Fall 12-21-2018

Qualitative Study of a Mindfulness-based Smoking Cessation Treatment among Racially/Ethnically Diverse Adults

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Abstract

Qualitative Study of a Mindfulness-Based Smoking Cessation Treatment Among Racially/Ethnically Diverse Adults

By

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November 2018

Introduction: Research suggests that mindfulness-based treatment may improve smoking cessation outcomes; however more research is needed to understand and improve these interventions for diverse populations. Historically, racial/ethnic minorities and low-income individuals have been underrepresented in mindfulness studies. It is critical to understand experiences with mindfulness training among diverse and underserved populations. **Aim:** The current study examined qualitative data from a diverse group of participants who received Mindfulness-Based Addiction Treatment (MBAT) for smoking cessation. The study provides insight about how mindfulness-based training is experienced by individuals of diverse socioeconomic backgrounds, races and ethnicities and provides suggestions of ways in which to improve the program. **Methods:** Participants were 28 adult smokers (50% Black or African American, 32.1% Caucasian, 14.3% more than one race; 57.1% annual income $\leq$ $30,000) who received eight weekly 2-hour MBAT group sessions and nicotine patches to help them quit smoking. Participants then engaged in individual in-depth interviews describing their experiences and suggestions to improve the program. Interviews were transcribed verbatim and managed using NVivo 11. A team of coders reviewed the transcripts to identify salient themes. **Results:** Relevant themes included benefitting from practicing mindfulness and finding it helpful for quitting smoking; using mindfulness to cope with cravings and stress; expressing preferences for specific forms of mindfulness practices (e.g., body scan, walking meditation, yoga, etc.); discussing barriers and least preferred forms of mindfulness practice; describing mindfulness in their own words; appreciating social support offered through the group; and providing suggestions to improve the program including the use of technology (e.g., mobile apps and YouTube tutorials). Overall, participants indicated a high level of interest in continuing to practice mindfulness on their own and shared strategies for incorporating it into their daily lives. Most assessments of MBAT were favorable and the atmosphere was typically reported as supportive and non-judgmental, but some reported disruptive intragroup dynamics. When probed for ways to improve the program, participants consistently suggested offering more days and times for group sessions in order to accommodate different schedules, and using technology to enhance the program. Many wanted the program to continue beyond eight weeks. **Discussion:** Overall, mindfulness-based training was endorsed by individuals of diverse backgrounds (i.e., racial, ethnic, gender, and socioeconomic) as being helpful and beneficial for smoking cessation. Greater accessibility and incorporating technology in the program were the predominant suggestions for program improvement.

QUALITATIVE STUDY OF A MINDFULNESS-BASED SMOKING CESSATION TREATMENT AMONG RACIALLY/ETHNICALLY DIVERSE ADULTS

by

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B.S. UNIVERSITY OF WESTERN ONTARIO

A Thesis Submitted to the Graduate Faculty
of Georgia State University in Partial Fulfillment
of the
Requirements for the Degree

MASTER OF PUBLIC HEALTH

ATLANTA, GEORGIA
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Approval Page

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Acknowledgements

To my Thesis Committee: I am eager to express my gratitude and appreciation for my mentor and Thesis Committee Chair, Dr. Claire A. Spears. Thank you, Dr. Spears, for your continuous guidance, insightful feedback, and relentless support and encouragement. Thank you to my Thesis Committee Member, Dr. Ashli A. Owen-Smith for your willingness to be a part of this project and for providing me with thoughtful and constructive input, elevating this project to the next level. Drs. Spears and Owen-Smith have both invested significant amounts of time and energy into supporting me, not only with this enormous endeavor but also, with my professional development. I sincerely thank you both.

Thank you to the past and present members of the GSU Mindful Living Lab, with special thanks to my fellow coders, Hala Elahi, Amanda Grant and Courtney Strosnider. You are the best colleagues and it has been an absolute pleasure working with all of you. Thank you to the Georgia State University School of Public Health for giving me the opportunity to shine. Thank you to countless faculty, supervisors, preceptors and staff members that have supported me throughout my journey to obtain my MPH.

To my family: Thank you to my remarkable husband and best friend, Jamaal. This would not have been possible without your encouragement and unwavering support. Thank you for being a loving husband and nurturing father, taking care of the kids while momma was quarantined to the office to work. Words cannot adequately express my gratitude. I am blessed to have you as my partner. Thank you to my three beautiful babies (Nelson, Téa and Otis) for your hugs, kisses and for being such great cheerleaders for momma.

Thank you to my mom (Barbara), dad (Max) and sister Camille for believing in me and for instilling me with confidence. Thank you, mom and dad, for being grammar and proofreading machines, for continuing to put up with me and for your love and support. Thank you to my in-laws (June, Kisha and Sean) for your tireless support and encouragement, for letting me take over your dining room table, and for providing poppa with well-deserved breaks.

I am blessed to have all the people in my life who so generously give of their time, love and support. THANK YOU!

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Charlayne A. Scarlett

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Chapter I: Introduction

Research suggests that mindfulness-based approaches may improve smoking cessation outcomes (Brewer et al., 2011; Oikonomou, Arvanitis, & Sokolove, 2016); however more research is needed to understand and improve these interventions for diverse populations. Historically, racial and ethnic minorities and low-income individuals have been underrepresented in mindfulness studies (Fuchs, Lee, Roemer, & Orsillo, 2013; Proulx et al., 2018; Woods-Giscombé & Gaylord, 2014). It is critical to understand the ways in which mindfulness training is experienced among diverse and underserved populations. The current study examined qualitative data from a socioeconomically and racially/ethnically diverse group of participants who received mindfulness-based addiction treatment (MBAT) for smoking cessation. Specifically, the aims of the study were to: (1) provide insight into how MBAT is experienced by socioeconomically, racially/ethnically diverse individuals and (2) generate suggestions for adaptations.

Mindfulness can be described as the intentional practice of paying attention to the present moment with a spirt of non-judgment (Kabat-Zinn, 2005). Mindfulness involves engaging the five senses in observation of the present moment and encourages the observer to experience the world with curiosity and acceptance, as opposed to being preoccupied with past experiences or future expectations and worries (Kabat-Zinn, 2005). The practice of mindfulness has been applied to a wide variety of health issues for the purpose of promoting health. For example, mindfulness has been used or tested as an intervention for the treatment of chronic pain (Ball, Nur Shafina Muhammad Sharizan, Franklin, & Rogozińska, 2017; J. Kabat-Zinn, 1982; Majeed, Ali, & Sudak, 2018), stress reduction (Goyal et al., 2014; Khoury, Sharma, Rush, & Fournier, 2015), substance and alcohol abuse (Li, Howard, Garland, McGovern, & Lazar, 2017), depression (Goldberg et al., 2018; Kuyken et al., 2016; Piet & Hougaard, 2011) and obesity (Mason, Jhaveri, Cohn, & Brewer, 2018).

Tobacco use is another public health issue that warrants serious attention and might be targeted by mindfulness training.

Globally, tobacco use is responsible for more than 7 million deaths each year (World Health Organization (WHO), 2018). Killing half of all lifetime users (WHO, 2018), tobacco use is the leading cause of the preventable death worldwide (Centers for Disease Control and Prevention (CDC), 2018c). In the United States, cigarette smoking kills over 480,000 people each year and costs the country over $300 billion annually in direct medical costs and lost productivity (CDC, 2018c). In 2015, 68.0% of current adult smokers in the United States expressed a desire to quit smoking and over half of all U.S. adult smokers reported having attempted to quit smoking in the previous 12 months (CDC, 2018c).

Serious health disparities associated with tobacco use exist. Although the prevalence of smoking is about equal for non-Hispanic White and non-Hispanic Black adults (i.e., 16.6% and 16.5%, respectively) (CDC, 2018c), African Americans are more likely to die from tobacco-related illness than Whites (CDC, 2018a). For example, the incidence of lung cancer among African Americans (74.7 per 100,000) is higher than the incidence for any other group (i.e., 64.4 per 100,000 for Whites and 44.9 per 100,000 for Native American/Alaskan Natives) (American Lung Association, 2010). The CDC (2018a) reported that among smokers, even though African Americans were more likely to express an interest in quitting (72.8%) and attempt to quit at a higher frequency (63.4%) compared to Whites (53.3%) and Hispanics (56.2%), African Americans were less likely to succeed in quitting than Whites and Hispanics. Tobacco-related disparities in health are also observed by socioeconomic status (SES) with those in lower socioeconomic strata having higher tobacco use prevalence and suffering worse health outcomes those with higher socioeconomic standing (CDC, 2018b). For example, among adult smokers over the age of 24, those with a graduate degree smoked far less (4.5%) than those with only a GED (40.6%).

Additionally, current smokers over the age of 24 living at or above the poverty level smoke less (14.3%) than those living in poverty (25.3%) (Jamal et al., 2018).

Practicing mindfulness (i.e., deliberately experiencing the present moment with full awareness and without judgement) is thought to empower people to make more deliberate choices as opposed to defaulting to reactive or automatic behaviors (Ludwig & Kabat-Zinn, 2008). Mindfulness might promote health and wellbeing by strengthening the capacity to cope with a variety of life experiences (Ludwig & Kabat-Zinn, 2008). It is thought that by engaging in non-judgmental awareness of one's mental response to challenging life experiences (i.e., maladaptive thought patterns, traumatic memories, etc.) the individual will be less adversely impacted by them (Ludwig & Kabat-Zinn, 2008). As such, mindfulness has been proposed as one solution to enhance health through reducing stress and negative emotions and increasing motivation for healthier behaviors (Ludwig & Kabat-Zinn, 2008). One reason that mindfulness might be useful for the treatment of addictive behaviors, including tobacco use, is that it is theorized to counteract the effects of experiential avoidance (Shapiro, Carlson, Astin, & Freedman, 2006). Experiential avoidance takes place when a person attempts to avoid his or her negative or uncomfortable internal experiences, often through denial or unhealthy behaviors such as substance use (Hayes et al., 2004). Mindfulness involves acknowledging unpleasant thoughts and emotions without being carried away with them (Hayes et al., 2004). Non-judgmental observation of experiences (including emotions, memories, sensations, cravings, etc.) is also believed to reduce the reactivity and automaticity of behavior (Hayes et al., 2004). For example, through mindfulness practice a smoker might learn to non-judgmentally observe sensations of craving, recognizing that they will not last forever, and thus be less likely to automatically react by smoking in an attempt to reduce these unpleasant sensations (Brewer, Elwafi, & Davis, 2013).

Chapter II: Literature Review

Studies examining the efficacy of mindfulness-based treatments for smoking cessation have shown promise (Brewer et al., 2011; Davis, Goldberg, et al., 2014; Davis, Manley, Goldberg, Smith, & Jorenby, 2014; Elwafi, Witkiewitz, Mallik, Thornhill, & Brewer, 2013; Oikonomou et al., 2016; Vidrine et al., 2016). For example, Brewer and colleagues (2011) conducted a randomized controlled trial (RCT) to evaluate the efficacy of mindfulness training for smoking cessation. Participants were randomly assigned to receive either mindfulness training or standard treatment for smoking cessation for four-weeks. Results indicated that participants in the mindfulness treatment reduced their cigarette use significantly more than participants in the comparison group at post-treatment and 17-week follow-up, and point prevalence abstinence rates were significantly higher among those who received mindfulness training than those who received standard treatment.

In a 2014 study, Davis, Goldberg and colleagues randomly assigned smokers to receive either 7 weeks of mindfulness training for smoking cessation or usual care that included access to a tobacco quit helpline and nicotine replacement therapy. For treatment initiators, 7-day point prevalence abstinence rates at four and 24 week follow-ups and continuous abstinence rates were significantly higher in the mindfulness group compared to the control group (Davis, Goldberg, et al., 2014).

In another RCT, the efficacy of MBAT for smoking cessation was assessed (Vidrine et al., 2016). Mindfulness-based treatment was compared to cognitive behavioral treatment (CBT) for smoking cessation and usual care. There were no significant differences in overall smoking abstinence rates between treatment conditions. However, participants who received MBAT exhibited significantly better recovery from lapses than participants in the other treatment groups,

indicating that mindfulness might help people to recover from early smoking lapses and help to stop the progression of lapses into full blown relapses (Vidrine et al., 2016).

Historically, racial and ethnic minorities and individuals with low SES have been underrepresented in mindfulness studies (Amaro, 2014; Amaro, Spear, Vallejo, Conron, & Black, 2014). Mindfulness studies that have included more diverse samples have shown encouraging results, with recent studies supporting the use of mindfulness-based treatment for smoking cessation among lower-SES (Davis, Goldberg, et al., 2014; Davis, Manley, et al., 2014) and more racially and ethnically diverse samples (Brewer et al., 2011; Heppner et al., 2016; Vidrine et al., 2016). However, our understanding of how mindfulness training is experienced among more diverse populations is still very limited (Spears et al., 2017). Qualitative research can provide rich information about participants' experiences learning and applying mindfulness to smoking cessation, and provide researchers with feedback and suggestions, given by diverse individuals, for improving mindfulness-based interventions. The present study involved qualitative analysis of in-depth interviews from a diverse sample of individuals who participated in an 8-week MBAT intervention for smoking cessation. The objective of this study was to understand how mindfulness training was experienced by these participants and ways in which the program can be adapted for racially and ethnically diverse individuals and individuals of diverse socioeconomic backgrounds.

Chapter III: Methods and Procedures

Study Data and Population

This study employed a qualitative research methodology to analyze in-depth interviews from an RCT (Spears et al., 2018) comparing the effectiveness of an 8-week MBAT protocol (Wetter, Vidrine, Fine, Rowan, Reitzel, & Tindle, 2008) for smoking cessation with and without between-session text messaging support. The Institutional Review Board at Georgia State University approved the study.

Participants in this RCT were between the ages of 18 and 65 years; current smokers with a history of smoking ≥5 cigarettes/day for the past 12 months (biochemically confirmed with expired carbon monoxide ≥6 ppm); motivated to quit within the next 30 days; residents of the greater Atlanta, GA area; had a functioning telephone number and owned a mobile phone with text messaging capability; were able to speak, read, and write in English; and had marginal/adequate health literacy (as determined by the Rapid Estimate of Adult Literacy in Medicine [REALM]; Davis et al., 1991). Individuals having contraindications for the nicotine patch; active substance abuse/dependence; current diagnosis of schizophrenia or bipolar disorder, or use of antipsychotic medications; a score of ≥3 on the Patient Health Questionnaire-2 depression screening instrument; regular use of tobacco products other than cigarettes; current use of tobacco cessation medications; pregnancy or lactation; or another household member enrolled in the study were excluded from participation.

Participants ($N = 72$) were randomly assigned to receive either MBAT ($N = 33$) or MBAT plus between-session mindfulness-based text messages ("iQuit Mindfully;" $N = 39$; Spears, 2018). The current study involved the qualitative analysis of semi-structured, in-depth interviews conducted one-month post-treatment. Only participants who were randomized to the MBAT

condition (i.e., those who did not receive the additional text messaging intervention) and completed post-treatment interviews were included ($N = 28$).

Mindfulness-Based Addiction Treatment (MBAT)

MBAT was developed by Wetter and colleagues (2009) as a mindfulness-based intervention for smoking cessation. Similar to Mindfulness Based Cognitive Therapy (MBCT), the main objectives of MBAT are: i) to increase present-focused awareness of internal phenomena such as thoughts, feelings, responses to situations and memories, ii) to develop healthier responses to challenging situation and internal phenomena and, iii) to reduce habitual responses and reactivity in favor of more thoughtful and intentional responses to internal phenomena and situations. MBAT incorporates subject matter pertaining to nicotine dependence rather than the depression-related material from MBCT.

Delivered over an 8-week timeframe, sessions 1 to 4 prepare participants to quit during the 5th week of the program by teaching participants a variety of mindfulness techniques (e.g., sitting meditation, body scan, walking meditation, awareness of breath meditation, eating meditation, yoga, etc.), raising awareness of unconscious behaviors and inattentiveness to the present moment (i.e., automatic pilot), and teaching participants how to increase their presence or ability to be in the here and now using mindfulness. The subsequent three weeks reinforce previously learned practices and provide support to recent abstainers. Participants of MBAT are encouraged to practice mindfulness between sessions to support their progress and enhance results.

In-Depth Interviews

Topics covered in the interviews included discussions of participants' impressions of MBAT, experiences practicing mindfulness independently and their preferred types of practice, perceived benefits and barriers to practicing mindfulness outside of treatment, their own descriptions or definitions of mindfulness, and suggestions to improve MBAT. For example,

participants were asked, “Tell me about your experience with the mindfulness-based quit smoking program. What was helpful? What was not helpful?” “How would you describe mindfulness, in your own words?” and “What suggestions do you have for teaching people mindfulness?” Participants were also asked, “How (if at all) did you practice mindfulness on your own, in between the group sessions?” All participant interviews were audio-recorded with a digital voice recorder and transcribed verbatim. Interview transcripts were managed and coded using QSR International’s NVivo 11 software.

Data Analysis

Step one

Thematic analysis (Braun & Clarke, 2006) using a Grounded Theory Approach (Glaser & Strauss, 1967) was the qualitative methodology adopted in this study. As such, both deductive and inductive approaches were used in the development of the coding manual. For the first step of the coding process, the lead (Charlayne A. Scarlett) and principal investigator (Claire A. Spears) referenced questions from the interview guide to begin generating an initial list of themes and definitions of themes for the coding manual. Next, four coders collaborated in an iterative process to identify additional recurring themes from the transcripts.

Step two

Step two involved the preliminary coding of the first eight transcripts for the purpose of refining the coding manual. This step involved three rounds of preliminary coding prior to the initiation of final data coding procedures. During the first round of coding, the four coders independently coded the first transcript, documenting their questions and suggestions for changes to the coding manual and code definitions. Next, all coders met to review and discuss the coding and reached consensus to resolve any inconsistencies. The coding manual was updated to reflect content discussed at the meeting.

The second round of coding involved all coders independently coding the next three transcripts. The same collaborative process, outlined above for the first round of coding, was revisited after each step to achieve consensus and update the coding manual. In the third round of coding each coder independently coded the first eight transcripts. The first four transcripts (which were coded during rounds one and two) were re-coded to account for any updates made to the coding manual in earlier rounds.

Finally, each of the first eight transcripts were re-coded by two coders working independently to confirm consensus and the accuracy of the coding manual. The lead investigator reviewed the final coding of the first eight transcripts to confirm consistency. This iterative process helped to strengthen the reliability between coders and comprehensiveness of the final coding manual. The final coding manual was distributed to all coders and discussed before final coding was commenced.

Step three

For final coding the remaining 20 transcripts were divided equally among the four coders so that each coder was responsible for coding five transcripts. The lead investigator reviewed the coding of all 28 transcripts, making note of any discrepancies and discussing them with the principal investigator when necessary. Inconsistencies were rare and final coding decisions were effortlessly made by the lead investigator.

Study Aims

The objectives of this study were: 1) to better understand the experiences with MBAT among socioeconomically, racially and ethnically diverse smokers and 2) to obtain feedback on ways to improve the perceived acceptability and utility of MBAT.

Chapter IV: Results

Participants

Twenty-eight participants with diverse socioeconomic backgrounds and representing diverse races and ethnicities participated in this study. Fifty percent of participants were Black or African American, 32.1% were Caucasian, 14.3% were more than one race, 3.6% were Asian, and 3.6% were Hispanic or Latino. The mean age of study participants was 46 years. On average, participants smoked roughly 20 cigarettes per day and had been smoking for almost 28 years. There were slightly more women than men (17 and 11 respectively), most participants were single (60.7%) and 39.3% were living below the poverty level (see Table 1). Of the 28 participants in this study, 21 (75%) attended five or more sessions, with 12 (43%) attending all eight sessions. Even when all participants who were randomly assigned to the MBAT group are considered (including the five who did not attend the post-treatment interviews), 64% of participants attended at least five MBAT sessions.

Identified Themes

Recurring themes identified by researchers across participant interviews included: i) Participant impressions of MBAT and mindfulness, ii) Applications for mindfulness, and iii) Suggestions to improve the program. Table 2 displays major themes and subthemes identified.

Participant impressions of MBAT and mindfulness

Participants' understanding of mindfulness

When participants described mindfulness in their own words, two common themes were identified: i) present-focused awareness and ii) attentional control.

Present-focused awareness: When asked to describe mindfulness, one woman said:

> When I first started going, I thought what it meant is being mindful and liking everything. It's not. Even if you're not liking it, just being aware that, oh, this is stressful, or this chair

is too hard, or this is hurting my back a little bit, or whatever. That's what I see it is, and I think it's just unbelievable.

Some participants spoke about gaining greater awareness of their bodies and described mindfulness as being "more aware of your body, and what's goin' on inside, and outside of your body." Others discussed mindfulness as having an awareness of their surroundings. For example, "stepping back, taking a moment to yourself to think and recognize the little things around you before acting on impulses." A woman said that mindfulness is "having your brain just here and now, not thinking, 'where am I gonna be in five minutes?'" The idea of shutting off "automatic-pilot" came up on several occasions. One man described, "Usually I'm up, I'm in the shower, out the shower, cooking breakfast, drinking coffee, trying to get my clothes together, trying to get my bag, just to get out the door. . . Just to be able to slow down and take time to – not just rush everywhere."

Attentional control: One man compared mindfulness to being in "the zone" while playing basketball, saying "you're in your own zone. It's just like basketball when people go on a hot streak, they don't see nothing around, they just see the ball and the basket . . . it's all about straight tunnel vision and just close everything out." Another woman said that mindfulness was "to be able to focus your mind better than lettin' it skip, hop, and jump from one thing to another".

Helpfulness of MBAT and mindfulness

Several sub-themes emerged which related to the helpfulness of mindfulness and MBAT. Participants reported liking MBAT, benefitting from mindfulness practice, learning valuable skills, and recommending the program to others.

Liking and benefitting from mindfulness: The vast majority of participants indicated that they liked or enjoyed taking part in MBAT sessions. Participants told interviewers, "I loved every Thursday coming here" and "it's perfect, if you ask me." One man responded, "What did I like

about the program? Oh my god. I'm totally mind blown by the program. Not even the program itself. The implications of the program because the program is great." One woman went so far as to say, "this was a miracle program" and several participants expressed gratitude (e.g., "It was an amazing experience to me, and I thank you for letting me be a part of it;" "from what I've been through, it truly has been a blessing for me").

In addition to benefitting from mindfulness specifically to help them quit smoking and cope with stress (described below), participants described more general benefits of mindfulness practice, such as: "Meditating really just helps me start my day. It helps calm me, and get me focused" and "[Mindfulness practice] really made me think . . . before you have a reaction to the way you're feeling . . . to breathe, to meditate, to close your eyes and just – and I just go to my little happy place." One woman described how she learned to appreciate the little things and how mundane routines became enjoyable for her after completing MBAT:

> I could not stand blow drying my hair. It takes too long, whatever. [The MBAT instructor] taught us to just think through it. When you're doing it, you don't have to like it, but just think. You're doing this. How are you feeling? Okay. This is taking too long. Anyway, I would do that all the time where now I like it.

One man described benefitting from the program by becoming more attentive and vigilant against going through life unconsciously:

> What I liked about it was the fact that I could get into it to where I could feel things that I never felt before. I didn't take the time to, as they say, smell the coffee. I always just ran through life like it was on automatic. When I was made – not made – when I was shown to stop and slow down a bit, then I started feeling more in tune.

Another woman described how mindfulness helped her to be more thoughtful and less reactive explaining, "You can actually think about that feeling and embrace that feeling instead of acting

on it every time." Participants noted that the program was helpful above and beyond smoking cessation (e.g., "way, way, way more than quit smoking, this program has helped me;" "It was helpful in various aspects of my life, not only smoking").

Recommending MBAT to others: Many participants had promoted the program to people outside of the study. A man said, "I told 'em to come, so if they really wanna stop. This is, you know what I'm sayin', the best place to go." Another woman said, "I would recommend it for anyone." One woman shared her recommendation to another:

> I said, "Clear it with your boss, go, pay attention, put your phone away." I said, "This can help you when you're there." I said, "I found it very useful. If you wanna quit, this will work if you work with it."

Dislikes/difficulties with MBAT

The dominant theme that recurred when participants were asked what they disliked about the MBAT program specifically (as opposed to the practice of mindfulness itself) was that they did not dislike anything about it. For example, when asked whether there was anything they did not like about MBAT, 15 participants responded by saying, "there wasn't anything that I disliked about the program," "no, not really," and "no. I liked the entire program." No participant reported disliking MBAT outright. These favorable results regarding MBAT are in contrast to some criticisms of the practice of mindfulness (e.g., formal or informal mindfulness exercises) which were reported by some participants (discussed in the "*Barriers to practicing mindfulness*" section below). However, two participants reported the repetitive aspect of the MBAT sessions to be undesirable. One woman said, "I think some of the things that [the instructor] went over… seemed to me like they were a little monotonous, like he kept repeating himself a lot." Another woman said, "because people weren't showing up, so it was just a lot of repetition of the same ideas over and over again, and I was like, I want the new stuff."

Between-session mindfulness practice

Recurring sub-themes pertaining to the independent practice of mindfulness by participants between sessions were: i) formal practice, ii) timing and duration of practice, iii) informal practice, and iv) barriers to practice. When asked about whether they practiced mindfulness on their own, only three participants shared that they never practiced mindfulness outside of the group and two noted that they had practiced mindfulness during MBAT but had not continued to practice since completing the program (i.e., "I had slacked off," and "I slipped back and other things start to come in the way").

Formal mindfulness practice: Many participants reported practicing formal mindfulness techniques between sessions and many spoke positively about their favorite practices. No single formal mindfulness practice stood out as the most favored among participants. Rather, different practices seemed to appeal to different people. Participants said things like, "that's my favorite, the walking meditation, cuz you could do that all the time any time," "the body scan was the biggest one, and the breathing, and being in the present moment," "I do the sitting meditation a lot," and "the body scan, it was every day . . . the yoga . . . maybe every other day."

One man recalled how he benefitted from practicing the awareness of breath exercise and explained how it helped him to become more aware of his physical health, shining a spotlight on the adverse impact that smoking was having on his health:

> Oh, the breathing, though, I could kinda get with that because I never paid attention to my breath before. To have the breathing exercise, it made me aware not only do I breathe hard a lot – cuz people I'm around sometimes will be like, 'Man, why you breathin' so hard?' I won't even realize that that is me breathin' that hard, and I know it's the cigarettes.

One woman learned what she was capable of, sharing, "I didn't think that I could do yoga, 'cuz of my size, and some of my health issues. Evidently, I can." One woman's experience with

mindfulness resulted in her coming to appreciate a practice that she previously disliked. She said, "I've never been a yoga person, but that actually taught me how to really enjoy yoga because I, honestly, I hate yoga so much, but I love it now."

Practice timing and duration: Practice duration varied by participant. They reported practicing for "a minute or two," "five to ten minutes," "about 15 minutes," and up to "thirty minutes." Many participants said that they practice early in the day (e.g., "in the mornings when I wake up," and "before work early in the morning before 5:00 am"). One woman explained, "I always practice trying not to smoke first thing in the morning when I wake up. The mindfulness helped me to extend that time. I was only smoking in the evening." Another woman described the need to schedule mindfulness in order to increase the likelihood of regular practice saying, "I try to set a time aside each day, to do it, and everything, 'cuz if I don't have a time blocked out, I won't do it."

Informal mindfulness practice: Informal mindfulness practices that participants noted included using the S.T.O.P Technique (i.e., Stop, Take a breath, Observe, and Proceed), recognition of mindlessness, turning off automatic-pilot, and acting with awareness during daily life. A woman exclaimed, "I do 'STOP' all the time," and another woman agreed saying, "that stop, taking a breath, that thing, was amazing." One participant described her informal practice as, "just sitting there actually thinking about, 'Oh, I'm actually a living being, breathing right now,' rather than just going on automatic pilot."

Many participants reported engaging in informal mindfulness practices "at home" or "in my bedroom." Two participants mentioned practicing "at the gym," with one woman sharing, "after I work out, I usually just sit on my mat and just sit there for… a minute or two and just, you know, breathing and thinking." When asked about where he practiced, one man said, "mostly [at] work. It helps me in my job." Multiple participants made statements pointing to the portability of

mindfulness practice. For example, one woman said, "The mindfulness technique is something that I could do anywhere if I wanted to." Another woman's description of practicing mindfulness outdoors was quite scenic, reporting:

> Sometimes when I'm sitting out on my back porch in the morning drinking my coffee, I just sit there and I meditate. I listen to the birds, and I feel the sun on my skin. I feel the wind blowing across me.

Less scenic, but equally admirable, a woman confided, "Sometimes I just sing or go in the bathroom, do something that's gonna calm me down besides grabbing a cigarette."

Barriers to practicing mindfulness: Despite the predominantly positive reviews of MBAT, some participants appraised the practice of mindfulness itself negatively. When it came to difficulties and challenges of practicing mindfulness outside of session, some of the explanations given by participants included, "my attention span is real short," "it was just wrong timing for me . . . my mind wasn't right," "I find it boring," and "I don't have that much patience." One woman said that "it was hard for me, personally, just because I have a lot going on in my life, school, two jobs, you know. I'm always on the go." A woman admitted feeling that "this just really isn't for me. This is not really helping me. What is helping me is, put me on the [nicotine] patch."

Some participants indicated not liking specific practices such as yoga, body scan and sitting meditation. Several participants disliked yoga. As one woman explained, "a lot of people aren't the biggest fans of yoga because it's so . . . it's just, for some people . . . like hokey-pokey, you know, just kind of like a random thing to do." Others said, "you can't always just stop and do yoga," and "it's hard to get in them positions . . . I'm 62 years old." A man confessed, "the body scan was not my favorite activity," and a woman confided, "I didn't really like the sitting meditation as much. I found it harder for me to focus, personally on that one."

Future mindfulness practice

When asked about plans for future mindfulness practice, only two participants said that they did not plan to continue practicing mindfulness or that they were unsure if they would continue to practice (i.e., "I don't know," and "I can only do so much, but I'm trying. That's the only thing. I'm trying"). On the other hand, many participants indicated that they planned to continue their mindfulness practice, even if only informally. Some mentioned the formal practices that they planned to continue, "I still do the body scan", "I'm gonna continue to do the walking meditation and the breathing technique," and "I think I'll continue to do the body scans and the yoga." A few participants described the ways in which they had continued to integrate mindfulness into their lives in the month since the end of treatment. One woman said, "I've actually continued, and I continue in a sense that I'm teaching my children how to use it in other things." Another woman shared:

> Well, I have my mindfulness meditation book now, and I just bought a mindfulness coloring book over the weekend. I've still been doing yoga and trying to do the body scan, and the awareness of the breath, . . . Yeah. I want to keep doing it. I've been talking to other people about going to meditation groups.

Impressions of MBAT group sessions

Several subthemes related to participants' impressions of the MBAT group itself pertained to i) the instructor, ii) gaining social support from the group, and iii) the group atmosphere.

Instructor: While no questions were specifically asked of participants about the MBAT instructor, participants consistently noted positive evaluations of the instructor (e.g., "I loved [the instructor]," and "[the instructor] was awesome." One woman reported, "I feel like he gave us a lot of tools." Participants regularly mentioned that they appreciated the instructor's teaching style (e.g., "I think that the way it was taught with [the instructor] worked really well. Just the guided

meditations and sort of explaining the purpose of it really helped me understand it," "[The instructor] was very good at breaking things down and getting us engaged").

Social support: Perceived social support of MBAT groups was a dominant sub-theme. People discussed liking their group members and wanting to see them each week, feeling supported by others, gaining a sense of accountability and learning from others. One woman said, "I loved the sharing, I loved talking about it and listening to what other people were going through." Another woman agreed, "Just to hear [the other group members] and to see them smile each week – that made me wanna quit even more." One man shared, "it was good to be around people that had the same addiction and tryin' to take the right steps forward and quittin'." Others took comfort in knowing that their experiences and challenges were not unique. One woman exclaimed, "Some of the things I was hearing, it was like wow, I'm going through the same thing . . . I'm glad I was able to share their experience." The theme of companionship also persisted in the interviews when a woman explained, "it's nice to have that buddy system." When asked what was most helpful about the program, another woman reflected:

> That it was a group, because I think a lot of people don't want to quit smoking alone. It's feeling that, you know, how it's like smoking is a friend, and it's like you're taking a friend away, but now you have 10 more. I think that's what was really helpful about it being in a group, rather than just alone.

Participants consistently noted the accountability offered through a group. One woman declared, "I find it effective to be accountable, for people to expect me to show up, for there to be expectations for me," Another woman confided:

> I was at such a low . . . but it was like, I don't wanna disappoint my friends or my group . . . it just gave me that a little bit more encouragement to get over that huge hump that first night.

Participants reported that the group format permitted them to learn from other group members. A woman explained, "if you engage with [group members], you can come up with some great ideas on what's working for them, how you can use that to work for you."

Group session atmosphere: Participants shared both their positive and negative impressions regarding the atmosphere of the group sessions. Participants consistently reported that the atmosphere of the group sessions was one of non-judgment, openness and positivity (e.g., "The workshop is a no-judgement zone, and [the instructor] was great about that spirit of no judgment," and the atmosphere was described as "positive, welcoming, comforting"). One man recounted the openness of the MBAT group:

> We were very open in discussing a lot . . . It was really people opening up very deep . . . about their other struggles and things, that it was a mechanism that caused 'em to engage in more smoking and . . . It was very, very deep.

Conversely, themes also emerged regarding disruptive or inconsiderate behavior of other group members. One woman explained:

> The number of people that were in the group that kept their cellphones on, the cellphones pinging. They would answer while they were in class . . . I found it very distracting and it was – well, very irritating. It would make me mad, because I'm here to learn something . . . I just found it very disruptive.

Another woman complained, "there were people in the group that would monopolize conversation, and there was no way to sort of steer it to something else."

Applications for Mindfulness

Mindfulness for coping with cravings and quitting

Participants noted the ways in which MBAT helped them to cope with cravings, reduce the number of cigarettes they smoked, and successfully quit.

Managing cravings: Participants explained, "the mindfulness . . . was real helpful in dealing with – when you're trying to smoke, and dealing with the pressure, and the urges," and "I just tried to rely on the mindfulness approach to it, and just being able to sit with the trigger to smoke and waiting for it to pass." One man described using the "urge surfing" mindfulness taught in MBAT:

> When you get to the peak of the craving, what if you don't do nothin' about it? Just ride it out. You're not gonna die. It's not gonna kill you. Cuz you're craving gets right there at the peak and you say, 'I'm not gonna smoke.' It'll stay up there for a while, but then it'll go down.

Another woman explained:

> Mindfulness helped me because it helped me [with] the whole trigger thing. . . instead of running to grab a cigarette, oh, I'll just lay on the couch, and I have this nice pillow, and I would just lay there. I've never in my entire life – that would've never entered my brain to even do that.

Cutting down or quitting: Many participants who reported smoking fewer cigarettes after completing mindfulness training shared, "I've cut way down," "I've had several days without cigarettes at all," and "I'm down to four cigarettes a day from almost a pack a day." The participants who managed to quit smoking following MBAT shared accounts such as, "I can't even remember the last time I bought a pack of cigarettes," and "I've been pleased with the results. I haven't smoked since our quit day." One woman recounted how she used mindfulness to cope with challenging situations that previously would have led her to smoke:

> I never could quit smoking before… because if one of my kids called and they're like, 'Hey, Mom,' starting to cry, instantly I needed to grab - I would grab a cigarette before I even thought . . . now, because of being mindful . . . You can sit there and think, 'oh, man.

> I really want a cigarette right now.' You know what I mean? . . . but at least being able to think that through right there rather than just grabbing whatever . . . I think that's what's really important.

One man recalled his experience following a smoking lapse:

> There was a point, there was sort of a lapse. I had, two, three weeks ago, I had purchased a pack of cigarettes when I hadn't been smoking for three weeks . . . I went outside to my patio. I smoked half of it. I stopped. I looked at myself and I remember . . . [the instructor] handed out his last sheet telling us what to do if that happens. I got the pack of cigarettes. I crunched them, put them in the drain, threw them away and I felt proud ever since.

Mindfulness for managing stress and difficult emotions

Using mindfulness to cope with stress and negative emotions was a strong theme. Participants shared, "it helped me to focus and deal with stress in a positive way," "if I had a real, real stressful day, I'd do [the sitting meditation]," and "whether I was in a stressful situation or an angry situation. I do my same meditation." One participant described her approach when she noticed negative emotions rising, saying, "I'll use the breathing techniques, and meditation, and everything to try to calm myself, especially instead of reaching for a cigarette." Similarly, another woman shared, "you know how people could just irritate you during your day? I just start the mindfulness exercise." Another woman explained, "instead of me getting upset and irritated, it really brought me to a very Zen moment."

Mindfulness for other health behaviors

Unrelated to smoking, some participants mentioned using mindfulness for other unhealthy habits (e.g., "it could be used on other things like eating potato chips, which is something I shouldn't be doing, but I do. . . it helped me to cut down on a lot of bad habits"). One woman advocated for the researchers to conduct studies to investigate the usefulness of

mindfulness for other health risk behaviors, saying, "I think this program would be amazing to do with not only quitting smoking but losing weight or . . . even quitting drinking." She continued:

> If you're smoking, it's because it's giving you relaxation or it's comforting you in some way. Same thing if you're doing drugs, or alcohol, or eating, or whatever. . . It would be interesting to almost do a similar study but instead of smoking . . . do it against overeating, or drinking, or anger, just different.

Suggestions to Improve the Program

Themes regarding suggestions to improve the program included: i) suggestions for teaching mindfulness to newcomers and suggestions to newcomers for learning mindfulness, ii) ways to encourage attendance, iii) content suggestions, iv) transportation to the program, v) session scheduling and program duration, and vi) integrating technology.

Suggestions for teaching and learning mindfulness

With respect to teaching people mindfulness and getting the most out of MBAT, two sub-themes emerged. The first, relating more to the way mindfulness should be taught, was the idea that the program should explain to participants that the benefits of mindfulness transcend smoking cessation alone. For example:

> Show people the benefits of using it, like if you get in a stressful situation, if you feel yourself becoming impatient, or angry, or whatever, just stop. Be aware that this is just the moment. It's gonna pass. I think that'd be really helpful for people, and a way to incorporate it into their everyday lives.

The second suggestion, aimed more at students than instructors, was that "coming in with an open mind" is imperative for those who are new to mindfulness. A woman recommended that someone who is new to mindfulness should "figure out maybe one of the practices that you feel

that you have the least resistance towards and give that a try." Another woman said, "At least one time, give it a shot, and see how it goes" continuing, "you really gotta give forth an effort, in order to get anything out of it. If you don't' give anything, you're not gonna get anything." One woman hinted that open mindedness is important for people who may not be familiar with meditation:

> It's something different and new to – I'm not gonna say to black people, but a lot of people like 'What? Meditation?' But if you do it and you try it, you might find it soothing and calming, so I feel like it might be something new and different, but it still probably would change a person feeling about it . . . If you [do] just 10 minutes or 15 minutes, I did 10, or 15 minutes can change your whole day, because you have been in a situation to where you don't have to think about nothing. You don't have [to] do nothing. You don't have to worry about anything . . . It'll take you a long way, so I feel like meditation is a good thing. It really is.

Attendance

To encourage participation a few participants suggested that food and drinks should be provided (e.g., "if they come to the morning group have Danishes and coffee, or in the afternoon have juice or a little snack or something,"). However, many participants felt that the research team was already doing what they could to encourage attendance (e.g., "I think you guys did everything that you possibly could for the weekly participation. Calling and texting and just being encouraging and happy. Most people that were in my group liked coming because of you guys").

Content

Participants commonly suggested including scare tactics or fear appeals into the curriculum. They wanted to be reminded of the adverse effects of smoking, sharing, "I would be blunt with people, like, 'You don't want this to be the reason why you die,'" "nothing gets across like seeing a picture of the way your lungs will look if you keep on smoking," and "you guys could

get someone from the science lab to bring the black lungs in or something . . . it might actually wake up some people".

Transportation and location

Three participants expressed frustration about having to commute into downtown Atlanta to take part in MBAT. One woman said, "I thought it was the perfect program other than the drive, but you guys made that as easy as possible . . . even the free parking in the garage." One man suggested that we try harder to "help 'em out with [public transportation]." And another woman proposed:

> Maybe showing people about bus transportation getting here. I did get stuck in traffic and then lost, and unable to get here. Had I been on the bus – I don't know where it stops here, but I would've gotten here.

Session scheduling and program duration

Scheduling of sessions: Participants suggested offering more flexibility for the timing of group sessions to accommodate various schedules. Many thought the sessions should be offered on "Saturday or Sunday, so people don't miss or maybe an evening," and that the program should "offer multiple sessions and you can come in to whichever one fits your schedule." One woman explained, "if you could have evening sessions. That would help broaden the community of people who could benefit from the program."

Program duration: Suggestions to increase the length of the program were prominent across interviews. Many participants expressed that they "wish[ed] it would last longer," referring to the number of weeks that the program lasted (e.g., "I just wish as opposed to 8 weeks, it could be 12 weeks," and "I can't find any complaints or think of nothin' that can improve the program, other than it bein' longer."). A man who had cut down smoking but had not entirely quit yet

reflected, “I immediately wished that our class would’ve kept goin’ . . . I wish the groups were longer because that would help me better.”

Technology

Themes pertaining to the incorporation of technology into MBAT recurred frequently. Participants indicated that they would have liked to receive regular text messages or emails throughout the program. One woman recommended:

> You could email people, have a setup to email people daily, just something they wake up and see while they’re in the program. Just something letting people know that you are still thinking about them . . . just daily reminders, or daily text messages. Yeah, that would’ve helped a lot, the fact it keep your mind focused.

A woman advised that “maybe an automated text” could help to encourage people to practice mindfulness outside of the group sessions, even providing a sample text message, “Hey, you might think about doing a body scan.” One woman reported that she and several other participants initiated a “group text” on their own where they could share “those little affirmation[s] and support.” She explained that they “got together and texted each other and gave positive support.”

Another recurring theme pertained to the ubiquitous nature of mobile applications and participants’ opinions that they were helpful for promoting smoking cessation or mindfulness. Several participants mentioned using or downloading apps to help them with the program. For example, one man said, “everybody every day is lookin’ for apps to put on their phone, new games and stuff like that.” One woman was adamant, saying:

> As far as what to do to improve the class, I think this was major, this app right here, and I would include it in your study. Someone in the class told us about it. It is incredible.

The idea of using YouTube or another site to post online instructional videos for participants to access outside of group was another recurring theme. One woman explained that, “in this day and

age, everybody has cell phones, so maybe we're not all in a classroom, but we can all stop and look at a YouTube video and watch how it works." When prompted for suggestions for teaching mindfulness one man said, "only thing I can think of is Internet, websites or some type of a YouTube thing or somethin'." One woman shared an insightful observation regarding learning to practice yoga in a group setting and the way she thought that technology could be helpful:

> People probably get embarrassed to do it in group, too. That's something that's, personally, it's like you want to be alone when you're doing that because some people really can't do it, you know? But, that would be really helpful for later, like a YouTube that only we can access, or something like that, you know?

Chapter V: Discussion

This study aimed to learn about the experiences of a diverse group of people who participated in an eight-week smoking cessation program that incorporated mindfulness-based strategies (i.e., MBAT). The sample included 28 adult participants with varying levels of education and income, and representing different racial and ethnic backgrounds. Overall, participants noted positive experiences with MBAT and reported benefiting from incorporating mindfulness practice into their daily lives. Suggestions for improvement included ways of increasing accessibility and incorporating technology.

Experiences with Mindfulness and MBAT

Participants' perceptions of mindfulness and MBAT were overwhelmingly positive. For example, participants talked about how much they liked participating in MBAT and discussed looking forward to coming to the group sessions every week. Participants reported that they enjoyed practicing mindfulness on their own with many people discussing the specific formal and informal practices they most enjoyed doing. Participants discussed the ways in which they found mindfulness to be helpful describing the ways in which mindfulness helped them throughout the day, at work, with cravings and in dealing with stress and negative emotions. Participants felt that they benefited from taking part in MBAT and that it helped to equip them with a new skill set that they found to be valuable. Some participants' enthusiasm for the program was made evident through their reports of recommending the program to others. When participants were asked what they disliked about the program, most reported not disliking anything. Two participants voiced complaints about the repetitive aspect of the session content.

Participants' descriptions of mindfulness in their own words signified that they had a good grasp of the concept. Similar to the qualitative findings of the study conducted by Spears and colleagues (2017), recurring themes amongst participants when describing the concept of

mindfulness were present-focused awareness and attentional control which are fundamental definitions of mindfulness (Kabat-Zinn, 2005). Similarly, in a study of smokers' experiences learning yoga for smoking cessation, participants reported gaining increased attention to their bodies and more awareness of the toll smoking was having on their physical health (Rosen et al., 2016).

Regarding the practice of mindfulness between sessions, participants reported practicing mindfulness both formally and informally. Participants' preferred practices (e.g., sitting meditation, focus on breath, guided meditation, walking meditation, yoga, body scan, etc.) varied. The body scan and walking meditation were popular, but most participants who practiced mindfulness formally mentioned practicing more than one form. The S.T.O.P exercise also received enthusiastic reviews, as it was cited as being highly accessible to busy participants. Many participants noted intentions to continue to practice mindfulness in the future. However, some participants noted barriers to mindfulness practice, including difficulties focusing, boredom, having a short attention span, or not being in the right frame of mind to give mindfulness an authentic try.

With respect to the group MBAT sessions themselves, themes emerged relating to the instructor, social support, and the atmosphere of the groups. The MBAT instructor received glowing evaluation from the study participants. Participants appreciated that the instructor provided them with multiple approaches for practicing mindfulness, including simple step-by-step instructions, and that he accommodated different learning styles. The group atmosphere was described as one of non-judgment, openness and acceptance, with multiple participants crediting the instructor with cultivating this positive environment. The idea that participants obtained valuable social support from the group sessions was a strong and recurring theme. Participants discussed bonding with other group members, obtaining accountability from the group, and feeling

a sense of comfort or belonging due to shared experiences. These findings are consistent with other studies that have found group-based mindfulness programs to promote social support and facilitate interpersonal relationships (Schellekens et al., 2017). This is reassuring given that most interventions using mindfulness have employed a group-based format.

Participants noted that practicing mindfulness was useful in managing cravings, and several reported that mindfulness helped them to quit smoking or reduce their smoking frequency. Although participants were not specifically asked about other applications for mindfulness, strong themes emerged regarding other ways in which participants used mindfulness in their daily lives. Participants commonly reported using mindfulness to manage stressful situations and difficult emotions. This is consistent with findings of other qualitative studies that also reported applications of mindfulness for reducing stress (Rosen et al., 2016; Spears et al., 2017). Because perceived stress and negative emotions are strong triggers for smoking (Baker, Piper, McCarthy, Majeskie, & Fiore, 2004; Brandon, 1994; Gallo et al., 2014; Webb & Carey, 2008), and implicated in the maintenance of smoking behavior (Bryant, Bonevski, Paul, O'Brien, & Oakes, 2011; Slopen et al., 2012, 2013; Stein et al., 2008) it is reassuring that participants found mindfulness to be a feasible alternative to smoking for managing stress. Indeed, conceptual models of ways in which mindfulness reduces addictive behavior center on benefits of mindfulness for reducing stress as well as weakening associations between stress and smoking or other addictive behaviors (Adams et al., 2015; Brewer et al., 2013).

Suggestions for Improving MBAT

When probed for ways to improve the program, participants shared their ideas for effective strategies to teach mindfulness to people who are unfamiliar with the practice. The themes that prevailed were emphasizing the usefulness of mindfulness, the advantages of practicing it and encouraging learners new to mindfulness to be open-minded. Participants felt that the usefulness

of mindfulness extended beyond quitting smoking and found applications for mindfulness throughout their lives. They felt that informing participants about the practicality of mindfulness could help to broaden its appeal and reduce resistance to learning about mindfulness. Open-mindedness came up on multiple occasions and was recommended for newcomers to mindfulness. Participants suggested that instructors really emphasize the importance of keeping an open mind in effort to increase what participants get out of their MBAT training.

Additional suggestions for improving the program included content suggestions, logistical elements, and matters related to the duration or scheduling of the group sessions. While nearly all participants reported appreciating the positive, non-judgmental atmosphere of the MBAT sessions, the predominant content suggestion for MBAT was that scare tactics (i.e., fear or threat appeals) be incorporated to remind participants about the adverse effects of smoking. There is evidence to support the effectiveness of fear or threat appeals in the literature (Cho et al., 2018; Witte, 1992) and future researchers might wish to include fear appeals in their studies. However, some evidence suggests negative consequences of fear appeals (e.g., increased anxiety, which could further trigger urges to smoke) (Hastings, Stead, & Webb, 2004).

Some participants noted transportation difficulties, particularly with commuting into downtown Atlanta. The free parking that was offered was acknowledged to be helpful at mitigating the frustration of the drive into the city. Some participants recommended that the research team encourage participants to use public transit. As part of the study protocol, all participants were asked how they would be travelling to the study site and provided with tailored and detailed directions over the phone as well as by email (e.g., maps and step-by-step instructions). It might be prudent for future researchers to consult with participants regularly about their mode of transportation and engage in problem-solving. Another option might be to offer public transit passes to participants to encourage the use of public transportation. These strategies

could potentially help to improve attendance and decrease attrition in studies conducted in high-traffic volume or metropolitan areas.

Participants also made suggestions about study scheduling. Many requested evening or weekend sessions to accommodate day jobs. Providing participants with multiple scheduling options for MBAT was also suggested to facilitate attendance. Due to the logistics of managing two distinct treatment groups each week, providing multiple scheduling options was not feasible in this double-blinded study. However, conducting weekend or evening sessions should be explored in future programs.

Participants advocated for technology to be incorporated into MBAT as a way to improve the program. As mentioned above, the other treatment arm of this study employed the use of an automated mindfulness-based text messaging program designed to provide participants with between-session reminders to practice mindfulness, encouragement, tips and support. It is compelling that MBAT participants, who did not receive these text messages, found ways to incorporate text messaging and other forms of technology into the program independently. Numerous participants had downloaded smoking cessation or mindfulness applications on their smartphones and some participants reported exchanging phone numbers with other group members, starting their own group text messages to provide encouragement to one another. Participants reported the mobile phone applications and group text messages to be helpful and encouraged the researchers to include text messages or mobile applications in the study protocol. Technology was also suggested as a way to promote mindfulness practice through the use of sites such as YouTube that might facilitate the viewing of instructional mindfulness videos and guided practices outside of group. One woman pointed out that some people could feel embarrassed practicing mindfulness with others and thought that being able to practice on one's own and in private could facilitate mindfulness practice and associated benefits.

Limitations

Because there were small sub-samples for various racial/ethnic backgrounds (i.e., 9 White, 14 Black/African American, 1 Asian, 4 more than one race), it was not possible to draw conclusions about how mindfulness is perceived by specific subgroups. Additionally, because the study sample consisted of treatment-seeking adults, it is not clear whether participants' experiences would be similar to or different from non-treatment seeking smokers. Moreover, the study excluded individuals with current depression, active substance dependence, and psychotic disorders. Although this is common in mindfulness studies (given that it is unclear whether mindfulness training is appropriate for people with certain conditions including active psychosis), research is needed to evaluate the perceived helpfulness of mindfulness training among individuals living with mental illness. Adults with mental health conditions exhibit disproportionately high smoking prevalence and associated morbidity and mortality (Callaghan et al., 2014; Drope et al., 2018; Schroeder & Morris, 2010; Tam, Warner, & Meza, 2016). Despite limitations, this study is strengthened by a socioeconomically and racially/ethnically diverse sample and strong MBAT attendance.

Future Directions

Future studies should investigate whether differences in perceptions of and experiences with mindfulness differ by race/ethnicity or SES and whether suggestions for MBAT adaptations might also differ according to one's background. Along the same lines, it would be interesting to investigate whether particular subgroups experience specific barriers to mindfulness, such as stigma or negative beliefs about mindfulness, as well as cultural or environmental factors that might make practicing mindfulness difficult. For example, Spadola and colleagues (2017) conducted a qualitative investigation to ascertain the reasons for the low involvement of racial and ethnic minorities and low-income individuals in yoga. The researchers identified several barriers,

including doubts about yoga's ability to provide them with the level of intensity in a workout that they desired, beliefs that yoga would not help them to lose weight, and preferring other forms of exercise to yoga (Spadola et al., 2017).

A longer follow-up period (i.e., longer than 30 days post-treatment) could also provide useful information about the continuation of mindfulness practice among MBAT completers. Future research should examine: a) whether individuals who indicated they would continue to practice mindfulness did in fact continue (and what factors facilitate long-term practice), and b) longer-term effects of mindfulness practice on smoking abstinence and other indicators of well-being.

Conclusions

Several studies support the efficacy of mindfulness treatment for smoking cessation (Brewer et al., 2011; Davis, Goldberg, et al., 2014; Oikonomou et al., 2016), and the current study provides rich information about how diverse individuals experience mindfulness training as they quit smoking. Overall, participants reported positive experiences with MBAT and noted that mindfulness was helpful in their efforts to quit smoking. They noted practicing mindfulness both formally and informally, and found that in addition to managing cravings, mindfulness was useful for coping with stress and difficult emotions. Social support from the MBAT group and the non-judgmental atmosphere were viewed as particularly helpful. Participants recommended incorporating technology (e.g., text messaging, apps, videos) into the program. They also suggested more scheduling flexibility and wished the program lasted longer. Overall, MBAT appears to be a highly acceptable and useful program for promoting smoking cessation and quality of life among diverse adults.

Appendix

Table 1
Participants Characteristics

Age (*SD*)	46.07 (*12.15*)
Gender (% female)	60.7%
Race/Ethnicity	
Black/African American	50.0%
Caucasian	32.1%
Asian	3.6%
More than one race	14.3%
Hispanic/Latino	3.6%
Employment	
Regular full-time work (≥ 40 hours/week)	25.0%
Regular part-time work (< 40 hours/week)	32.1%
Unemployed – currently seeking work	7.1%
Unemployed – currently not seeking work	7.1%
Student	7.1%
Retired	17.9%
Unable to work or disabled	3.6%
Education	
Less than High school degree	14.2%
High school diploma or GED	25.0%
Some college/technical school	17.9%
Associates degree	17.9%
Bachelor's degree	14.3%
Graduate Degree	10.7%
Annual Household Income	
≤ $12,000	28.6%
$12,001 - $18,000	7.1%
$18,001 - $24,000	7.1%
$24,001 - $30,000	14.3%
$30,001 - $36,000	3.6%
$36,001 - $42,000	7.1%
$42,001 - $54,000	7.1%
$54,001 - $60,000	0%
$60,001 - $84,000	14.3%
> $84,000	10.7%
Below poverty threshold	39.3%
Marital Status	
Single	60.7%
Married	14.3%
Divorced	14.3%
Widowed	3.6%
Cohabitating	3.6%
Separated	3.6%
Cigarettes Smoked Per Day (*SD*)	19.59 (*9.52*)
Number of Years of Daily Smoking (*SD*)	27.75 (*14.18*)

Note. Frequency and percentages are described for categorical variables. Means and standard deviations are provided for continuous variables.

Table 2
Recurring Themes and Subthemes

Themes	**Subthemes**
Participant Impressions of MBAT and Mindfulness	Participants' understanding of mindfulness • Present-focused awareness • Attentional control Helpfulness of MBAT and mindfulness • Liking and benefitting from mindfulness • Recommending MBAT to others Dislikes/difficulties with MBAT Between-session mindfulness practice • Formal mindfulness practice • Practice timing and duration • Informal mindfulness practice • Barriers to practicing mindfulness Future Mindfulness Practice Impressions of MBAT group sessions • Instructor • Social support • Group session atmosphere
Applications for Mindfulness	Mindfulness for coping with cravings and quitting • Managing cravings • Cutting down or quitting Mindfulness for managing stress and difficult emotions Mindfulness for other health behaviors
Suggestions to Improve the Program	Suggestions for teaching and learning mindfulness Attendance Content Transportation and location Session scheduling and program duration • Scheduling of sessions • Program duration Technology

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