Perspectives on Early Childhood Psychology and Education

Volume 5 | Issue 1 Article 10

January 2023

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Melissa Bray

Emily Winter

Aarti P. Bellara

Johanna deLeyer-Tiarks

Jessica Dirsmith

See next page for additional authors

Recommended Citation
Bray, Melissa; Winter, Emily; Bellara, Aarti P.; deLeyer-Tiarks, Johanna; Dirsmith, Jessica; Bray, Adeline; and Aravala, Sai (2023) "Mind Body Health Interventions in Preschoolers," *Perspectives on Early Childhood Psychology and Education*: Vol. 5: Iss. 1, Article 10.
DOI: https://doi.org/10.58948/2834-8257.1049
Available at: https://digitalcommons.pace.edu/perspectives/vol5/iss1/10

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Authors

Melissa Bray, Emily Winter, Aarti P. Bellara, Johanna deLeyer-Tiarks, Jessica Dirsmith, Adeline Bray, and Sai Aravala

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Abstract

There are myriad of mind body health (MBH) interventions that are effective for the preschool population. Supports may include, yet are not limited to, journal expression, yoga, music therapy, mindfulness, video self-modeling, and muscle relaxation. These particular interventions have resulted in positive changes for preschoolers with anxiety, depression, stress, and attention, as well as various physical conditions. Benefits of these MBH interventions include being effective with respect to teacher time, economically feasible, and are well-received by parents, teachers, and preschoolers.

Keywords: *Physical Health, Mental Health, Interventions, Children, Preschool*

Introduction

Mind body health interventions, including positive psychological interventions, are increasingly being applied in school settings to sustain and improve health and well-being in children and adolescents (Campion & Rocco, 2009; Froh et al., 2008; Huppert & Johnson, 2010). While large amounts of present research have centered on school-aged populations, several researchers are beginning to study the impact of mind body health interventions in preschoolers (e.g. Cohen et al., 2018; Flook et al., 2015). This piece provides an overview of the literature on mind body health interventions in preschool populations, including: mindfulness, yoga, relaxation and progressive muscle relaxation (PMR), expressive arts, physical activity, music, gratitude writing, bibliotherapy, and video self-modeling. Following the scientist-practitioner model, school psychologists are well-equipped to implement research-based mind body health interventions for preschool populations. They are also ideally suited to provide educators with the research and professional development needed to assist in intervention planning, implementation, and service delivery.

What is Mind Body Health?

Mind body health may be applied to all age groups, including preschool. The techniques derived from the conceptualization of mind body health are rooted in psychology, education, and the health sciences. Individuals of all ages benefit from a holistic framework using interdisciplinary collaboration to effect change and preschoolers are no exception. The developing psyche evidences aspects of positive psychology such as feelings of gratitude and acceptance. The mind interacts with the physical body producing various psychological and physical outcomes. This is evident in preschoolers with somatic complaints, heightened visits to school nurses, bathrooms, absenteeism, and tardiness (Berk, 2012).

To impact change with the preschool population, techniques derived from the mind body health paradigm include such interventions as yoga (Kim et al., 2016), relaxation and guided imagery (Kohen & Wynne, 1997), mindfulness (Zelazo & Lyons, 2012), video self-modeling (Buggey et al., 2011; Buggey, 2012; Buggey et al., 2018; Lemmon & Green, 2015), and meditation (Campion & Rocco, 2009). These are all easily implemented in the preschool setting, are economically feasible, and enjoyable for preschoolers and their teachers alike. These treatments are gaining in popularity and effectiveness in terms of supporting experimental data mounting (Inagaki & Hatano, 1993).

Interventions

Mindfulness

Research on mindfulness, which encompasses the practice of focusing intently on processes in the moment using intention, attention, and attitude, has gained recent traction in popular culture and in the present state of the academic literature (Shapiro et al., 2006; Zelazo & Lyons, 2011). Much research has demonstrated the positive impact that mindfulness may have on adults in various realms of functioning, such as enhancing self-regulatory abilities, decreasing medical symptoms, and reducing symptoms of stress, amongst a variety of other mind body health benefits (Baer, 2003; Grossman et al., 2004)

When considering the role of mindfulness specifically for preschool aged populations, research is not as robust as it is for adults; thus, there is a deficiency in findings for this age group (Flook et al., 2015). However, some research has demonstrated promising preliminary findings (Zelazo & Lyons, 2012). Recent findings from Flook and colleagues (2015) examined a kindness curriculum intervention in a preschool classroom. The curriculum, which encompassed mindfulness as the core underlying principle of the multi-dimensional program, aims to teach prosocial skills to preschool children. Preschool students in the intervention demonstrated increases on measures of social competence as well as had higher grades on report cards for daily skills such as ability to learn, overall health, as well as social-emotional skills. In contrast, the control group demonstrated

an increase in selfish behaviors (e.g., lack of sharing). Students also demonstrated growth in executive functioning skills as measured by inhibitory control and cognitive flexibility. Overall, moderate effects were noted for students in the intervention, who had lower baseline levels of executive functioning as well as social ability. This improvement demonstrates the students' growth in such domains after completing the intervention, as compared to students in the control.

Researchers Lim and Qu (2017) noted that after one brief mindfulness intervention (a mere 15-minutes in length), their research identified enhanced attention in children's. Further, the authors noted that mindfulness practices may espouse the potential to "de-automatize habitual responses." Such deautomatization looked at preschooler's abilities to control impulses and disengage responses that are habitual, instead examining their abilities to access appropriate responses, oversee attention, as well as self-regulate their behaviors (Lim & Qu, 2017, p. 308). Additional research examining interventions for mindful eating children from preschool through early elementary grades, indicated that students who participated in mindful eating increased their food consumption, particularly for foods that the child did not generally prefer (Hong et al., 2018). However, enjoyment ratings for such foods did not differ from the controls (Hong et al., 2018).

Overall, literature for MBH interventions looks promising, and showcases the need for additional focused research for the preschool population (Zelazo & Lyons, 2012). More research is needed to create developmentally appropriate and empirically based interventions targeted for preschool aged students.

Yoga

Preschool children have benefited from yoga in the areas of physical development, academic achievement, and social emotional and cognitive functioning (Cohen et al., 2018; Wolff & Stapp, 2019). Social emotional improvements have been shown for anxiety, stress,

self-regulation, attention, and cognitive relative to executive functioning (Cohen et al., 2018; Razza et al., 2015; Wolff & Stapp, 2019). Physical outcomes have included improvements in heart rate variability (Cohen et al., 2018), fine motor skills (Mische Lawson et al., 2012), metabolism, nervous system, circulation, and lung functioning (Maykel et al., 2017).

There are many variations of yoga that have been effective with academic, social and physical health functioning in preschoolers. However, Hatha-Yoga has been adapted for use with preschoolers and has been highly successful for physical and mental health improvements (Ivko, 2015). Hatha-yoga has also been beneficial for cognitive skills, hyperactivity, attention, and visual-motor coordination (Jarraya et al., 2019).

Particular populations such as preschoolers who come from families who have immigrated or who are refugees have successfully used yoga as an intervention to remediate traumatic experiences and improve school readiness. Syrian caregivers living in Turkey used yoga and storytelling for these purposes (Goodman & Dent, 2019).

Overall, yoga is a time efficient and economically feasible intervention promoting cognitive, academic, social, and physical health in preschoolers. It is also a treatment that school personnel find non-intrusive and easy to implement (Wolff & Stapp, 2019).

Relaxation/Progressive Muscle Relaxation

Progressive Muscle Relaxation (PMR) has successfully been used with preschool students to promote academic, social/behavioral, and physical health functioning. Diaphragmatic breathing exercises in particular, have improved lung functioning as well as enhanced attention to educational tasks (Kohen & Wynee, 1997). Diaphragmatic breathing incorporates breath control and focuses on isolating certain muscle groups to promote deep belly breathing (Prem, 2013). One study examining an intervention teaching preschool children with asthma to blow air in a balloon using diaphragmatic breathing noted significant changes in lung functioning, demonstrating improve-

ments pre and post intervention (Sumartini et al., 2020). Results also found that use of diaphragmatic breathing decreased hyperactivity, increased psychological awareness responses, and lung functioning improved relative to relaxation exercises (Efimenko, 2013).

Further, research examining seven relaxation sessions to 25 preschool aged children with asthma (ages 2-5) and their parents suggested improvement across a variety of measures. Further, data collected before participation, and one year after completion of the program, suggested a statistically significant difference in physician visits and breathing symptom severity scores. In addition, parents reported increased confidence in self-management skills as related to their child's medical condition (Kohen & Wynne, 1997). Although, it is important to mention that research in this area suggests that when working with young children, parents may need support in delivering these interventions at home (Kohen, 2013).

Expressive Arts

Integrating creative arts into the preschool curriculum has been a controversial issue in education (Vars, 2001); however, some research shows it to be successful in help treat preschool students with emotional trauma (Davis, 2010; Ju, 2017) and to support the overall mental health of these youngsters (Beauregard, 2014). A review of 19 different articles corresponding to eight different intervention programs yielded mixed results with regard to the effects of classroom-based creative expression interventions on children's mental health (Beauregard, 2014). Some results indicated that these interventions yielded positive effects with regard to constructs such as hope, coping and resilience, prosocial behaviors, self-esteem, impairment, and emotional and behavioral problems; while other studies indicated there were no effects, suggesting that differences in treatment intervention and fidelity and overall effectiveness are key factors to consider (Beauregard, 2014).

Expressive arts have been used to help preschool children and their families transition back to school after experiencing traumatic

natural disasters (Davis, 2010) and to support preschool children with emotional trauma and selective mutism facing life adjustments (Ju, 2017). Both of these studies suggested positive outcomes with regard to preschool children's well-being after intervention. For example, Ju, (2017) measured preschool students' behavior and emotions using the Behavioral and Emotional Rating Scale (BERS) prior to and after immersion in expressive arts therapy and found post-test results indicating an overall improvement in behavioral performance and emotional adaptation, with an almost immediate effect.

While there is some evidence supporting the positive impact of integrating creative arts into the curriculum, the likelihood that the system can be successful without the support of teachers is slim. Teacher support specifically refers to the teachers themselves believing in the benefits of this integration (Öztürk & Erden, 2011). Previous research has found that most preschool teachers' beliefs about art activities were essential to curriculum (Alvino, 2000), but simply finding this important is insufficient for implementation (Baker, 1994; Bresler, 1993; Seefeldt, 1995; Thompson, 1995). In a recent study on teachers' beliefs about arts education and consequential integration with preschool curriculum, the majority of teachers' believed arts was an important part of early childhood education; however, few teachers reported their ability to integrate arts education across content areas, suggesting that training of early childhood educators lacked a focus on integrating creative arts in the curriculum (Öztürk & Erden, 2011).

Physical Activity

Physical activity is known to promote mental and physical well-being in individuals of all ages. It is recommended that physical activities should be implemented for children at a young age to ensure that play becomes a foundation to one component of life-long healthy living (Dwyer et al., 2009). Activities, whether they be sedimentary or physical, in preschoolers play a role in the biomedical outcomes for example weight, bone health and risks associated with

cardiovascular disease, as well as psychological outcomes pertaining to mental health (Hinkley et al., 2014). As per the Department of Health and Aging (DOHA), children are expected to undergo at least three hours of physical activity a day once they are able to walk (Hinkley et al., 2014).

Physical activity helps children practice healthy lifestyles, addressing mind body health. It is key to recognize that environment plays a role in the evaluation of the effects of physical activity in the child's quality of mind-body health. A study conducted in 2016 examined the effects of physical activity in an outdoor nature setting or "green space" alongside psychological and physical outcomes (Ward et al., 2016). Results of the study indicated that not only was physical activity positively related to performance in an open environment, but both aspects resulted in greater emotional wellbeing (Ward et al., 2016). This suggests that "green space" is an aspect that, when paired with physical activity, induces greater mental health in children.

Gratitude

In consideration of the history of positive psychology research, gratitude has sparked sizable, and recent, attention amongst those in the general public (Emmons & Shelton, 2002). Yet, according to Emmons and Shelton (2002), the emotion of gratitude has received little research attention in the field. For that which does exist, research examining the effects of practicing gratitude amongst adults shows favorable outcomes for well-being and overall health status (Elosúa, 2015). Adults, for instance, who practiced gratitude more regularly experienced positive emotional feelings, reported more life satisfaction, as well as had decreased emotional experiences of sadness, envy, and worry (Elosúa, 2015). With respect to social behaviors, simply expressing gratitude may increase prosocial behaviors, further increasing a person's feelings of social validation and connection (Grant & Gino, 2010). Although evidence exists examining the relationship between gratitude and physical health for adults and

adolescents, studies that exclusively examine the effects of gratitude on preschool students and children are far less frequent. Thus, little is known about the effects of practicing gratitude with younger children based on the current stance of the literature.

In a quest to break the silence on this subject area, Nelson and colleagues (2013) sought to understand exactly how much children understand the concept of gratitude. Previous research suggested that at approximately age seven, children are fully able to conceptualize and grasp the concept, emotion, and feeling of gratitude (Froh et al., 2011). However, Nelson and colleagues (2013) suggest that an understanding of gratitude may occur earlier, around age five. In their study, children ages five and above were able to develop a cursory conceptualization of the feeling of gratitude. Further, when presented with vignettes, children were able to identify both gratitude as a positive emotion, as well as assign positive feelings from that display of gratitude directly related to the benefactor. Nelson (2013) also noted that a student's success with identifying gratitude at age five was best predicted by their emotional knowledge at age three as well as comprehension of others and their emotions at ages three and four. Thus, Nelson's (2013) findings suggest that gratitude may be experienced in children much younger than was once proposed, starting at age five with the ability to identify the emotion as positive and apply those feelings to the benefactor.

Studies exclusively examining gratitude are less common, however studies incorporating gratitude as one component of the intervention showcase the potential array of benefits that may accompany using gratitude to support preschool aged students. For example, in an intervention for preschool students featuring a kindness curriculum intervention, benefits of practicing gratitude were associated with simply participation in the program. Further, those who enrolled in the curriculum exhibited higher social competence, academic achievement, social-emotional skill development, as well as overall physical health when compared to control groups who did not participate in the intervention (Flook et al., 2015).

A two-year study examining mindfulness-based programming for preschool students incorporating lessons on gratitude, results suggested increased executive functioning abilities (working memory and planning/organizing), as well as improved academic performance (vocabulary and reading scores), which emerged during the kindergarten years (Thierry et al., 2016). In sum, cursory evidence suggests the positive impact that incorporating gratitude may have on children's mind body health; however, more research is needed to strictly isolate the effects of gratitude exclusively.

Music

Music education, and exposure to musical instruments, is often part of a young child's school experience. Knowing such, might there be mind body health benefits to engaging in a therapeutic and mindful process of creating and playing music? Although music is somewhat ubiquitous in the classroom of a preschool student, the evidence on the effectiveness of such use is somewhat contradictory and limited. For example, one study assessing preschooler's enrichment of spatial-temporal reasoning found that exposure to musical experiences in preschool helped create "long-term modifications underlying neural circuitry in regions not primarily concerned with music" (Rauscher et al., 1997, p. 7). However, Mehr and colleagues (2013) suggest interpreting such results with caution, particularly as they relate to the cognitive benefits of music with preschool students.

When looking at music from an ecological approach, Klein and Winkelstein (1996), discuss the importance of music in the healing process for children. When working in high intensity health related situations with children, Klein and Winkelstein (1996) report evidence that music can help children cope, withstand pain, and endure difficult tasks, such as physical and occupational therapy. Additional research suggests that music may help preschoolers and toddlers fall asleep faster as compared to a control group not exposed to music during nap time (Field, 1999). Further connections have been noted between using musical objects in play interactions with peers, and that for students who have developmental disabilities, using a musical instrument may help facilitate sustained attention towards a peer playmate (Sussman, 2009). In sum, there is a scarcity of research employing music therapy with preschool aged children. More research needs to be conducted in this area, particularly with preschoolers to determine what is the level of efficacy of music for MBH (Kennelly & Brien-Elliott, 2001).

Bibliotherapy

While traditionally studied within the context of a therapeutic setting, bibliotherapy is a method of communicating and teaching prosocial skills to students and is increasingly implemented in the classroom. Widely applied in schools, bibliotherapy can assist in the development of social and emotional learning growth, as well as enhance problem-solving and solutions, and help with the development of life skills (McCulliss & Chamberlain, 2013). Further, bibliotherapy can readily be adapted in the early education classroom setting. Early educators can utilize bibliotherapy to enhance prosocial skills in young children and to teach preventative methods to cope with hardship as well.

Helping young children develop coping skills is vital in early education. During this time, children are often learning to navigate the social world independent from their primary caregivers. Bibliotherapy can focus on teaching students coping mechanisms, such as taking deep breaths when they are nervous or upset and handling a conflict with a peer. Additionally, bibliotherapy can facilitate social and emotional competence in youth. For example, Kidd and Castano (2013) found reading literary fiction aided in the development of social and emotional competence in youth.

Bibliotherapy is a therapeutic process that is aligned with cognitive-behavioral theory, an evidence-based intervention (Shinohara et al, 2013). Benefits of bibliotherapy vary, and it may be used as a component for an intervention. Examples include treatment for youth with emotional and behavioral needs (Linderman & Kling, 1968), treat-

ment for those with experienced trauma (DeVries et al., 2017), and improved outcomes such as enhancing coping skills for children with a sibling who has a disability (DeVries & Sunden, 2019). As a therapeutic process, it can be used to help children solve problems, cope with those problems, and identify alternative solutions in managing their emotions and behaviors. It can also help children identify and express feelings and thoughts as well as gain insight into their specific situation (Cohen, 1987; DeVries & Sunden, 2019). The bibliotherapeutic process is thought to have four stages: Identification with the character or character's situation, catharsis or emotional cleansing, and development of insight and autonomy and universalization or the stage where the reader feels less secluded or less of an outsider (DeVries et al., 2017; Gregory & Vessey, 2004; McCoy & McKay, 2006).

Components of bibliotherapy that early educators may introduce in their classrooms are multifaceted. Development of self-concept, assistance in problem solving, facilitation of discussion of problems, teaching children that there are often multiple solutions to problems, and finally to letting children know they are not alone in experiencing specific problems are all critical components of implementing bibliotherapy in the classroom (Alex, 1993). Maich and Kean (2004) discuss a four step process to implement bibliotherapy in the classroom, which includes preparation, reading, dialogue, and activity. Preparation includes the careful selection of a book with developmentally appropriate language, reading refers to a teacher led reading reflection, dialogue refers to teacher led discussion in a specific sequence, and activity involves utilizing a hands-on method to enhance expression and creativity (Maich & Kean, 2004).

In sum, bibliotherapy is a method to assist in the development of coping skills as well as social and emotional skills among youth. While bibliotherapy is not a new concept, the idea that it can be utilized as both a preventative fashion as well as a means of treatment is gaining traction in the literature base. Further research is needed in order to analyze the impact of bibliotherapy as a mind body health intervention with preschool populations.

Video Self-Modeling

Video Self-Modeling (VSM) is a social-cognitive intervention where individuals serve as their own models (Dowrick, 1990). The intervention is rooted in social learning theory, which posits that by repeatedly viewing a peer eliciting a specific behavior, an individual will learn to elicit that behavior as well (Bandura et al., 1961). VSM is used to teach desired behaviors that are within the ability of the individual, and that may already be found in their repertoire. To that end, VSM is used to develop, generalize, and maintain goal behaviors. During VSM interventions, individuals watch videos depicting themselves engaging in a behavior that they do not ordinarily display (Dowrick, 1990). VSM allows the individual to act as their own model by using recording and editing procedures to construct short videos in which the individual seems to be exhibiting a desired behavior. When constructing VSM videos, an individual is video recorded in a setting where they typically do not display a desired behavior. Then, video-editing software is used to edit the recording to make it seem as if the individual is fluently engaging in the target behavior within that setting. The intervention is implemented when an individual repeatedly watches their two to three minute VSM video on a schedule that varies in frequency and duration based on the severity of the behavior. VSM draws on the tenets of positive psychology through only using depictions of the person engaging in a desired behavior. That is, VSM videos never show the self-model displaying a behavior that is not preferred or not fluent. By using only positive depictions, VSM is an intervention that allows individuals to learn from the best of their own behavior to promote wellbeing.

Video Self-Modeling can be used to promote numerous behaviors related to positive psychological, social, and physical health outcomes in preschool aged populations. The literature indicates that VSM has been used to successfully increase social initiation behaviors, including appropriate greetings, in samples of typically developing preschool children and among preschoolers with Autism Spectrum Disorder, Downs Syndrome, and Developmental Delays

(Buggey, et al., 2011; Buggey, 2012; Buggey, et al., 2018; Lemmon & Green, 2015). VSM has also been used as an effective intervention to teach preschool aged children social engagement behaviors such as reciprocal play, positive conversational skills, and sustained social interactions (Bellini et al., 2007; Bellini et al., 2016; Lemmon & Green, 2015). Furthermore, the literature has established that VSM has been effective for supporting the gain of spontaneous requesting behaviors among preschoolers with Autism Spectrum Disorder (Wert, 2009; Wert & Neisworth, 2003).

In addition to increasing prosocial behavior, Video Self-Modeling (VSM) can be used to improve behaviors associated with positive academic outcomes in preschool aged populations. Marcus and Wilder (2009) found that VSM was an effective intervention for increasing letter identification skills in a sample of preschool children with Autism Spectrum Disorder. Similarly, VSM was used to teach language skills including age appropriate vocabulary and use of plural morphemes (Whitlow & Buggey, 2004) Additionally, VSM has been shown to increase classroom engagement and on-task behaviors among preschoolers with historically resistant disruptive behaviors (McCoy et al., 2017).

Conclusion

There is no doubt that psychological and educational techniques from within the mind body health framework are beneficial to students in preschool. There are myriad strategies available that are non-intrusive and economically feasible with respect to time and money. . Early intervention is important to the academic, social, behavioral, and physical health development of this age group, arguably more than others, especially so for those at risk. The mind body framework also lends well to cross-disciplinary collaboration and a whole child framework for service delivery. School psychologists and other mental health professionals are well-suited to implement these interventions that are transcendental in terms of interdisciplinary collaboration.

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