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Implementing Mindfulness Practices With Parents of Young Children in a Low-Socioeconomic Status NeighborhoodAndrew T. Roach, PhD¹, Josephine Mhende, MPH¹, Brian A. Barger, PhD¹, and Douglas A. Roberts, MEd¹¹Center for Leadership in Disability, School of Public Health, Georgia State University

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ABSTRACT

Background: The purpose of this study was to investigate whether instruction in mindfulness practices would result in improved self-reported mindfulness and reduced depression, anxiety, and family stress in parents of young children living in a low socioeconomic status (SES) neighborhood.

Methods: The study utilized a pretest-posttest group design to evaluate the effectiveness of the Mindfulness Ambassador Council-Interactive curriculum with attendees in a parent support program. Participants (n=15) were recruited from families with young children who received support from a community-based organization in one low-SES neighborhood in Atlanta. Mental health assessments, measures of family stress and parenting competency, and a demographic questionnaire with non-identifying questions were administered to all participants during the first and last session of the 8-week mindfulness program.

Results: Participants reported increased mindfulness and decreased levels of anxiety and depression. Parent reports of family stressors were relatively stable across the two time points, while self-reported parenting competence decreased.

Discussion: Based on the parents' reports of program acceptability and the impact on their well-being, mindfulness training appears to be a promising strategy for addressing the stressors experienced by parents of young children.

Keywords: Parenting, young children, mindfulness, stress, depression, anxiety

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INTRODUCTION

Building on ideas from Buddhist philosophy and psychology, mindfulness is experiencing rapid acceptance in the West as a set of concepts and practices with potential application across a variety of domains. Jon Kabat-Zinn, one of the most prominent mindfulness teachers in the West, defines mindfulness as “the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experiences moment to moment (Kabat-Zinn, 2003, p. 145). The ability to remain present in each moment is part of what makes us human; however, the capacity to sustain attention can be short lived, and we often are aware only briefly before becoming reabsorbed into our on-going internal dialogue or distracted by external stimuli. As a skill that can be learned and cultivated, mindful awareness provides a strategy for ultimately altering our responses to the existential challenges of our lives. Through repeated practice, proponents of mindfulness believe everyone has the ability to be more mindful.

Over the past 40 years, core mindfulness concepts and practices have been transported to medical and clinical settings by researchers like Kabat-Zinn, who developed the Mindfulness-Based Stress Reduction (MBSR) program as a way of using meditation and related practices (e.g., gentle yoga, attending to body sensations) to promote healing and

well-being. From its initial application in 1979, MBSR has proven effective in reducing chronic pain (Kabat-Zinn, 1982), depression, anxiety (Hofmann et al., 2010), and stress (Kabat-Zinn, 1982). Participation in MBSR programs has also been associated with increased self-awareness (Shapiro, Austin, Bishop, & Cordova, 2005) and self-reported relaxation (Kabat-Zinn, 1982).

Mindfulness interventions have been implemented to address a range of concerns in a variety of settings (Didonna, 2009). Researchers and practitioners are continuing to develop approaches to promote mindfulness in various contexts and investigate its effects with diverse groups of participants. Many populations appear to benefit from the increased self-awareness, resilience, and empowerment that often result from engaging in meditation and related contemplative practices like yoga or tai chi (a Chinese martial art that includes breath awareness and gentle movement). However, some population subgroups may be less likely to engage in mindfulness. For example, analyses of data from the 2002, 2007, and 2012 National Health Interview Survey Alternative Medicine Supplement (Olano et al., 2014) indicated significant lower odds of engagement for Black and Hispanic respondents (vs. White respondents), and for respondents with a high school education or less (vs. respondents who attended at least some college). A second analysis of the same data set indicated that white-collar workers were far more likely to

engage in mindfulness and related practices than other worker groups (Kachan et al., 2017). Additional research is needed to demonstrate the transportability and acceptability of mindfulness practices to diverse participant groups.

Anxiety-related disorders are among the most common of mental health disorders, affecting 40 million adults in the United States each year (National Institute of Mental Health, 2018). Anxiety is highly treatable, yet only 36.9% of people who suffer from it receive treatment (National Institute of Mental Health, 2018). Anxiety disorders have been shown to have an adverse impact on quality of life, sleep, and self-esteem (Judd, et al., 2000; Olantunji, Cisler, & Tolin, 2007; Starcevic, 2009). Furthermore, anxiety can be comorbid with depression; approximately half of people diagnosed with depression are also diagnosed with an anxiety disorder (National Institute of Mental Health, 2018). Individuals with depression can experience fatigue, irritability, and rapid fluctuations in body weight (Anderson, Freedland, Clouse, & Lustman, 2001).

Moreover, parental depression is one of the most significant risk factors for child emotional wellbeing (Galbally & Lewis, 2017). Research suggests children of depressed mothers are more likely to experience breastfeeding problems, eating and sleeping disturbances, and inadequate preventative health care (Wachs, Black, & Engle, 2009). Children's stress hormone levels also have been demonstrated to correlate with their mothers' SES and self-reported depression (Lupien et al., 2000). Parents with young children who live in low-SES neighborhoods often report a variety of stressors including lack of financial resources (Bradley et al., 2002), unsatisfactory occupational status (Santiago et al., 2011), and strained family relationships (Chen et al., 2006).

Researchers have reported that stress accounts for a significant amount of the variance in outcomes between children from low-SES families and their peers (Shonkoff and Phillips, 2000). Poverty may negatively affect children's social-emotional wellbeing because of its influence on parents' behavior toward their children (McLoyd, 1990). The chronic strain associated with persistent economic difficulties, unstable employment, and family disruption can lead to a weakened sense of control over one's life, and increased feelings of anger, depression, and anxiety (Amato and Zuo, 1992; Bradley and Corwyn, 2002). Stress and depression also can negatively affect parenting behaviors, thus inhibiting children's cognitive and emotional development. Studies also have found a negative correlation between levels of parental stress and family functioning (Sidebotham, 2001). Increased parental stress is associated with dysfunctional parenting and child behavioral problems, and these difficulties often persist into adolescence (Bonds et al., 2002; Lippold et al., 2015). In depressed mothers, parent-child interactions are negatively affected, which can result in lowered maternal parenting efficacy (Goodman and Gotlib, 2002). Parents who are stressed or depressed tend to demonstrate more refusing and controlling behaviors, while engaging in less warm and

accepting interactions with their children (Webster-Stratton, 1990).

According to the Centers for Disease Control and Prevention (CDC), adverse childhood experiences (ACEs) may influence individuals' future violence exposure, victimization, and perpetration, and should thus be regarded as a public health issue. This is especially salient for children living in low-SES neighborhoods, who face multiple external environmental stressors and risk factors (Bethell et al., 2016). Research indicates that children in the U.S. who experience emotional, mental, or behavioral challenges are at greater risk for exposure to multiple ACEs. The more ACEs a child is exposed to, the more likely they are to experience lifelong mental, physical, and emotional trauma and chronic stress well into adolescence and adulthood (Bethell et al., 2016).

Mindfulness is most commonly associated with meditation techniques that increase an individual's awareness of the present moment, reduce mindless responding, and enhance non-judgmental observation (Kabat-Zinn, 2003). Building on this definition, Duncan, Coatsworth, and Greenberg (2009) defined mindful parenting as "the intentional bringing of moment-to-moment awareness to the parent-child relationship." Mindfulness interventions appear to be a promising strategy for building parenting capacity and improving parent-child interactions (Parent et al., 2010; Duncan et al., 2009). Recent research suggests that higher levels of mindful parenting may be associated with lower levels of externalizing and internalizing problems in children (Parent et al., 2015). Further, when mindfulness practices were introduced as part of a treatment regime for parents in recovery from methadone addiction, researchers observed a reduced risk of child abuse and improved family function (Dawe and Harnett, 2007). Similarly, parents of children with developmental delays reported increased levels of parental mindfulness, parenting satisfaction, and positive parent-child interactions as well as decreased parental stress after participating in a mindfulness intervention (Singh et al., 2007).

Corthorn and Milicic (2015) analyzed the association between mindfulness and parenting behaviors in mothers who had not received formal meditation training. Sixty-two mothers of preschool children (ages 2 to 5) were asked to complete self-reported questionnaires measuring mindfulness, mindful parenting, parental stress, depression, and anxiety. Corthorn and Milicic reported a significant positive correlation between mindfulness and mindful parenting behaviors, and significant negative correlations between mindful parenting and parental stress and depression.

Duncan et al. (2009) found that incorporating mindfulness into parenting practices allows caregivers to shift their attention to the present moment and away from negative ruminations. With mindfulness training, parents may become more aware of moment-to-moment parenting decisions and more intentional in their actions. This is an especially important finding since positive parent-child

interactions are critical for child brain development. For example, Siegel and Payne Bryson (2015) reported that the way parents interact and respond during moments of stress and conflict greatly influences their children's cognitive and social-emotional development. This is especially true for toddlers and preschoolers, whose brains and behavioral repertoires are developing rapidly. Parents who are taught mindfulness practices may be better able to handle difficult interactions with their children as they arise, modeling emotional regulation and problem solving for their children.

One area in need of further exploration is the effectiveness of mindful practices with parents in low-SES communities who may be at risk for higher levels of stress and depression. Increasing parental mindfulness has been hypothesized to allow parents to be more present during daily activities with their child, resulting better moment-to-moment parenting decisions and improving the quality of parent-child interactions. It is important to demonstrate these effects when implementing mindfulness with parents and children who may most at-risk for negative outcomes. Mindfulness practices also may support parents of young children in interrupting the impact of adverse childhood experiences (ACEs) and other environmental stressors prevalent in low-SES communities (Bethell et al., 2016).

The purpose of the current study is to investigate whether mindfulness practices are useful in addressing feelings of depression, anxiety, and stress in parents of young children living in low-SES neighborhoods. Based on neighborhood parents' feedback and requests, the community-based organization (CBO) that was providing *A Great Start for Parents & Children*, a parent support program, decided to pursue including mindfulness in its offerings to address parents' stress, build their social-emotional competence, and facilitate their effective parenting. The CBO reached out to researchers at GSU for assistance in including mindfulness training in the parent-focused offerings. The first and second authors worked with CBO staff and a group of community stakeholders to make small modifications to an existing mindfulness curriculum to improve its alignment with the needs of low-SES parents with young children.

Implementation of the 8-week *Mindfulness Ambassador Council Interactive* (MAC Interactive) program was intended to (a) increase self-reported mindfulness, (b) decrease stress, anxiety, and depression, and (c) improve participants' sense of parenting competency. Data was collected and analyzed to address the following research questions:

1. Will participation in the MAC Interactive program lead to increased levels of mindfulness as reported by participants?
2. Will participation in the MAC Interactive program lead to improved mental health for participating parents?
 - a. Will participation in the MAC Interactive program lead to reductions in self-reported anxiety?
 - b. Will participation in the MAC Interactive program lead to reductions in self-reported depression?

3. Will participation in the MAC Interactive program lead to reductions in family stress and improvements in parenting competence as reported by participants?
4. Do participants view mindfulness training an acceptable and useful component for inclusion in parenting education programs?

This study utilized a pretest-posttest group design to address these questions and determine the effectiveness and acceptability of an integrated mindfulness-parenting education program.

METHODS

Institutional review board approval

The research reported in this manuscript was reviewed and approved by the Georgia State University Institutional Review Board (IRB).

Participants and setting

Like many other communities locate within urban cores, the neighborhood where we conducted the study has experienced entrenched, multi-generational poverty, elevated levels of crime and substance abuse, and inadequate access to services and supports. The CBO where the study was conducted is located in the middle of this neighborhood, making it a central meeting point for the families residing here. Based upon 2000-2016 data, this low-SES neighborhood has an area of approximately 0.464 square miles with a population of under 3,000 people (City-data, 2016). Eighty-four percent of neighborhood residents are African American and 45.7% of the population living under the federal poverty level (\$25,100 for families/households of four people) (City-data, 2016). Lack of education and employment are significant neighborhood problems; 32% of residents have less than a high school diploma and 24.3% are unemployed. The neighborhood is considered "a food desert" (i.e. an area where access to fresh fruits and vegetables is limited), while accelerated gentrification in surrounding areas of the city is leading to increased costs of living for neighborhood residents. More than half of neighborhood households are cost-burdened when it comes to housing, using over 30% of their income to cover housing costs. The neighborhood also has a high crime-index, and it ranks third in Atlanta for the number of individuals incarcerated or returning from incarceration (Participant Consulting, 2017).

The participants of this study were 15 parents and caregivers of young children (birth to 5 years old) who expressed interest in a parent support group that was facilitated by the CBO as part of its services to neighborhood residents. Parents were invited to participate in a mindfulness curriculum, which was presented on the same evening as the existing parent support program. The average age of the participants was 32.0 years old (SD = 9.7). Thirteen of the 15 participants (87%) were female. All participants (100%) identified as Black/African American. The average number of children for each parent was 2.5 children (SD = 1.2). Thirty-three percent of participants were high school

graduates, while 14% of participants reported they only had “some high school” education. Only two participants (13%) were college graduates, while six (40%) reported they had completed “some college.” Table 1 provides additional

demographic information for the participants. All participants were compensated \$100.00 for their time and participation in this research study.

Table 1. Demographic Data of Program Participants

	Age 21-30 years (%)	Age 31-40 years (%)	Age 41+ years (%)	Total
Number	8 (53%)	6 (40%)	1 (7%)	15
Sex				
Males	1 (7%)	1 (7%)	0	2
Females	7 (47%)	5 (33%)	1 (7%)	13
Number of Children				
0-2	8 (53%)	1 (7%)	1 (7%)	10
3-5	0	5 (33%)	0	5
Age of Youngest Child in Home				
Birth-5 years	8 (53%)	4 (27%)	0	12
6-12 years	0	0	1 (7%)	1
13-17 years	0	2 (13%)	0	2
Highest Level of Education				
Some High School	1 (7%)	0	1 (7%)	2
High School Graduate	2 (13%)	3 (20%)	0	5
Some College	5 (33%)	1 (7%)	0	6
College Graduate	0	2 (13%)	0	2

Assessments and Measures

The following measures were administered to participants following the first and eighth intervention session.

The Five Facets of Mindfulness Questionnaire, Short Form (FFMQ-SF; Bohlmeiher et al., 2011) was used to assess participants' tendency to be mindful in their everyday lives. Like the original form of the same instrument (Baer et al., 2006), the FFMQ-SF is comprised of five subscales that correspond with distinct components of mindfulness: (a) observing internal and external experiences, (b) describing or labeling internal experiences with words, (c) acting with awareness, which includes attending to one's activities in the moment, (d) non-judging of inner experiences (i.e. taking a non-evaluative stance to thoughts and feelings), and (e) non-reactivity to inner experiences, including allowing thoughts to come and go without being carried away by them. The FFMQ-SF consists of 24 Likert scale items and takes less than 5 minutes to complete. In initial validation of the FFMQ-SF (Bohlmeiher et al., 2011), the scale demonstrated a similar factor structure to the original 39-item form. Possible scores ranged from 24 to 120, with possible item response options ranging from 1 (never or very rarely true) to 5 (very often or always true). In previous research, all five subdomains demonstrated sufficient internal consistency ($\alpha = .73$ to $.91$) and higher scores on the FFMQ-SF were associated with higher self-report positive mental health ($r = .20$ to $.37$) and lower reported anxiety and depression ($r = -.02$ to $-.25$).

The Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988) is a commonly used scale that asks

respondents to report feelings of anxiety for the past month. This inventory consists of 21 items with item response options from 0 to 3, and a total possible score of 63 points. In previous research, the BAI has demonstrated sufficient internal consistency ($\alpha = .73$) and test-retest reliability (.75) as well as a moderate correlation (.51) with other measures of anxiety (Beck et al., 1988).

The Center for Epidemiologic Studies Depression Scale (CES-D) is a 20-item assessment that asks respondents to report how often in the past weeks they have experienced symptoms of depression. Responses are scored on a 4-point scale ranging from 0 (rarely, none of the time) to 3 (most, or all of the time). Total scores for this measure can range from 0-60; higher scores indicate more depressive symptomology (Radloff, 1977). The CES-D has demonstrated sufficient internal consistency with both clinical ($\alpha = .85$) and non-clinical ($\alpha = .91$ -.94) samples. The CES-D provides a cutoff score (16 or greater) that indicates the possible presence of clinical depression (Lewinsohn, Seeley, Roberts, & Allen, 1997).

The Family Event Checklist (FEC; Oregon Social Learning Center, 1985) is a 41-item instrument used for examining different components of familial stress. FEC items ask respondents to report if an event occurred in their family during the previous week and, if it occurred, the severity of the impact of that event. Item response options range from 1 (no, the event did not occur) to 4 (yes, the event did occur and had a very negative effect on you). A single measure of family stress is computed by summing respondents' scores

across the items. Total scores for the FEC range from 41-164.

The Parenting Sense of Competence Scale (PSOC; (Gibaud-Wallston & Wandersman, 1978) is a 17-item measure of two dimensions of parenting competence: parenting satisfaction and parenting efficacy. PSOC items have response options ranging from 1 to 6 resulting in a total possible score of 102. Previous research with the PSOC has resulted in varying factor structures across different samples. In light of this we used, the PSOC total scale score which has demonstrate acceptable internal consistency ($\alpha = .75-.88$) in previous research (Ohan, Lueng, & Johnston, 2000).

The Mindfulness Ambassador Council (MAC) Student Survey is a program-specific measure developed to evaluate the effectiveness of the MAC curriculum. The MAC Student Survey consists of 11 Likert scale items with response options ranging from 1 to 4, and a total possible score of 44 points.

Procedures

The MAC Interactive curriculum was comprised of a total of eight weekly lessons. Each week’s lesson (with the

exception of the first session) began with an opening mindfulness practice (e.g., breath observation). This was followed by a council check-in, which provided facilitators with an opportunity to “take the temperature” of the group (e.g., participants were asked to share how they were feeling or something they had experienced since the last weekly session). After council check-in, the group reviewed the home assignment from the last session, and had the opportunity to share any challenges and or self-observations from the home practice. A central feature of each session was council dialogue. During each session, participants were presented with videos and short readings that provided a prompt for deeper discussion of the instructional theme for that session (See Figure 1 for a list of themes and content for each MAC session). After the video or reading was presented to the group, the facilitators posed council dialogue questions and encouraged members to share personal responses and insights (although members were reminded it was okay to pass and not to contribute to the discussion).

After the council dialogue, a second mindfulness practice was presented with time for reflection and discussion.

<ol style="list-style-type: none"> 1. Meeting One: Discovering Mindfulness Mindfulness Practice: TAKE 5 2. Meeting Two: Mindfulness Basics Mindfulness Practice: TAKE 5 3. Meeting Three: Paying Attention Mindfulness Practice: TUZA 4. Meeting Four: Discovering Inside Mindfulness Practice: TUZA 5. Meeting Five: Practicing Gratitude Mindfulness Practice: mindful eating 6. Meeting Six: Noticing Emotional Triggers Mindfulness Practice: TUZA 7. Meeting Seven: Exploring Open-Mindedness Mindfulness Practice: body scan 8. Meeting Eight: Being the Change Mindfulness Practice: pledge for mindful living
<p style="text-align: center;">Mindfulness practices introduced during the MAC Interactive sessions</p> <p><i>Take 5</i> involves slowly drawing five connected breaths. Participants are instructed to focus on the sensation of the breathing.</p> <p><i>Tuza</i> is a breath awareness practice that involves attending to the breath for 3 to 4 minutes in order to develop mental focus and acceptance of self and others.</p> <p><i>Mindful Eating</i> involves brings attention to the moment-to-moment experience of eating. The intent is to slow down, take time to savor the taste of each bite, and experience gratitude for having food to eat.</p> <p><i>Body Scan</i> involves paying attention to body sensations by placing attention on different body parts in sequence. This guided meditation practice helps participants develop greater sensitivity to body sensation and a feeling of overall well-being.</p>

Figure 1. Themes and content of Mindfulness Ambassador Council Interactive lessons

Finally, the facilitators closed the council by offering participants the opportunity to make a closing comment and to participate in a specific community-building activity (e.g., sharing an intention for the upcoming week, giving a compliment to a peer).

Before the end of each weekly session, the co-facilitator reviewed the homework assignment and reminded the participants to try their best to complete the home activities as they were an essential part of each participant's experience. Each week's home assignment included a mindfulness practice. Participants were asked to complete a written log to keep track of their use of the week's specific mindfulness practice and to briefly journal about how they felt after implementing the assigned practice. During the course of the program, participants were introduced to four different mindfulness techniques—*Take 5*, *Tuza*, *Mindful Eating*, and *Body Scan*—which are described in Figure 1 below. Each weekly session opened up with one of these mindfulness practices and a second mindfulness practice was presented near the end of each class.

Pre- and post-test data for each of the measures were collected during the first- and eighth-weeks' sessions. In week 8, we also collected retrospective pre-test data by asking parents to think back to before their participation in the 8-week MAC Interactive program and rate their recollection of their level of mindfulness on the FFMQ-SF items.

RESULTS

Statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 23. To address Research Question 1, we used descriptive statistics and paired samples *t*-tests to compare the post-test data from the 5FMQ-SF with (a) pre-test and (b) retrospective pre-test data collected with the same measures. To address limitations of statistical significance testing with small samples, we also calculated effect sizes using Cohen's *d* for the measures of participant mindfulness. For Research Questions 2 and 3, we calculated descriptive statistics for the BAI, CES-D, FEC, and the PSOC. We also conducted paired samples *t*-tests to compare the pre- and post-test performance on each of these measures. We also evaluated for the study's impact on the outcome variables by calculating effect sizes using Cohen's *d*. Finally, to address Research Question 4, we compared pre- and post-intervention means for items from the MAC Student Survey using descriptive statistics and paired samples *t*-tests.

Changes in self-reported mindfulness

Examination of the data suggested there was an increase in participants' self-reported mindfulness (i.e. total FFMQ-SF score) at the end of the MAC program (see Table 2). However, paired samples *t*-tests conducted on both (a) pre-test and post-test means and (b) retrospective pre-test and post-test means were not statistically significant for either the FFMQ-SF full scale or any of the measure's subscales. This result is not surprising in light of the small sample sizes used for these comparisons.

Table 2. Mean, Standard Deviation, and Effect Size for Measures of Participant Mindfulness

	Pre-Test Mean (SD)	Post-Test Mean (SD)	Cohen's <i>d</i>
5FMQ-SF Total			
Pre/Post (n=10)	79.0 (7.9)	80.0 (14.0)	.09
Retro/Post (n=9)	75.4 (8.2)	80.1 (14.5)	.46
5FMQ-SF Non-Reactive			
Pre/Post (n=10)	16.4 (2.6)	17.2 (5.9)	.18
Retro/Post (n=9)	15.3 (3.8)	17.3 (6.2)	.39
5FMQ-SF Observing			
Pre/Post (n=10)	15.8 (2.9)	14.3 (3.9)	--
Retro/Post (n=9)	13.9 (4.0)	14.6 (3.7)	.18
5FMQ-SF Acting with Awareness			
Pre/Post (n=10)	15.3 (3.7)	17.7 (3.1)	.70
Retro/Post (n=9)	17.0 (5.0)	18.1 (3.1)	.26
5FMQ-SF Describing			
Pre/Post (n=10)	18.2 (3.0)	17.9 (4.6)	--
Retro/Post (n=9)	15.7 (3.3)	18.0 (4.8)	.56
5FMQ-SF Nonjudging			
Pre/Post (n=10)	13.3 (3.0)	12.9 (3.8)	--
Retro/Post (n=9)	13.5 (3.7)	12.9 (4.0)	--

Note: No pre/post or retro/post comparisons (paired sample *t* tests) were statistically significant at $p > .05$.

In light of this limitation, we also calculated Cohen's *d* effect sizes to assess the magnitude of the changes in mindfulness over the course of the MAC program. When considering the traditional pre- and post-test data, changes

in participants' self-reported mindfulness demonstrated small effects on the total FFMQ-SF ($d = .09$) and the Non-Reactive subscale ($d = .18$) as well as a large effect size ($d = .70$) on the Acting with Awareness subscale. When the

Cohen’s *d* was calculated using the retrospective pre-test FFMQ-SF scores in place of the traditional pre-test data, participants demonstrated a moderate change ($d = .46$) in overall self-reported mindfulness (i.e. the FFMQ-SF Total). Using the retrospective pre-test, participants also reported small to moderate changes on the Non-Reactive ($d = .39$), Observing ($d = .18$), Acting with Awareness ($d = .26$), and Describing ($d = .56$) subscales.

Changes in self-reported anxiety and depression

Comparison of pre- and post-test data (Table 3) resulted in statistically significant decreases in scores on the measures of parental anxiety and depression. In order to evaluate the magnitude of the MAC Interactive program’s effect, we calculated Cohen’s *d* for each of the variables of interest.

Among the study participants, there was a moderate to large decrease in self-reported anxiety ($d = 0.77$) and self-reported depression ($d= 0.80$).

Changes in parental competence and family stress

Participants also reported decreased parenting competency as measured by the PSOC. Although the change in PSOC scores was in an unanticipated direction, it was not statistically significant. There was also a slight (but not statistically significant) decrease in the FEC scores from time 1 to time 2. These also was a very small effect for familial stress ($d =.07$) as reported on the FEC, indicating the presences of stressors in participants’ family contexts were relatively stable across the 8-week period.

Table 3. Paired sample t test and effect size for measures of mental health, stress, and parenting

	Pre-Test Mean (SD)	Post-Test Mean (SD)	t	Sig. (2-Tailed)	Cohen’s d
BAI (n=12)	15.8 (8.7)	8.5 (10.3)	2.9	.014	0.77
CES-D (n=12)	29.3 (8.4)	23.2 (6.9)	2.7	.020	0.80
FEC (n=12)	83.9 (23.0)	82.3 (24.2)	.29	.776	0.07
PSOC (n=12)	49.3 (12.3)	42.3 (11.3)	2.1	.056	--

Note: Beck Anxiety Inventory (BAI); Center for Epidemiologic Studies Depression Scale (CES-D); Family Event Checklist (FEC); Parenting Sense of Competency Scale (PSOC)

Acceptability and Utility of Mindfulness as a Component of Parent Education and Support Programs

The MAC Student Survey measured participant’s pre- and post- program experiences with and understanding of mindfulness concepts and practices. Each item was scored from 1 (Not at all true) to 4 (True all of the time). Table 4 shows the mean scores and standard deviation for each survey item. There was an increase in mean score for five of the 11 items following program participation, but no items demonstrated statistical significant changes. The largest positive changes in mean scores were observed on two items: “I have been taught effective ways to manage my

reactions when I am triggered” (pre/post $\Delta = .7$) and “I have been taught effective ways to calm down and reduce stress” (pre/post $\Delta = .6$). Three out of the 11 items saw no change in mean score from pre- to post-test, and three items saw a decrease in mean score after program completion. Differences on the two items showing the biggest decreases (“I am mindful in my daily life” and “I consider other peoples’ perspectives when they differ from my own”) might reflect participants’ improved understanding of mindfulness and greater self-awareness following program participation

Table 4. Mean pre- and post-intervention responses MAC student survey

Item	Pre-Test Mean (SD)	Post-Test Mean (SD)
1. I am mindful in my daily life.	3.3 (.9)	2.9 (.7)
2. I have been taught effective ways to focus my attention.	3.3 (.5)	3.2 (.8)
3. I am aware of my personal strengths and weaknesses.	3.6 (.5)	3.6 (.5)
4. I consider other peoples’ perspectives when they differ from my own.	3.2 (.7)	2.9 (.9)
5. I understand how to make responsible decisions.	3.4 (.5)	3.7 (.5)
6. I communicate effectively with others.	3.5 (.5)	3.5 (.9)
7. I am grateful in my daily life.	3.7 (.7)	3.8 (.4)
8. I have been taught effective ways to manage my reactions when I am triggered.	2.7 (.7)	3.4 (.7)
9. I have been taught effective ways to set goals and take action to support the future I want for myself.	3.5 (.5)	3.5 (.7)
10. I help others in my daily life.	3.4 (.7)	3.8 (.4)
11. I have been taught effective ways to calm down and reduce stress.	2.7 (.7)	3.3 (.8)

DISCUSSION

This study provided initial data on the effectiveness of implementing mindfulness practices with parents of young children in a low SES neighborhood. As reported by participants, partaking in the MAC Interactive program lead to increased levels of mindfulness. While the impact on participant mindfulness was relatively small when comparing traditional pre- and post-test data, we observed a much more robust effect when we included a retrospective pre-test in lieu of the traditional pre-test data. Retrospective pre-tests are sometimes used to address response-shift bias in pre-intervention self-report measures. In other words, some researchers theorize that intervention participants may develop increased awareness and insight about personal characteristics and behaviors during the course of an intervention. This increased self-awareness can result in participants rating themselves more critically at the conclusion of an intervention program despite demonstrating intervention-related improvements (Hill & Betz, 2005). We believe the use of a retrospective pre-test in our study may have addressed some of the validity concerns with self-reported measures of mindfulness identified by Grossman (2011).

Program participants also reported statistically significant decreases in self-reported anxiety and depression. Conversely, program participation did not lead to increase in self-reported parenting efficacy and satisfaction. We speculate that the length and linguistic complexity of the measure of this construct may have caused confusion or response fatigue in parents, resulting in less valid responses. Another possible explanation for the lack of effect on the parenting measure could be that, after completing the mindfulness training, participants were more aware of their parenting challenges, resulting in lowered feelings of efficacy and satisfaction.

Based on our findings, we believe mindfulness training may be a useful strategy for inclusion in parenting education and support programs in low-SES contexts. Participants' responses on the MAC Student Survey suggested they found the mindfulness content and practices helpful in their daily lives. In particular, the participants strongly endorsed the following items that align with the goals of the program: "I have been taught effective ways to manage my reactions when I am triggered" (3.3 out of 4) and "I have been taught effective ways to calm down and reduce stress" (3.4 out of 4). This suggests that participants found the mindfulness teachings beneficial in responding to difficulties and challenges in their everyday life. Specifically, the program included practices like mindful breathing that participants could use when they found themselves in difficult situations, as well as information on how to identify emotional triggers and react to them mindfully.

There were a number of context-specific barriers to implementation and evaluation of the program. During the study, many participants had trouble attending each of the eight sessions due to difficulties with transportation and work schedules. This affected data collection and may have

influenced some of the results. For example, instead of data for the total sample of 15, we had completed pre- and post-test measures for only 10 or fewer participants on some constructs. The readability of the measures were also a concern, as well as the time it took to complete each measure. At least two participants had substantial difficulty reading and comprehending the measures (even with assistance from the research team) and we were unable to include their data in the analyses. Some additional limitations included the relatively small sample size and the reliance on self-report data for evaluating the intervention's impact. In particular, the small sample size reduced the statistical power of a study, making it difficult to demonstrate statistical significance and limiting our confidence in the generalizing these findings to other populations. Another study limitation is the use of convenience sampling; in other words, our CBO partner recruited the participants for this study from community members that expressed an interest in the program. It is possible that the participants in the study were not representative of other parents in this (or similar) low-SES neighborhoods.

Anecdotal feedback from participants indicated they enjoyed the mindfulness sessions and were interested in future opportunities to deepen their mindfulness practices. In future studies, it might be helpful included more explicit qualitative data collection (e.g., interviews, focus groups) to provide further insight into some of our quantitative findings. Overall, the MAC Interactive program appeared to be an acceptable and effective way for parents to increase their mindfulness and improve their well-being.

CONCLUSIONS

The utility and effectiveness of mindfulness programming for parents in low-SES neighborhoods is a topic in need of further research. The literature details the effectiveness of mindfulness practices in addressing health and mental health concerns across a variety of contexts and populations. Results from this study indicated that participation in mindfulness training was associated with decreased parental anxiety and depression, and a corresponding increase in levels of parental mindfulness. This is a potentially impactful finding because internalizing disorders in mothers are associated with diminished neurocognitive, social, and health outcomes in their children (Gelaye, Rondon, Araya, & Williams, 2016). By reducing their anxiety, stress, and depression, parents may be able to interact with their families in a healthier way. Research tells us that families living in low-SES communities may be particularly vulnerable to financial and economic stressors. Through mindfulness training, participants in our study were given tools to better cope with those stressors, which we hope will contribute to increased well-being, improved family functioning, and positive child outcomes.

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