childhood, but future research is needed with a larger sample size. Other areas of social-emotional skills could benefit from future research in preschool-age children, such as attachment.

Keywords: early childhood, preschool, development, emotion regulation, COVID-19

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Introduction

The COVID-19 pandemic significantly impacted the lives of children and their development (Davies et al., 2021; Jiao et al. 2020; Paulauskaite et al., 2021; Spiteri, 2021; Takahashi and Honda, 2021; Timmons et al., 2021). This is especially true in early childhood development, which has a lasting impact on children through their school years and later adulthood. Due to COVID-19 and the need for isolation, there have been concerns related to early childhood development of academic skills, language acquisition, socialization, behavior, and emotional regulation (Davies et al., 2021; Jiao et al. 2020; Paulauskaite et al., 2021; Spiteri, 2021; Takahashi and Honda, 2021; Timmons et al., 2021). Within her own work, the researcher of this current study noticed delays in emotional development in preschool-age children following the COVID-19 pandemic, which motivated this research study. The researcher noted children had difficulty understanding where their bodies were in space, when they were experiencing big emotions, and how to calm down with help attention. Children had shorter attention spans, increased wandering through the classroom, and had difficulty transitioning between activities. Given that music therapy has been used previously within early childhood to work on emotional regulation skills (Bentley et al., 2022; de l'Etoile, 2015; Ross, 2016; Sena Moore, 2015, 2018; Zhenyu & Zhenhua, 2022), the researcher sought to understand the effects of a short-term music therapy program for large groups on emotional regulation development in preschool-age children.

For the purpose of this study, preschool-age children are children aged three and four, up to their fifth birthday, who are not eligible to enroll in kindergarten in the state of Maryland based on age requirements. According to the American Psychological Association, emotional regulation is “the ability of an individual to modulate an emotion or set of emotions” (2018). This study concentrated on the following emotion regulation skills: attention span, labeling feelings and recognizing them in others, understanding, accepting, and showing empathy, self-soothing, following directions, obeying rules, and impulse control.

Literature Review

The Effects of COVID-19 on Early Childhood

The COVID-19 pandemic affected the early childhood education and care received by preschool children in a profound way. Prior to COVID-19, children were typically able to receive early childhood services for five to six hours a day, which included interaction with peers and instruction geared towards emotional and educational development (Timmons et al., 2021). This was greatly reduced when instruction was transitioned to remote learning that occurred for typically 5 hours per week through an online format that did not support peer interaction and play in the same manner (Timmons et al., 2021). Developmentally, preschool age children are unable to independently log onto a virtual classroom and attend instruction, reducing access to early childhood education and care. Additionally, COVID-19 impacted the number of children who attended a form of early childhood education and care. “Between March and June 2020, only 5–10% of children who usually attended ECEC did so {Department for Education [DfE], 2020}” (Davies et al., 2021, p. 2). As a result, children whose access to early childhood education and social-emotional learning was reduced, putting them at risk for lasting developmental impacts from the COVID-19 pandemic.

Kerker et al. (2023) expressed concerns for school readiness of children following the COVID-19 pandemic. Early childhood education and care programs are focused on preschool child development in educational and socioemotional skills to prepare children for kindergarten. This care has long term effects on academic, social, emotional, and socioeconomic implications for children who have access to this care. Early childhood education and care programs are often limited in lower resourced communities where families of color and/or lower socioeconomic class reside, which was further limited by COVID-19 (Kerker et al., 2023). Spiteri (2021) noted from studies of other national crises, such as economic regressions and previous pandemics, that “the proportion of kindergarten children living in moderate and high-poverty neighborhoods increased and the academic skills gap between poor and non-poor children within neighborhood poverty categories grew” (p. 144), which further impacted their school readiness for kindergarten. As a result, early childhood education and care programs must focus on developmental skills that declined over the course of the COVID-19 pandemic due to limited access to care. Kerker et al. (2023) noted that “Programs and educators must be prepared to support children’s social-emotional well-being and mental health, especially in communities of color where levels of mental health concerns were high even prior to COVID-19, and have been disproportionately heightened throughout the pandemic” (p. 272).

In addition to the impact on development due to limited access to early childhood education and care, the stress at home related to the COVID-19 pandemic caused an increase emotional and behavioral concerns in children. Jalongo (2021) emphasized that there was little literature on the impacts of COVID-19 and that the entirety of the topic has been published since 2020. Emotional trauma from the pandemic was not limited to adults, but often extended from the parents down to the children who suffered from the stress, too. For example, “mothers with

children in the 0–5 age group found it especially difficult to balance the demands of home and work” (Jalongo, 2021, p. 766). The children of these mothers were likely to have fears and stress related to the pandemic of their own and experienced felt stress from their families attempting to find balance in work and home during COVID-19. Takahashi and Honda (2021) completed a study examining the prevalence of emotional and behavioral problems over the course of the COVID-19 pandemic in Japan. Parents reported an increase of behavioral concerns, attentional disorders, and mental illness in their children over the course of the 3-month study (Takahashi & Honda, 2021). Parental depression was also calculated as a part of the study, which also increased over the course of 3 months (Takahashi & Honda, 2021). Many researchers expressed similar concerns of increased behavioral and emotional concerns observed in children over the course of the pandemic (Jalongo, 2021; Jiao et al., 2020; Kerker et al., 2023; Moula et al., 2023; Paulauskaite et al., 2021). Jiao et al. (2020) noticed that children experienced increased fear, clinginess, inattention, and irritability from parental reports in a study during February of 2020. In the UK, “a 50% increase in clinically significant mental health conditions in childhood was also reported (Children’s Society, 2020)” (Moula et al., 2023, p. 1). Moula et al. (2023) reported a concern that the “pandemic will have a long-term negative effect on [children’s] mental health (Young Minds, 2021)” (p. 1). Suggestions to counteract social isolation and anxiety caused during COVID-19 included the use of music, physical activity, and collaboration (Jiao et al., 2020).

Music Therapy and Emotional Regulation

Emotion regulation “is the ability for a person to maintain a comfortable state of arousal by controlling and shifting [their] emotional experiences and expressions” (Sena Moore, 2015, p. iii). It is imperative for a child to develop emotional regulation skills so they can be successful in

school, form relationships with their peers, and manage behavioral responses (Sena Moore, 2015). The earlier emotional regulation skills are taught to children, the more useful they will be to prevent maladaptive behaviors later in childhood, adolescence, and adulthood (Bentley et al., 2022; Boylan & Goldman, 2010; Han et al., 2017; Sena Moore, 2015; Williams, 2018). It has been noted by several researchers that children in under-resourced environments may be exposed to more stress in their environments which may negatively impact their self-regulation skills (Jiao et al., 2020; Kerker et al, 2023; Moula et al, 2023; Takahashi & Honda, 2021; Timmons et al, 2021; Williams, 2018). Williams (2018) noted that “Early differences in children’s self-regulatory abilities are thought to be the primary contributor to socioeconomic gaps in school readiness and later achievement” (p. 87). Disproportionately, children who have less access to early childhood education and care are more likely to develop maladaptive behaviors rather than successful emotion regulation skills, further increasing socioeconomic and achievement gaps.

In early childhood education and care, caregivers and teachers initially are the co-regulators of emotion, providing external regulation for the child by recognizing their emotional state and responding to the emotion presented. The goal is for caregivers and teachers to transition this passive co-regulation to active, internal self-regulation of emotions within the child by helping children identify appropriate and inappropriate emotion regulation strategies (Sena Moore, 2015).

Music therapy has been found to support the learning of emotion regulation strategies in early childhood. Songs that (a) incorporate language, (b) are repetitive, (c) have a consistent structure, (d) change in timbre, tonal center, dynamic level, tempo without disrupting the consistency, (e) are easily memorized and sung by children, (f) incorporate movement, (g) allow for musical turn-taking, (h) encourage children to follow the rules, (i) express emotional content,

(j) encourage responsibility, and (k) provide a predictable structure for improvisation can be useful in developing emotion regulation skills in preschool children (Schwartz, 2008). Beat synchronization has also been reported to be successful in helping children regulate emotions based on the principle of musical entrainment (Bentley et al., 2022; Foran, 2009; Ross, 2016; Williams, 2018). This skill helps children connect with their present state and change to the external beat to synchronize with the environment around them, essentially engaging them in the emotion regulation skill of controlling or shifting the emotional response through the use of steady beat. Foran (2009) recommended music therapy involve processing emotional experiences of trauma through as many modalities as possible, such as visuals, thoughts, movements, sensations, etc. This included the use of beat synchronization in music and movement paired with the use of relaxation exercises and comforting routines.

Music therapy has been used with a variety of age groups and populations to work on emotion regulation skills. Zhenyu and Zhenhua (2022) used music listening experiences for children an average age of 12 in Beijing secondary schools. The study explored how children with intellectual disability and typically developing children differentiate emotions with the use of music listening and drawing. The study found that “music has a regulatory and stimulating effect on the psyche of children and adolescents with special needs” (Zhenyu & Zhenhua, 2022, para. 5 under Introduction). A study with elementary aged children, focused on rhythm-based strategies for appropriate self-expression in students diagnosed with emotional and behavioral issues, demonstrated an increase of self-expression and reduced maladaptive behaviors in children as reported by a teacher/paraprofessional following the rhythm-based strategies used by both music therapist-led classes and teacher-lead classes (Ross, 2016). Ross (2016) stated, “In targeting a much younger age group, students may experience increases in positive behavior

much earlier in their public education career. This, in turn, may facilitate more time for positive social interaction with peers and staff, more quality time for learning, more independence, and eventually better social/communication skills upon graduation” (p. 101).

Other creative arts therapies have been used to address socio-emotional skills in school-aged children and adolescents. Art therapy programs have been used with adolescents and college students to address emotional expression, positive behavior, and emotional regulation (Cortina & Fazel, 2015; Gruber & Oepen, 2018). With school-aged children, art therapy has been used following adverse experiences to address social and emotional mental health (McDonald, 2022). Moula et al. (2023) also used art therapy to address emotional expression, feelings of safety, and to reduce stress and increase sleep in school-aged children. Panagiotopoulou (2018) used dance therapy with high school students in Greece to address social and affective skills. Dance therapy was found to have a significant impact on development in socio-emotional skills of school-aged children engaged in a school-based program (Salgado Pereira & Marques-Pinto, 2017). Bräuninger and Rössli (2023) also showed a positive impact on school-aged children’s socio-emotional skills using psychomotor therapy, though results were limited due to COVID-19 and a reduction in participants during the study. Anxiety, aggression, and ADHD symptoms were reduced with males aged 6-18 who engaged in psychodrama (Mojahed et al., 2021). In terms of preschool children, sandplay therapy reduced aggression and increased positive emotional regulation of children four to five years of age (Han et al., 2017).

Within music therapy and the creative arts studies mentioned above, there is little research involving younger populations regarding emotion regulation strategies. Tuomi et al. (2017) conducted a review of literature on the use of music therapy within early childhood. Most articles found for children in music therapy were for children under the age of one year old or

above five years of age (Tuomi et al., 2017). Of these, very few articles have focused on skills surrounding self-regulation, supporting the need for additional research within music therapy for use with children between the ages of one to five and development of emotion regulation skills. In 2015, de l'Etoile conducted a study on infant-directed singing to assist in developing self-regulation skills in infants with Down Syndrome. The results showed an increase in attention and secure attachment associated with self-regulation assisted by mothers during infant-directed singing, which supports the use of music therapy to work on emotion regulation skills (de l'Etoile, 2015).

Two studies were found supporting the use of music therapy to address emotion regulation skills in preschool age children. A random controlled study conducted by Bentley et al. (2022), addressed executive function, self-regulation, and school readiness skills in preschool children aged three to four years old. The study focused on the RAMSR program, which uses rhythm and movement activities to address the self-regulation domain in cognitive development that can be music therapist or teacher led in a preschool classroom (Bentley et al., 2022). The session structure typically included:

- (1) warm-up involving body percussion;
- (2) becoming familiar involving an adaptation of a familiar early childhood song with rhythmic movement;
- (3) moving to the beat involving large gross motor movements;
- (4) playing to the beat involving simple rhythm sticks or castanets;
- (5) dancing to the beat involving slightly more complex gross motor movement patterns than in Section 3, and often involving visual-motor skills and coordination such as mirroring the shape of rhythm sticks on the floor with bodies; and
- (6) calming which includes a series of movements and then stillness accompanied by

relaxation music to support physiological entrainment to a calmer state, targeting embodied emotional regulation (Bentley et al., 2022, p. 5)

The results suggested that older children and girls engaged in music therapy had stronger development of executive function skills, self-regulation, and school readiness skills. Sena Moore's (2015) research focused on the musical contour regulation facilitation (MCRF) program to address emotion regulation development in preschool children ages three to five. The MCRF program was pilot tested using a small number of typically developing children in small pull-out groups (Sena Moore, 2015). Sena Moore (2015) created the MCRF program with the thought that "intervention should focus less on behaviors and more on specific factors that underlie [emotion regulation] development, including providing opportunities to practice regulating emotional states and creating supportive, caring environments that are predictable, feel safe, and include responsive caregivers" (p. 411). The program alternates music of different arousal levels throughout the session to focus on shifting emotional states (Sena Moore, 2015) The study showed improvement with the small group of children in emotion regulation development, but there was no control group in the study to confirm whether other factors affected the change (Sena Moore, 2015). This pilot study showed support of the use music therapy with children experiencing maladaptive emotion regulation behaviors (Sena Moore, 2015).

Following COVID-19, more children are likely to experience delayed emotion regulation development and school readiness (Davies et al., 2021; Kerker, et al, 2023; Spiteri, 2021; Timmons, et al., 2021). There have been no studies on music therapy and emotion regulation with early childhood following the COVID-19 pandemic. Given the positive impact of music therapy on emotion regulation prior to COVID-19, and the increased need for preschool children emotional regulation development due to COVID-19, it stands to reason that the use of music

therapy for children experiencing emotion regulation delays and maladaptive behavior following COVID-19 can address these skills. A short-term music therapy program similar to the MCRF could be used to support emotion regulation development in children following COVID-19. To understand the development that naturally occurs in a preschool classroom for emotion regulation development, a control group can be added to assess growth with and without the use of music therapy intervention.

Statement of Purpose

The purpose of this study was to examine the relationship between emotion regulation development and the use of an eight-week whole class music therapy program with preschool-age children following the COVID-19 pandemic. The study controlled for the natural emotion regulation development that occurs over an eight-week period through the use of time sequenced groups and a period of natural observation. The study observed preschool-age children before and after the music therapy program to compare emotion regulation skills to typical developmental markers. Questions that were considered in the development of this research study include:

1. Using developmental scales, how does preschool-age emotional regulation skill development compare over an eight-week period without music therapy?
2. Does the use of an eight-week music therapy program targeted to address age-appropriate emotion regulation skills in preschool-age children have an impact on development?
3. If there is an increase in emotion regulation development due to music therapy, can a group of children who have not previously received music therapy catch up in developmental progression when given the eight-week music therapy program?

This study proposed that there would be a higher increase in emotion regulation development following an 8-week music therapy program than typical development in an eight-week period.

Method

This research stemmed from the pragmatic paradigm, in which the researcher chose the method that best supported the research question. The pragmatic paradigm “emphasizes the importance of common sense and practical thinking” (Mertens, 2015, p. 35). In the pragmatic approach “there is a single ‘real world’ and all individuals have their own unique interpretations of that world” (Mertens, 2015, p. 37). Based on this way of thinking, “the researchers work with communities to determine the intelligent course of action and to determine the appropriateness of those actions once they have been implemented,” so the “method should be decided by the purpose of this research” (Mertens, 2015, p. 38). In this study, the researcher implemented objectivist research methods to achieve the intended purpose: to understand emotional regulation development over the course of a short-term music therapy program with preschool children. The use of quantitative methods assisted the researcher in measuring the change in achievement of developmental markers for preschool children over time. The researcher compared the development that occurred over a specific period to the development achieved following the music therapy program for the same period to understand its effects on emotional regulation in preschool children.

Site of Study

This study took place in prekindergarten classrooms located in an elementary school in the state of Maryland. The school district is located in a rural and low-socioeconomic area on the Eastern Shore of Maryland. The researcher recruited participants from prekindergarten classrooms that were enrolled to receive music therapy programming during the 2023-2024

school year from the practice in which the researcher works. Music therapy services were provided to classrooms enrolled regardless of participation in the study. Classroom teachers collected data using an emotional regulation development assessment through observation only on students who had consent and assent to participate in the study.

Participant Recruitment

This study utilized convenience sampling from schools associated with the researcher's place of employment. Convenience sampling was used due to the time constraints associated with the researcher's master's thesis, as well as the readily available sample of participants due to the partnership already associated between the school district and the researcher. The study had six participants in total with matched groups of three students in each classroom. Groups were determined by the classroom the students were in during the school year when the study initiated.

Participants were recruited from two prekindergarten classrooms in which the teachers agreed to assist in data collection as part of the research. The participant requirements for the study were: Students were three to four years of age, English-speaking, and attended the prekindergarten program in the district for at least two weeks prior to the start of the study.

The researcher sent a letter to the parents of children enrolled in the prekindergarten classrooms inviting them to participate in the study (Appendix A). The researcher assured parents and children that choosing not to participate in the research would not affect their education or inclusion in the music therapy group with their peers negatively. Parents were informed that they or their child could change their mind and withdraw from the study at any point, and the data collected in association with their child would be destroyed.

Upon showing interest in their child participating in the study, parents were provided a consent form that described the study and any potential risks posed to their child (Appendix B). Following parent consent, the researcher asked the child if they would like to participate in the study, assuring them there will be no consequences if they say “no,” and provided them with an assent form to sign using a smile or frown to indicate their choice (Appendix C). The parent consent and child assent forms were formatted in alignment with the Slippery Rock University Institutional Review Board guidelines. The researcher assured parents that the data collected would be de-identified, using a numeric code to replace the child’s name associated with the data, to maintain confidentiality. Once parent consent and child assent had been obtained, the researcher provided emotional regulation assessment forms to the child’s teacher for pre-test data collection.

Research Design

This experimental study utilized a time series design in matched groups (Figure 1). The study was originally proposed to implement a ten-week music therapy program and ten-week observational period without music therapy for each group. However, there was a delay in one classroom’s recruitment that caused the period to be shortened to eight weeks of music therapy and eight weeks without music therapy so that the study fit into the time constraints of the academic school year for the district.

The implementation of an eight-week music therapy program was the independent variable. The dependent variable of emotion regulation skills developed were measured through an assessment form completed by the classroom teacher. This was collected three times over the course of the study starting at the beginning of the study as an initial assessment, as well as in a second and final assessment following each eight-week period. The study controlled for the

natural development of emotion regulation skills over an eight-week period through the use of the time series design and matched groups. Utilizing an observation period of typical learning and matched groups that experience the music therapy program at different times, the assessment of development during a period without music therapy helped to understand the naturally occurring development in these preschool children.

Figure 1



Following parent consent and child assent, the participants were placed into two groups based on their classroom. Then, the participant's teacher completed an initial assessment of their emotional regulation development. The teacher returned initial assessment data within one week. Following the initial assessment, the first group received music therapy services immediately following the initial assessment period for eight weeks. The music therapy program was provided to the whole class, including students who were not participating in the study. Students who were not participating in the study were not assessed by their teacher for emotional regulation development. The second group engaged in typical classroom learning without music therapy sessions for eight weeks. At the completion of their eight-week periods, both groups were again assessed for emotional regulation development by their teacher, using the same scale, and teachers returned the second assessment data within one week.

Each group alternated the condition received following the first eight-week period. The first group participated in traditional classroom learning without music therapy programming. The

second group received the eight-week music therapy program immediately following the second assessment period. At the completion of the second eight-week period, the teachers for each group completed a final assessment of their student's emotional regulation development.

Music Therapy Program Design

The short-term music therapy program was provided to children in a whole class format. All students in the classroom—not just participants in the study—received music therapy as a part of the prekindergarten program once a week. Each music therapy session was 30-minutes in length and occurred weekly.

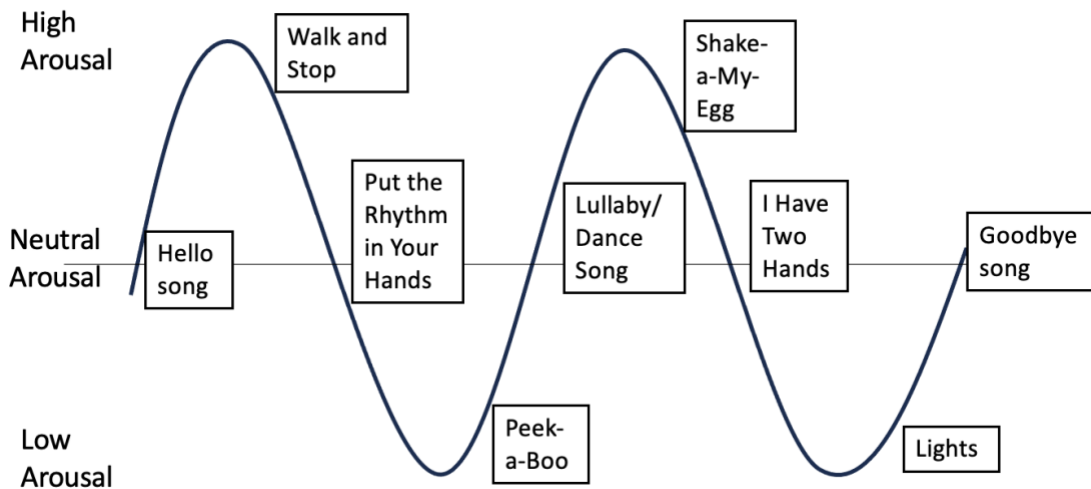
The music therapy program utilized a repetitive structure that changed arousal levels of interventions to support emotional regulation. Songs chosen for the sessions included traditional children's songs (i.e., *Wheels on the Bus*) or songs created with similar melodic structures (i.e., a hello song). Chosen songs supported typical themes and academic concepts for preschool age children (i.e., colors, counting, etc.). Examples of songs used in the sessions can be found in the appendix (Appendix D).

The songs included in the sessions supported either a neutral, high, or low arousal level of engagement. Songs with neutral arousal levels had a moderate tempo, a simple, predictable structure, simple harmonies, and a repetitive melody. High arousal level songs included musical elements such as fast tempo, bright timbre, staccato articulation, louder volume, or an unexpected melody or rhythm that created a sense of higher energy. Low arousal songs were slow in tempo, had softer volume, legato articulation, and lower pitches that evoked a sense of calm in children.

The repetitive structure of sessions included songs that repeated during each week's session such as the hello song and goodbye song, as well as songs that change over the course of

the eight-week period such as a high-arousal movement song (i.e., Walk and Stop) or a low-arousal relaxation song (i.e., Peek-a-Boo). Each session began with a hello song, at a neutral arousal level. Then, it transitioned into a high arousal song, such as movement. After, the high arousal song was a neutral arousal song before transitioning to a low arousal song, such as a fingerplay. This pattern alternating high and low arousal songs with a neutral arousal song between occurred for the duration of the session until the goodbye song at the end of the session, evoking a neutral arousal (Figure 2).

Figure 2



Data Collection

Data was collected using an initial assessment, second assessment, and final assessment to understand how each participant compared with typical emotional regulation developmental markers over the course of the study. The classroom teacher completed the assessments, reporting observed behavior of each participant over the previous two weeks.

The assessment form was revised from the self-regulation and behavior sections of the Deveraux Early Childhood Assessment (DECA) and the Social-Emotional Assessment/Evaluation Measure (SEAM) with additional questions from the researcher regarding impulse

control and attention factors (Appendix E). The DECA assesses children between the ages of three and five for “within-child protective factors central to social and emotional health and resilience, as well as a screener for behavioral concerns” (LeBuffe & Naglieri, 2012, Summary Table, p. 1). The Social-Emotional Assessment/Evaluation Measure (SEAM) measures “children’s social-emotional development and parenting competence” in children between two and 66 months of age (SEAM, 2021, At a Glance, What does it assess?). The teacher reported observed behavior using a five-point Likert scale (0-not true, 1-rarely, 2-occasionally, 3-frequently, 4-very frequently). Each participant name was replaced by a number to maintain confidentiality in recorded data. Participant names were kept in a locked safe separate from the password-protected drive that stored the de-identified data. The data-collection forms were transported to and from the school and provided to teachers in a locked folder to keep any identifiable data secure before it was de-identified by the researcher.

Data Analysis

The data for each participant was totaled for the four sections of the assessment: Self-regulation skills, social-emotional skills, attention and self-control skills, and behavioral concerns. For each section of the assessment, data was analyzed using descriptive statistics, including the mean, median, mode, and standard deviation across the section. Descriptive statistics were analyzed for each participant within each assessment period. The self-regulation and behavioral concerns sections of the research instrument were analyzed using the scoring guide from the DECA to identify the *t*-score and percentile for each participant within each assessment period. The social-emotional skills and attention and self-control skills sections of the instrument were analyzed for quantitative correlations.

Results

There was a total of six participants' (N= 6) data collected over the course of the study (Table 1). The participants were divided into two groups with three students in group A (n= 3) and three students in group B (n= 3). Data was collected for each participant during three assessment periods by teacher report. Descriptive statistics were completed for each participant within each assessment period. All data was analyzed for the group total, mean, and deviation of the scores in each section of the assessment: self-regulation, social-emotional, attention and self-control, and behavioral concerns. The self-regulation and behavioral concerns sections of the assessment, which were from the DECA, reported the *t*-score and percentile using the scoring guide.

Table 1

Sociodemographic Information

Characteristic	Participants	
	<i>n</i>	%
Age (in months)		
40-44	2	33
45-49	2	33
50+	2	33
Gender		
Male	6	100
Female	0	0

Note. Sociodemographic information for all participants.

Behavioral concern score totals decreased with music therapy condition for five out of six participants from baseline (Table 2). The *t*-score and percentile for five out of six participants

decreased for behavioral concerns. The baseline scores for four out of six participants were reported in the typical range (blue) according to the DECA scoring guide, and two participant baseline scores were marked in the concern range (red) (Figure 3). Following music therapy, five out of six participant scores were in the typical range, and one participant score was in the strength range (green) of the DECA scoring guide. For behavioral concerns, a higher score is an area of concern, while a lower score is considered a strength.

Table 2*Behavioral Concerns*

Participant	Baseline			Non-Treatment			Treatment		
	<i>t</i> -score	Total	Percentile	<i>t</i> -score	Total	Percentile	<i>t</i> -score	Total	Percentile
A1	57	13	76	60	15	84	55	12	69
A2	64	18	92	63	17	90	57	13	76
A3	54	11	66	49	8	46	57	13	76
B1	49	8	46	39	4	14	39	4	14
B2	60	15	84	60	15	84	55	12	69
B3	55	12	69	55	12	69	54	11	66

Note. Behavioral concerns DECA *t*-score, total score, and percentile for all participants.

Figure 3

<u>t-scores</u>	<u>Initiative</u>	<u>Self-control</u>	<u>Attachment</u>	<u>Total Protective Factors</u>	<u>Behavioral Concerns</u>	<u>Percentile</u>
72	42 & Above	31 & Above	32	101 & Above	20 & Above	99
70	41	30		98-100	24-25	98
69		29		97	22-23	97
68	40	28	31	96	21	96
66	39	27		95	20	95
65	38			94	19	93
64	37	26	30	93	18	92
63				90-92	17	90
62	36			89	16	88
61	35	25	29	88		86
60				86-87	15	84
59						82
58	33		28	84	14	79
57		23		82-83	13	76
56	32		27	81		73
55	31	22		79-80	12	69
54			26	78	11	66
53	30	21		77		62
52	29	20	25	75-76	10	58
51	28			73-74		54
50	27	19	24	71-72	9	50
49				69-70	8	46
48	26	18	23	67-68		42
47	25			66	7	38
46	24	17	22	64-65		34
45	23	16		63		31
44			21	61-62	6	27
43	22	15		60		24
42	21		20	57-59	5	21
41		14	19	56		18
40	20		18	55		16
39	19	13		54	4	14
38	18	12	17	52-53		12
37				50-51	3	10
36	17	11	16	49		8
35	16			47-48		7
34	14-15	10	15	44-46	2	5
33	13	9	14	42-43		4
31	11-12	8	13	36-41	1	3
30	9-10	7	11-12	32-35		2
28	8 & Below	6 & Below	10 & Below	31 & Below		1

■ Strength ■ Typical ■ Concern

Note. DECA Scoring Guide

Group A students were assessed at baseline, received eight weeks of music therapy and given the second assessment, which was followed by eight weeks of no music therapy and given the final assessment. Group B students were assessed at baseline, received eight weeks of no

music therapy and given the second assessment, which was followed by eight weeks of music therapy and given the final assessment. Self-regulation scores for all group A members increased with music therapy condition (Table 3). The *t*-scores and percentile scores from the DECA for group A members increased likewise. The self-regulation score total decreased for all group B members with the music therapy treatment condition with the *t*-scores and percentiles decreasing in the same manner (Table 3). According to the DECA scoring guide, a higher self-regulation score is considered a strength, while a lower score is an area of concern. At baseline, two out of three group A participants had a self-regulation score considered to be a strength (green) according to the scoring guide, and one participant score was in the typical range (blue). Two out of three participant scores in group B at baseline were considered in the typical range, and one participant score was an area of strength. After music therapy condition, the two participants who had scores in the strength range remained in the strength area of the scoring guide, and the participant who had a score in the typical range maintained a score in the typical range. The participant whose score was considered a strength in group B at baseline had a score in the strength range following music therapy. The two participants at baseline in group B who had scores in the typical range decreased scores, where one participant remained in the typical range, while the other participant decreased to an area of concern.

Table 3*Self-Regulation*

Participant	Baseline			Non-Treatment			Treatment		
	<i>t</i> -score	Total	Percentile	<i>t</i> -score	Total	Percentile	<i>t</i> -score	Total	Percentile
A1	61	25	86	61	25	86	72	31	99
A2	52	20	58	53	21	62	59	24	82
A3	64	26	66	61	29	86	66	27	73
B1	69	29	97	72	33	99	66	27	95
B2	41	14	18	45	16	31	36	11	8
B3	42	20	21	41	19	18	40	18	16

Note. Self-regulation DECA *t*-score, total score, and percentile for all participants.

With music therapy, four out of six participant total scores for social-emotional decreased from baseline (Table 4). A higher score for social-emotional is considered a strength, while a lower score is considered an area of concern. The *M* score for group A during music therapy decreased from baseline. The *SD* of the total scores for group A during music therapy condition increased from baseline. The *M* score total for group B during music therapy decreased from baseline. The *SD* from baseline for group B decreased during music therapy condition. The *M* score for all participants increased from baseline with music therapy. The *SD* with music therapy for all participants increased from baseline. The *M* score for all participants was highest during non-treatment condition (Table 5). Based on age, the *M* decreased for all participants from baseline over the course of the study. The lowest scores were reported in the oldest participants (Table 6).

Table 4*Social-Emotional Total*

Participant	Baseline	Non-Treatment	Treatment
A1	26	25	30
A2	27	27	27
A3	27	30	22
B1	24	23	15
B2	15	17	12
B3	21	20	16

Note. Social-emotional score totals for all participants

Table 5*Social-Emotional Mean & Standard Deviation*

Participant	Baseline		Non-Treatment		Treatment	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group A	26.67	0.58	27.33	2.52	26.33	4.04
Group B	20	4.58	20	3	14.33	2.08
All Participants	19.67	6.16	23.67	4.72	20.33	7.17

Note. Standard deviation and mean scores for each group and all participants.

Table 6*Social-Emotional Mean & Standard Deviation by Age*

Age Range (in months)	Baseline			Non-Treatment			Treatment		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
40-44	3	26.67	0.67	2	26.00	1.41	0	--	--
45-49	1	24.00	0.00	1	23.00	0.00	4	23.50	6.57
50+	2	18.00	4.24	3	20.00	3.00	2	14.00	2.83

Note. Standard deviation and mean scores based on age.

From baseline, two participant attention and self-control total scores increased, and four participant total scores decreased (Table 7). The highest attention and self-control *M* score occurred during non-treatment (Table 8). A higher attention and self-control score is considered an area of strength, while a lower score is considered an area of concern. The attention and self-control *M* score for group A during music therapy increased from baseline. The *SD* of attention and self-control mean scores during music therapy was the lowest across the study for group A members from baseline. The attention and self-control *M* score during treatment condition decreased from baseline for group B. The *SD* of attention and self-control mean score in group B was the highest during music therapy and lowest during non-treatment condition. The *M* score for attention and self-control for all participants increased from baseline during music therapy. The *SD* for all participants attention and self-control mean scores was highest during treatment condition. Based on age, the *M* increased from baseline following treatment condition for participants 40-49 months of age, while the *M* decreased following treatment condition from baseline for participants 50 months of age or more (Table 9).

Table 7*Attention & Self-Control Total*

Participant	Baseline	Non-Treatment	Treatment
A1	48	47	47
A2	31	47	42
A3	48	56	47
B1	41	45	39
B2	23	28	17
B3	30	33	32

Note. Social-emotional score totals for all participants

Table 8*Attention & Self-Control Mean & Standard Deviation*

Participant	Baseline		Non-Treatment		Treatment	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group A	42.33	9.82	50	3	45.33	2.89
Group B	31.33	9.07	35.33	8.74	29.33	11.24
All Participants	36.83	10.38	42.67	10.29	37.33	11.43

Note. Standard deviation and mean scores for each group and all participants.

Table 9*Attention & Self-Control Mean & Standard Deviation by Age*

Age Range (in months)	Baseline			Non-Treatment			Treatment		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
40-44	3	42.33	8.96	2	47.00	0.00	0	--	--
45-49	1	41.00	0.00	1	56.00	0.00	4	43.75	3.57
50+	2	26.50	4.95	3	35.33	8.74	2	24.50	10.61

Note. Standard deviation and mean scores based on age.

Discussion

The behavioral concerns total score, *t*-score, and percentile were reduced from baseline score in five out of six participants, indicating a positive impact of music therapy. According to the DECA scoring guide, two out of six participant scores were areas of concern at baseline, and four out of six participant scores were in the typical range at baseline. Half of participant scores were an area of concern following non-treatment condition. Following music therapy, five out of six participant scores were in the typical range, and one participant had a score in the strength region. Two of the group B participants, who received music therapy following non-treatment condition, decreased behavioral concerns scores from an area of concern to the typical range, while the participant who maintained their score was in an area of strength previously, indicating that they were able to catch up following treatment condition. This supports the findings in previous research on the MCRF program where preschool children's total problems measures significantly decreased (Sena Moore, 2015). Several researchers encourage learning emotion regulation skills in early childhood to prevent maladaptive behaviors in later childhood (Bentley et al., 2022; Boylan & Goldman, 2010; Han et al., 2017; Sena Moore, 2015; Williams, 2018).

The results in this study support the use of music therapy to help develop those skills to reduce maladaptive behaviors.

Given that half of the participants increased self-regulation scores and half decreased following treatment condition, it is inconclusive to note the impact of music therapy on self-regulation skills. All three participant self-regulation scores in group A increased with music therapy, however, two participant self-regulation scores decreased during the period without treatment that followed. Two out of three participants in group B increased scores during the non-treatment period, then all three participants decreased with the period that included music therapy which followed. This was unexpected because preschool children showed a medium effect with the MCRF in emotion regulation skills, though it was not statistically significant (Sena Moore, 2015). However, Bentley et al. (2021) noticed unexpectedly in their study that control participants demonstrated a steeper growth trajectory of self-regulation skills over time compared to those who received the intervention. Children with emotion regulation difficulties were also noticed to progress, regress, and progress again in music therapy over time (Ross, 2016). Therefore, it could be possible that immediate assessment following the intervention might show less growth than a post-test given at a later time.

The average social-emotional score for all participants increased from baseline, though the highest average score occurred during non-treatment period. This shows a positive impact of music therapy, and the growth of these skills over time. The average score for group B, who received non-treatment followed by treatment condition, was maintained in the non-treatment condition, then decreased following music therapy condition. While group A participants, decreased minimally following treatment, and increased later during the non-treatment condition. It was unexpected to see group B participants decrease scores following music therapy condition,

however scores increased at a later time for group A participants, suggesting that social-emotional skills may take longer to develop over time compared to immediately following treatment condition. The standard deviation of social-emotional scores increased from baseline during the music therapy condition, indicating an increased variation between participant scores. Across all participants, the standard deviation of social-emotional scores was greater than seven, indicating a high variation between participant scores from the *M*. While the social-emotional skills results from this study are varied and have a high standard deviation, previous research within music therapy (Sena Moore, 2015) and in other creative arts fields (Han et al., 2017) have also shown inconsistent and non-significant results in positive peer interactions and social-emotional skills. Participants who were older had the lowest social emotional scores following music therapy condition. Research has suggested learning skills at an earlier age so it may be interesting to further study the prime age to address these skills and at what age it becomes more difficult for children to learn these skills (Bentley et al., 2022; Boylan & Goldman, 2010; Han et al., 2017; Kerker et al., 2023; Sena Moore, 2015; Timmons et al., 2021; Williams, 2018). Additionally, these older participants may have been home longer during COVID-19 than their younger peers and have a larger impact on their emotional regulation skills.

Given the increased average attention and self-control score following treatment condition, music therapy to address these skills is supported. However, the highest average score occurred during non-treatment period, suggesting these skills may take longer to develop over time, as seen in previous research on self-regulation skills. The group B participants, who received music therapy later, increased during non-treatment from baseline, then decreased attention and self-control scores following treatment condition, while group A participant scores increased from baseline during treatment and increased further during non-treatment condition

that followed. Since group A scores increased over time, it is possible that these skills take longer to develop and attention and self-control scores taken at a later time, rather than immediately following treatment, may better reflect this growth. During music therapy condition, the standard deviation for all participant attention and self-control scores was over 11, which indicates high variation between scores. This is similar to the effects shown for preschool children in the MCRF in terms of improving scores in attention problems, though not statistically significant (Sena Moore, 2015). According to the MCRF study, improving attention and self-control skills can impact multiple areas of a child's development, such as the ability to learn in school, form and maintain strong relationships with peers and adults, manage and inhibit impulses, and dissociative stress response (Sena Moore, 2015). Sena-Moore considered whether other behaviors and indicators were more sensitive to a music-based approach, rather than attention skills, since most research on attention with music have focused on attention skills specifically instead of other skills (i.e., emotion regulation) (2015). Younger participants attention and self-control scores increased on average from baseline while older participant scores decreased from baseline following treatment condition. These participants may have experienced a larger impact on their emotional regulation skills due to COVID-19 as they were older and would have stayed home longer than their younger peers. Additionally, research suggests learning skills at an earlier age (Bentley et al., 2022; Boylan & Goldman, 2010; Han et al., 2017; Kerker et al., 2023; Sena Moore, 2015; Timmons et al., 2021; Williams, 2018).

Implications

Based on the positive results with behavioral concerns, music therapy could be used to support a reduction in maladaptive behaviors in preschool-age children. Additionally, positive emotional regulation skills increased on average in this study, implicating that music therapy

could be used to support these skills, which include self-regulation, self-control, attention, and social-emotional skills. This research focused on using a whole class format rather than a small group. The participants in this study were seen as a whole class and saw improvement in emotional regulation skills, suggesting that music therapy could be provided in a whole class format to address these skills. This study focused on shifting arousal levels to develop emotional regulation skills. Due to the positive results seen in this study on emotional regulation skills, it is suggested that other professionals adjust their thinking to consider arousal level when addressing emotional regulation skills in preschool-age children.

Limitations

The study was limited by its use of convenience sampling due to the time constraints of the researcher's master's thesis. Additionally, having a low population made it difficult to generalize the results of this study. The matched groups were created using predetermined groups based on already existing classrooms. The classrooms were matched based on age, but other demographical factors may have influenced the development achieved in participants within each group. All participants were male, so it is difficult to generalize the results to female children. The research did not collect demographic information regarding whether any students had Individualized Family Service Plans (ISFPs) or behavior plans. This may have impacted the results if any participants were identified with these plans. Two participants in group B were observed with signs of neurodivergence, which may have impacted the results seen in group B.

Due to the delay from participant recruitment in the second classroom, the study timeline for the study was reduced, and the 16-week total period did not occur in the same timeframe for each classroom. Due to the second classroom beginning their 16-week period for the study later in the school year, the reliability of the results may have been reduced because children are

continuing to develop these skills as they attend preschool. So, it becomes more difficult to distinguish whether the music therapy is promoting these changes or whether it is a natural part of their growth and development.

Additionally, the delay in receiving consent from the second group, adjusted the original length of the music therapy program from ten weeks to eight weeks. This may have impacted the results seen due to an interruption in the group process. In previous work, the researcher has noticed that children reach the working stage around week five in a group. With a length of ten weeks, this allows for about three weeks of time in the working stage to engage in cognitive restructuring and practicing the skills before transitioning to the consolidation and termination stage in the last two weeks (Corey, 2023). However, due to the change in length of the music therapy program, the group may have had less time in the working and termination stages, which could have impacted the development of emotional regulation skills observed in the timeline of this study.

Another limitation was that the researcher did not determine whether students might have experienced other programs or therapies that would have an impact on social-emotional development during the course of the study. The researcher was aware of one participant in group B who participated in small group music therapy during the school-year, which coincided with part of the time period of the research.

In each group, there was a different teacher completing the assessment of the children. The researcher did not assess inter-rater reliability prior to the commencement of the study. Each group was assessed by the same teacher for the corresponding classroom, which maintains reliability within the data collected for each group. The researcher provided training on the data-collection forms with the hopes to promote inter-rater reliability for this study.

The research instrument was created by the researcher by combining aspects of different assessment forms. As such, this assessment instrument as it was compiled was not specifically tested for reliability and validity prior to use in this study. Two sections of the instrument (self-regulation skills and behavioral concerns) were taken from the DECA, which has an internal-reliability/consistency coefficient of (0.95) for the protective factors and (0.86) for behavioral concerns with teacher raters, test-retest reliability of (0.95) for protective factors and (0.8) for behavioral concerns with teacher raters, and interrater reliability of (0.72) for protective factors and (0.70) for behavioral concerns with teacher raters, as well as a high validity based on research (LeBuffe & Naglieri, 2012). The DECA was standardized using a US population of 3,553 children three to five years of age (LeBuffe & Naglieri, 2012). The social-emotional skills and attention and self-control skills sections of the assessment used a combination of the SEAM and questions that were created by the researcher to look at the qualitative strengths and areas of need in preschool age children. Because these sections are not traditionally analyzed for quantitative data and have not been tested for quantitative reliability and validity, the analysis of the results from these sections is limited.

Future Research

Future research is needed to examine the effects of music therapy on preschool children and development of social-emotional skills. There is little research in children of this age in general within music therapy, especially regarding social-emotional skills. This research focused specifically on emotional-regulation within the overarching social-emotional skills domain. This research has shown a decrease in behavioral concerns with music therapy intervention, but it is not statistically relevant due to low sample size. Further music therapy research with preschool children focused on shifting arousal levels of music experiences with a larger population should

be done with a focus on effects of reducing behavioral concerns and self-regulation skills with a larger sample size to reduce errors and increase likelihood of statistical significance.

Since some emotional regulation skills were noticed to develop longer over time, future research could include an additional observation period following music therapy to determine if the skills progress, regress, and progress again over time, as seen in previous research (Bentley et al., 2021; Ross, 2016). Additionally, future research could include the original length of the music therapy program considered for this program of ten weeks. This may allow for a longer working stage for group process before termination and consolidation as recommended by Corey (2023).

Sections of the DECA that were used during this study produced more consistent results across participants with lower standard deviation across scores than the SEAM. These scores also include *t*-score and percentile markers to understand the scores across a larger population. Internal validity and reliability scores are also high for this tool using quantitative reports. Future research should consider this when determining the research instrument. The SEAM instrument is recommended for qualitative data collection. Future research could include the use of the SEAM in a qualitative format instead of quantitative data used in this study. A mixed-methods study could be completed where teachers report qualitative data, including concerns and focus areas using the SEAM, using recorded music therapy sessions.

Older children in this study were observed with lower scores in positive emotional regulation skills following music therapy. As researcher have recommended learning skills at an earlier age, future research could focus on age as a factor in emotional regulation development to determine the prime age at which to develop these skills in early childhood (Bentley et al., 2022; Boylan & Goldman, 2010; Han et al., 2017; Kerker et al., 2023; Sena Moore, 2015; Timmons et al., 2021;

Williams, 2018). The children in this study were three to four years in age. The study took place during the winter and spring of 2024. Therefore, all participants were born following the initial COVID-19 shutdown in 2020. As a result, these children may be too young to experience the effects of COVID-19 on their self-regulation skills, while the older children may have had more effect on their social-emotional development. However, the researcher has experienced a higher number of preschool-age children who have difficulty with attachment skills. Children that are three to four years of age as of 2024 would have been born during the shutdown period of 2020-2021. Their initial year of life would have included staying at home with their caregivers longer than might have occurred without a government lockdown. Future research may need to address the potential impact COVID-19 had on attachment for preschool children. The DECA has four areas of assessment, including self-regulation, initiative, attachment, and behavioral concerns. The use of the DECA in its entirety may be helpful in future research involving music therapy on social-emotional skills in preschool-age children.

With the knowledge that the social-emotional development of older children was impacted by COVID-19, future research should also study the effects of music therapy on their social-emotional skill development. Children impacted by COVID-19 during the initial lockdown during 2020-2021 will continue to progress through school, and unless intervention is provided to address the effects on their social-emotional development, they may continue to struggle with academic and emotional skills throughout their lives into adulthood (Davies et al., 2021; Jiao et al. 2020; Paulauskaite et al., 2021; Spiteri, 2021; Takahashi and Honda, 2021; Timmons et al., 2021). Future research should focus on understanding the role of music therapy throughout a child's schooling to help develop resiliency and social-emotional skills that impact their school readiness and mental health. The focus on arousal levels in this study showed

positive results, suggesting it may be helpful for music therapy or other creative arts therapies to consider the concept of arousal level in their work with emotional regulation development.

Conclusion

Following the COVID-19 pandemic, children experienced delays in social-emotional development, including emotion regulation skills (Davies et al., 2021; Jiao et al. 2020; Paulauskaite et al., 2021; Spiteri, 2021; Takahashi and Honda, 2021; Timmons et al., 2021). This study examined the relationship between an 8-week whole class music therapy program and emotion regulation development in preschool-age children following the COVID-19 pandemic. The research compared results of emotion regulation skills over the course of eight weeks with music therapy intervention and without treatment. Behavioral concerns were reduced in a majority of participants with music therapy intervention. Self-regulation skills increased in half of participants with music therapy intervention. Social-emotional and attention and self-control skills increased on average for all participants with music therapy intervention, but the average scores were greatest during non-treatment period. While this research showed potential for improvement in emotion regulation skills using music therapy intervention, future research is needed with a larger sample population to understand significance. Furthermore, delays in emotion regulation following COVID-19 may be reducing as children may be too young to experience effects. Other areas of social-emotional development in preschool-age children may be affected following COVID-19 that could be researched, such as attachment.

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Appendix A

To the parent/guardian:

I am Kelsey Oldland, and I am a student at Slippery Rock University aspiring to complete my thesis for the Master of Music Therapy program. I plan to conduct research on early childhood emotion regulation development following the COVID-19 pandemic and the effects of music therapy programming on achieving developmental markers. I hope to assess the use of a short-term music therapy program to compare the effects on preschool-age emotion regulation development with those who do not experience music therapy for the same period of time.

Prior to engaging in the music therapy program, children will be observed by their teacher to complete an assessment of their current emotion regulation skills compared to standard developmental markers. Children will be participating in music therapy sessions as a part of their school program. They will be encouraged to be active in singing, movement, and instrument play activities lead by a licensed music therapist. Following the end of the music therapy program, children will be observed by their teacher to complete the same assessment of developmental milestones. This will help to determine the effectiveness of music therapy on a preschool age child's emotion regulation development.

All data collected on your child's developmental markers will be kept on a password protected computer. Additionally, the data will be de-identified to maintain your child's confidentiality, and the identifying information will be deleted and destroyed. Only the researcher and your child's teacher will have access to this data. Your child's teacher will inform you if there are concerns regarding your child's development.

The results of this study could help inform future music therapists working with preschool age children. This thesis may also be published in an academic journal or presented at professional conferences. If you and your child agree to participate, I will provide a parent consent form and child assent form to read over and sign.

Please understand that there is no pressure to participate in this study. You and your child have the right to join and later change your mind. Choosing not to participate will not negatively affect your child's education or interaction with peers at their school or daycare.

Please respond by a phone call or email if you are interested in your child participating in this research study.

Sincerely,

Kelsey Oldland, LPMT, MT-BC
(302)-519-9652
klo1012@sru.edu

Appendix B



Professor Susan Hadley, PhD, MT-BC
Music Therapy Program Director
Graduate Music Therapy Program Coordinator

Swope Music Building
 101 Central Loop, Suite 225
 Slippery Rock, PA 16057-1326
 Phone: 724.738.2446
 Fax: 724.738.4469
 Email: susan.hadley@sru.edu

College of Liberal Arts

- Art
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- Criminology and Criminal Justice
- Dance
- English
- History
- Homeland and Corporate Security Studies
- Interdisciplinary Programs
- Modern Languages and Cultures
- Music
- Philanthropy, Nonprofit Leadership, and Public Affairs
- Philosophy
- Political Science
- Theatre
- Programs
- Asian Studies
- Gender Studies
- OSH Public Humanities
- Writing Center

Approved
11/13/2023
Slippery Rock University
Institutional Review Board

PARENT/GUARDIAN CONSENT TO PARTICIPATE IN RESEARCH

The Impact of a Short-Term Music Therapy Program on Emotional Regulation Development in Preschool Age Children Following the COVID-19 Pandemic

Susan Hadley, Ph.D, MT-BC; susan.hadley@sru.edu; (724) 738-2446
 Kelsey Oldland, MT-BC; klo1012@sru.edu; (302)-519-9652

Invitation to be Part of a Research Study

Your child is being invited to participate in a research study. In order for your child to participate, they must be 3-4 years of age, English-speaking, and currently attend a public-school prekindergarten program for at least 2 weeks. Taking part in this research project is completely voluntary.

Important Information about the Research Study

Things you should know:

- The purpose of the study is to understand the effect of a short-term music therapy program on emotion regulation development in preschool-age children. If you choose to allow your child to participate, they will be asked to interact in music therapy sessions—which will include the use of instrument play, movement, and singing—held in their preschool classroom at their school as a part of their programming and observation of emotion regulation skills by their teacher. This will take approximately 20 weeks receiving music therapy and 10 weeks of no music therapy.
- While we try to avoid risks or discomfort for your child, there is a minimal risk of coercion to participate in the study and a minimal risk of breach of confidentiality.
- The study may involve social and emotional benefits in reaching developmental markers.
- Taking part in this research project is voluntary. Your child doesn't have to participate, and they can stop at any time.
- There is no cost to participate in this study.

Please take time to read this entire form and ask questions before deciding whether to allow your child to take part in this research project.

Initials _____ * Every page must be initialed by research participant

What is the Study About and Why Are We Doing it?

The purpose of the study is to examine the relationship of music therapy programming and emotional regulation development in preschool-age children following the COVID-19 pandemic in a classroom setting. The music therapy program will be a repetitive structure focusing on emotional regulation skills for the duration of 10 weeks. There will also be 10 weeks of observation of emotion development skills without the music therapy program. The children receiving the program will be 3-4 years in age and enrolled in a preschool classroom within a public school for at least 2 weeks. This study aims to identify whether there is an impact of a short-term music therapy program on early childhood emotional development. This could inform the future use of music therapy programs within early childhood education.

What Will Happen if Your Child Takes Part in This Study?

If you agree to allow your child to take part in this study, they will be asked to attend sessions held in their classroom and participate in singing, movement, and instrument play activities that are linked to age-appropriate emotion regulation goals. We expect this to take about 10 weekly music therapy sessions and 10 weeks of typical classroom learning without music therapy. The music therapy sessions will last 30 minutes and occur weekly in your child's classroom. Your child's teacher will complete emotional development scales to measure the effects of the music therapy program. Your child will not be removed from the class or pulled aside by the teacher to complete these scales. The scales will report the teacher's observation of how frequently your child has performed a behavior in the two previous weeks. The data collected from these developmental scales will be de-identified and input into a spreadsheet which will be kept in a password protected external hard drive that will be stored separately from the list that has their name linked to their participant code. We may learn information about your child's development as part of the research. We will share this information, if requested, with you to understand how your child compares to developmental markers for their age and if there are any concerns you may not be aware of previously.

How Could Your Child Benefit From This Study?

Your child might benefit in emotional regulation development from being in this study. Previous music therapy research has shown possible increase of emotional regulation in older children. Information from this study will benefit others participating in music therapy because the information will pertain to use with preschool age children and possible associated benefits from its use.

What Risks Might Result From Being in This Study?

There is a risk of coercion your child might experience from being in this study. This risk will be reduced by informing your child they may choose not to participate or change their mind later and decide not to participate or to stop participating if they want to. Your child will be reminded that they can say they do not want to participate, and it will not upset me or their teacher. Also, your child will be made aware that their experience in the classroom and interactions with their peers will not be impacted if they choose not to participate, and that they can still be involved in music sessions.

There is a minimal risk of breach of confidentiality. Your child will be assigned a randomly generated numerical code that will be used on the observation forms. This numerical code is assigned as a way to de-identify the data collected on your child. The de-identified data will be entered into a spreadsheet and

Initials _____ * Every page must be initialed by research participant

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stored on a password protected external hard drive. The list containing the participant numerical codes will be kept separate in a locked file cabinet.

How Will We Protect Your Child's Information?

We plan to publish the results of this study. To protect your child's privacy, we will not include any information that could directly identify your child. We will protect the anonymity of your child's research records by not connecting identifying information with the data during storage and reporting of the results. Your child's name and any other information that can directly identify your child will be stored separately from the data collected as part of the project.

What Will Happen to the Information We Collect About Your Child After the Study is Over?

We will not keep your child's research data to use for future research or other purposes. Your child's name and other information that can directly identify your child will be kept secure and stored separately from the research data collected as part of the project. Three months after completion of the data collection, we will destroy any documentation linking your child's name to their emotion regulation assessment forms.

What Other Choices does Your Child Have if They Don't Take Part in this Study?

If you choose to not permit your child to participate, they can still participate in the music therapy sessions.

Your Child's Participation in this Research is Voluntary

It is totally up to you and your child to decide to be in this research study. Participating in this study is voluntary. Even if you or your child decide to be part of the study now, you both may change your mind and stop at any time. If your child decides to withdraw before this study is completed, the data collected for them will be destroyed and not included in the study.

Contact Information for the Study Team and Questions about the Research

If you have questions about this research, you may contact **Susan Hadley** at susan.hadley@sru.edu or **Kelsey Oldland** at klo1012@sru.edu. We are happy to answer any questions regarding the study, including rationale and background, procedures, and implications.

Contact Information for Questions about Your Rights as a Research Participant

If you have questions about your rights as a research participant, or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the following:

Institutional Review Board
Slippery Rock University
104 Maltby, Suite 008
Slippery Rock, PA 16057
Phone: (724)738-4846
Email: irb@sru.edu

Initials _____ * Every page must be initialed by research participant

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Initials _____ * Every page must be initialed by research participant
p. 4 of 4

Your Consent

By signing this document, you are agreeing to allow your child to be in this study. Make sure you understand what the study is about before you sign. We will give you a copy of this document for your records. We will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read this consent form and I understand what is being requested of my child as a participant in this study. I freely consent for my child to participate. I have been given satisfactory answers to my questions. The investigator provided me with a copy of this form. I certify that I am at least 18 years of age.

Name of Child (Printed)

Printed Parent/Guardian Name

Signature of Parent/Guardian

Date

By signing below, I indicate that the parent/guardian has read and, to the best of my knowledge, understands the details contained in this document and have been given a copy.

Investigator's Printed Name

Investigator's Signature

Date

Initials _____ * Every page must be initialed by research participant

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Appendix C



Professor Susan Hadley, PhD, MT-BC
Music Therapy Program Director
Graduate Music Therapy Program Coordinator

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 Political Science
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 Asian Studies
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 Writing Center

CHILD ASSENT TO PARTICIPATE IN RESEARCH

The Impact of a Short-Term Music Therapy Program on Emotional Regulation Development in Preschool Age Children Following the COVID-19 Pandemic

Susan Hadley, Ph.D, MT-BC; susan.hadley@sru.edu; (724) 738-2446
 Kelsey Oldland, MT-BC; klo1012@sru.edu; (302)-519-9652

We want to tell you about a research project we are doing and see if you want to do it. Research is something we do to learn more about something we want to know.

This research project is about how music therapy can help young children cope with their emotions or feelings when they feel like those emotions are becoming big and hard to control.

The people who want to learn more about this are me and my teacher, Dr. Hadley.

It is okay to ask questions about what I am talking about. You can stop me to ask a question when you do not know what I'm saying. You can ask a question now or later on if you have one. And you can ask your parents about it too because I have let them know about it as well.

We want to find out how music therapy can help children in preschool learn about big feelings and what they can do when they have them. This can teach us how to help other preschool children better.

You are being asked to do this project because you are 3 or 4 years old and come to preschool.

Both you and your [insert appropriate caregiver(s)] have to say it's okay for you to do this project. It is your [insert appropriate caregiver(s)] job to make sure being in this project is safe for you. But you still get to choose if you *want* to do it. You can say "no" even your [insert appropriate caregiver(s)] says "yes."

Parents and children say "no" for different reasons. But it is your choice. We will not be mad if you say "no." You will still get to have fun in school and do music therapy if you say "no."

If you decide you want to do this project and your [insert appropriate caregiver(s)] says “yes,” you will:

- Play instruments, sing songs, and dance or move to music during your class time.
- Your teacher will watch you to see what you do when you have a big feeling.
- You will have music therapy time for 10 weeks.

This project could help you:

- Focus better in class when the teacher is talking
- Follow directions more
- Tell me how you are feeling
- Feel good about helping other kids

This project might help you, but we do not know for sure. Also, we could learn something that will help other kids someday.


There are some things that you might be worried about:

- Some kids feel like they have to say they want to do this project
- Some kids are scared that their teacher or I will be mad if they say “no”
- Some kids are worried that other people might see what their teacher writes about them

We will do our best to make sure you feel safe, and you can tell us if you are not. You can stop at any time if you want.

You do not have to do this project if you do not want to. Nobody will be mad at you if you do not want to do the project. You can say okay now, and you can change your mind later. You can tell your [insert appropriate caregiver(s)], your teacher, or me if you want to stop. You will still get to have music therapy time if you say “no.” We will keep the papers your teacher writes on in a safe place so other people cannot read them. Only your teacher and my teacher and I will see what they write.

Signature:
Someone has read this paper to me. I asked a question if I did not know something. I can always ask a question about the project if I have one. I will be given a copy of this paper.
Please color in the smile if you want to do the project or the frown if you do not:



shutterstock.com - 1575867320

Child's Name (print legal name): _____

Date of signature: _____

The following should be completed by the Principal Investigator conducting the assent process if the child agrees to be in the study. Check all that apply.

- The child is not capable of reading the assent form, but the information was verbally explained to him/her. The child colored the smile or frown above as documentation of assent to take part in this study.
- The child had ample opportunity to have his or her questions answered.

Printed name of Principal Investigator: _____

Signature of Principal Investigator: _____

Date of signature: _____

Appendix D

Hello, Hello

Kelsey Oldland, LPMT, MT-BC

$\text{♩} = 120$

Hel - lo, Hel - lo Hel - lo, Hel - lo

5 Hel - lo, Hel - lo It's mus - ic time.

Move and Stop

Key of F major – first note F (do)

Traditional (adapted)

Oh, you clap and you clap and you clap and you STOP. And you

clap and you clap and you clap and you STOP! And you clap and you clap and you

clap and you STOP! And you clap and you clap and you STOP.

L - I - G - H - T

David Kisor

D
G
D
A

Voice

L - I - G - H - T I've got a light in - side of me.

D
G
D
A
D

L - I - G - H - T I've got a light in - side of me.

G
D
Em
G
A

I can see all life brings. My light shines through ev - 'ry - thing.

D
G
D
D
A

L - I - G - H - T I've got a light in - side of me.

D
G
D
A
D

L - I - G - H - T I've got a light in - side of me.

Lullaby Song

Niki Runge, MCAT, LPMT, MT-BC

D
A
D

La la lu - lla - by La la lu - lla - by Sing sing sing my song

7

A
D
A

ah la la lu - lla - by (1) (2) (3) get up and dance get up and dance get up and

12

D
G

dance dance dance to the mu - sic get up and dance dance dance to the

15

D
A
D

sound and now it's time to lay back down.

Appendix E

Preschool Assessment for Emotional Self- Regulation Development

Participant ID: _____ **Age:** _____ **months**

Group Code: _____ **Administration Date:** _____

Initial Assessment **2nd Assessment** **Final Assessment**

The child...	0-Not True	1-Rarely	2-Occasionally	3-Frequently	4-Very Frequently
Can listen to or respect others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can control his/her anger.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shows patience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shares with other children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Handles frustration well.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accepts another choice when his/her first choice was not available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cooperates with others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can calm himself/herself down.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plays well with others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Self-Regulation: ____	_____	_____	_____	_____	_____
Smiles and laughs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expresses a range of emotions using a variety of strategies.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Describes emotions of others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identifies own emotions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can calm self after periods of exciting activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Responds to peer's or caregiver's soothing when upset.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can calm self when upset within 5 minutes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remains calm in disappointing situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Responds appropriately to others' emotional responses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tries to comfort others when upset.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Social-Emotional: ____	_____	_____	_____	_____	_____

Focuses on or joins activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Greets adults and peers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cooperates in play or when completing a task.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participates appropriately in group activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regulates his/her activity level to match setting.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child participates in early literacy activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stays with motor activity for 10 minutes or longer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moves from one activity to another without problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participates in games with others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Follows routines and rules.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does what he/she is asked to do.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Responds appropriately when corrected by adults.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is restless and can't sit still.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can pay attention for a long time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can wait for his/her turn.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can sit with group for the duration of an activity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Attention and Self Control: _____	_____	_____	_____	_____	_____
Seems sad unemotional at a happy occasion.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a temper tantrum.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seems uninterested in other children or adults.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uses obscene gestures or offensive language.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Destroys or damages property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a short attention span (difficulty concentrating).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fights with other children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Becomes upset or cries easily.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurts others with actions or words.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gets easily distracted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Touch other children or adults in a way that you thought was inappropriate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Total Behavioral Concerns: _____	_____	_____	_____	_____	_____