

**APPETITE AWARENESS TRAINING TO PREVENT OBESITY IN AFRICAN-
AMERICAN WOMEN**

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ABSTRACT

African-American women have the highest rates of obesity within the United States. Obesity is of public health significance, and is associated with numerous co-morbid conditions, including hypertension, diabetes, and various cancers. Behavioral weight loss interventions have not been as effective in African-American women who are obese compared to their white counterparts. Untreated eating behaviors could be one factor which may contribute to obesity and poorer outcomes in weight loss treatment. The objective of this study is to evaluate participant satisfaction with Appetite Awareness Treatment (AAT), a cognitive-behavioral intervention for binge eating, and generate information to improve its effectiveness among African-American women.

African-American women, aged 18-70, with reported binge, overeating, or loss of control of eating behaviors, were invited to attend a focus group discussion, following participation in an eight-week community-based AAT intervention. Session content was recorded using a digital audio recorder and transcribed. Data were analyzed by use of open coding and constant comparison. Themes were generated to describe the experience of participating in the intervention.

Seventeen women participated in three focus group discussions to evaluate their experience in AAT. Pertinent themes included the following: satisfaction, cultural relevance, lessons learned, and aspects of the intervention they would like to change. AAT was satisfactory, and participants found it valuable to learn more about listening to biological signals of hunger and satiety, and to receive group support from other African-American women. Suggested changes include improving the paper self-monitoring form, increasing the length of the intervention, and providing food in the sessions as part of the intervention instruction.

In conclusion, AAT is acceptable, and provides eating behavior instruction that was culturally relevant to participating African-American women. Future research should examine the potential of AAT to improve disordered eating behaviors, and prevent further weight gain in this population.

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1.0 INTRODUCTION

Over 65% of adults in the United States are overweight or obese; however, African-American women are disproportionately represented in this group. Researchers and healthcare professionals use the body mass index (BMI) to calculate obesity; adults with a BMI between 25 and 29.9 are categorized as overweight, and adults with a BMI ≥ 30 are obese. Based on these criteria, 82.6% of African-American women are considered overweight or obese (Flegal, Carroll, Kit, & Ogden, 2012). When the prevalence estimates are restricted to obesity (Class 1, 2 or 3), the over-representation of African-American women is more pronounced; the prevalence of obesity among non-Hispanic African-American women is significantly higher than rates for non-Hispanic whites, black men or Hispanic men (57.2% vs. 38.7% in non-Hispanic white women, 46.6% in Hispanic women, 35.4% in white men, 38.2% in black men, and 38.8% in Hispanic men) (Flegal, Kruszon-Moran, Carroll, Flyer, & Ogden, 2016).

African-American women who are overweight (BMI ≥ 25) or obese (BMI ≥ 30) are at risk for developing multiple physical health conditions that include type 2 diabetes, breast cancer, and cardiovascular disease (CVD) (American Heart Association, 2013). CVD risk increases with unhealthy lifestyle habits, the development of overweight/obesity, and diabetes. Currently, 48.9% of African-American women have CVD, which is the leading cause of death in this population (American Heart Association, 2013). Moreover, the risk of type 2 diabetes is

approximately two times higher in African-Americans than in European Americans (Cheng et al., 2012).

Various reasons may explain the high prevalence of obesity among African-American women. Common individual contributors include a greater consumption of high fat, high caloric-density foods (Boyington et al., 2008); a lower likelihood of being physically active, and lack of time and motivation directed toward behavior change to achieve weight loss (Barnes et al., 2007). Additionally, African-American women experience less social pressure to lose weight, thereby affecting motivation to pursue long-term weight management strategies (Boyington et al., 2008).

African-American women who want to lose weight may encounter additional barriers if their current income is below the poverty level (Gaines, 2010). According to recent census estimates, 25.8% of African-Americans are currently living below the federal poverty line (Macartney, Bishaw, & Fontenot, 2013). Over the past 20 years, researchers have consistently found an inverse relationship between obesity and socioeconomic status (SES) (McLaren, 2007; Sobal & Stunkard, 1989). SES, often defined as a combination of years of education, gross annual income, and employment, can influence an individual's likelihood to become overweight or obese as early as childhood (James, Fowler-Brown, Raghunathan, & Van Hoewyk, 2006). The relationship between SES and obesity is especially startling among women. Fully 42% of those with incomes below 130% of the poverty level are obese, compared with only 29% of women at or above 350% of the poverty level (Ogden, Lamb, Carroll, & Flegal, 2010). Among African-American women, 54.7% of those with incomes below 130% of the poverty line are obese (Ogden, Lamb, Carroll, & Flegal, 2010).

Despite the abundance of resources committed to addressing obesity, researchers are still in search of an effective intervention that will demonstrate long-term change. Behavioral treatment of obesity has provided a necessary framework for weight-loss interventions for more than 20 years (Burke & Wang, 2011). An important concern, however, is that most clinical weight loss trials have not had an adequate representation of African-American women in the sample (Fitzgibbon et al., 2012; Samuel-Hodge et al., 2012). Moreover, when these women have been included, their consequent weight loss is less than what is observed in white participants, despite extensive cultural tailoring seen in recent trials (Fitzgibbon et al., 2012; Wingo, Carson, & Ard, 2014).

Recently, a growing body of research has explored the social environment and how it influences the ability of African-American women to engage in recommended weight loss practices (Fitzgibbon et al., 2012). As researchers seek to understand ethnic differences in obesity, more scholars are realizing that individuals who live in marginalized and underserved communities may be less likely to pay attention to weight gain, experience more significant stressful life situations, and have a reduced likelihood to engage in healthful weight control practices (Fitzgibbon et al., 2012; Jeffery & French, 1996).

African-American women must manage their weight within the context of societal racism, discrimination, and gender inequalities (Everett, Hall, & Hamilton-Mason, 2010). At a 2007 meeting of the African-American Researchers Collaborative (AACORN), investigators encouraged the use of creativity in intervention design to address the complex nature of historical trauma African-Americans have faced and how it relates to their eating choices (Figure 1) (Kumanyika et al., 2007). While African-Americans have been focusing on managing

challenging social concerns, overeating may have served as an acceptable coping mechanism (Kumanyika et al., 2007).

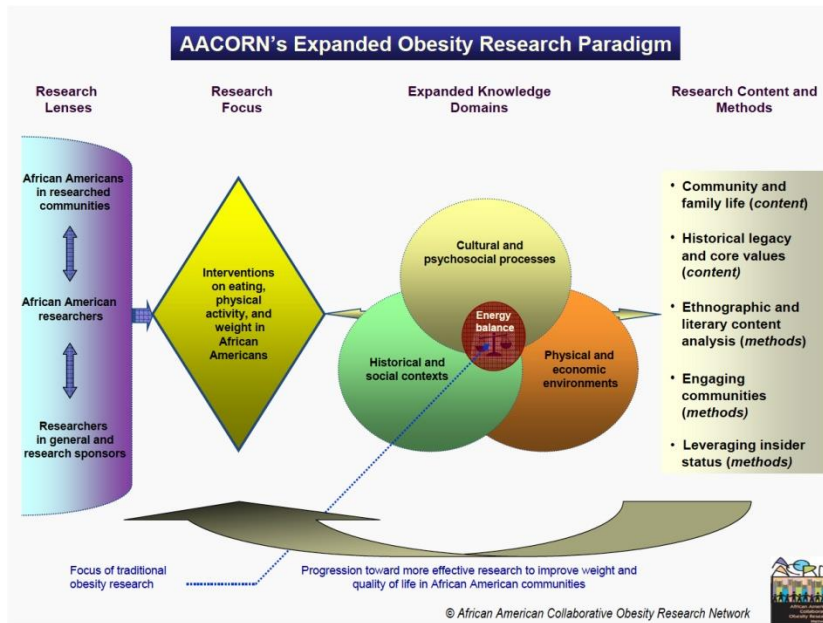


Figure 1. AACORN'S Expanded Obesity Research Paradigm
(Kumanyika, et al., 2007)

The purpose of this paper is to report the acceptability of an eight-week Appetite Awareness Treatment (AAT) Program conducted in a community-based sample of African-American women who are overweight or obese, and report some binge, overeating, and/or loss of control eating episodes. Focus group methodology was used to evaluate the AAT program. The first chapter describes the prevalence of obesity in African-American women, and the contributing factors. Chapter two provides an overview of behavioral weight loss interventions conducted among African-American women who are overweight or obese. Additionally, the chapter also explores binge eating behaviors within this population. Chapter three presents the results of the focus group research investigation, providing a discussion and implications for future research based upon the results of the study. And finally, chapter four provides a conclusion, offering implications for future research.

2.0 BACKGROUND

2.1 BEHAVIORAL INTERVENTIONS TO ADDRESS OVERWEIGHT AND OBESITY

The following section will examine the attempts made by researchers to address overweight and obesity in African-American women. Over the last 30 years, researchers have been working diligently to find a solution to excess weight among African-American women (Bronner & Boyington, 2002; Fitzgibbon et al., 2012). Weight loss interventions have focused on nutrition counseling, exercise, daily food intake, activity records, behavior modification techniques, and goal setting (Bronner & Boyington, 2002). There have been weight loss models with cultural adaptations, models that base their work in communities, and models that implement faith-based interventions. Traditionally, Social Cognitive Theory, the Health Belief Model, and behavioral self-management (no defined theoretical framework) have provided a basis for interventions to shape treatment for African-American women (Fitzgibbon et al., 2012). This section will highlight the different approaches to designing behavioral interventions, and their strengths and limitations. This section will end with a summary of the interventions and suggestions for the future.

2.1.1 Cultural Tailoring and Leveraging

As researchers have attempted to alleviate health disparities, many have found value in designing interventions that are culturally tailored. This term falls under the umbrella of cultural competence, used to describe the alignment of behaviors, attitudes, and policies that enable professionals and systems to be effective in cross-cultural interactions (Fisher, Burnet, Huang, Chin, & Cagney, 2007). Recently, researchers have attempted to further define cultural competence, by encouraging an increased focus on cultural leverage. Cultural leverage is a "focused strategy for improving the health of racial and ethnic communities by using our cultural practices, products, philosophies, or environments as vehicles that facilitate behavior change of patients and practitioners" (Fisher et al., 2007, p.244).

Several researchers have incorporated cultural leverage in their interventions to help African-American women lose weight. Fitzgibbon, Stolley, Ganschow, et al. (2005) designed a faith-based weight loss intervention with cultural tailoring for African-American women. The researchers were intentional about integrating African American cultural values of family commitment, respect for ancestors, and the importance of strong verbal communication skills. Furthermore, the intervention focused on training participants on healthier ways to prepare cultural foods, provided child care, and included discussions on how to manage multiple family responsibilities.

Stolley, Sharp, Oh, and Schiffer (2009) conducted focus groups with African-American breast cancer survivors participating in a weight-loss intervention and utilized this information to design a culturally sensitive intervention for weight loss with African-American women. Their cultural considerations included the importance of food within the culture, barriers to regular physical activity, creating an atmosphere that facilitated social support, including religion and

faith, and the challenges these women face in juggling multiple caretaking roles. These two studies serve as examples of how researchers have chosen to use cultural leverage in tailoring for African-American communities.

One of the most recent culturally-tailored behavioral weight loss trials designed for African-American women is the ORBIT trial, facilitated by Dr. Marian Fitzgibbon (Fitzgibbon et al., 2010; Fitzgibbon et al., 2008). This trial was designed to test the efficacy of a six-month weight loss intervention, followed by 12-month weight loss maintenance intervention for black women who are obese (Fitzgibbon et al., 2010). The 18-month behavioral weight loss trial included an intervention team of African-American women, twice-weekly sessions, encouragement to develop a low-fat and high-fiber diet, individual motivational interviewing sessions, and a support group during the maintenance phase of the trial. During the twice-weekly sessions phase of the trial, participants attended a didactic session and an aerobics portion, both designed to help participants incorporate behavioral lifestyle changes. At 18 months, participants randomized to the intervention group had lost significantly more weight than control participants (-2.83 kg). While the participants did lose weight, researchers concluded that there is still much to learn about weight loss among African-American women. While helpful, behavior skills training may not have been enough to overcome an environment with components resistant to long-term weight loss (Fitzgibbon et al., 2010).

The most recent form of cultural tailoring has been to change weight management efforts with African-American women to those of the prevention of weight gain versus weight loss. This approach understands that African-American women are traditionally more tolerant of heavier body weights and overall less body weight dissatisfaction (Foley et al., 2012). Furthermore, as weight loss with this population has typically been a challenge, focusing on weight gain

prevention may improve intervention engagement and enhance intervention outcomes (Foley et al., 2012). The SHAPE program (Foley et al., 2012), used Social Cognitive Theory, and was designed to target mastery experiences, social modeling, social persuasion, and emotional reactions, all influencing self-efficacy. The intervention contains five components: obesogenic behavior change goals, self-monitoring, tailored skills training materials, 12 interpersonal counseling calls from a dietitian, and a 12-month YMCA membership. Participants were followed over 18 months, with study visits at baseline, 6, 12, and 18 months. At 12 months, the weight change in the intervention group ($-1.0 \pm .5$ kg) was greater than in the usual care group ($.5 \pm .5$ kg) (Bennett et al., 2013). Although the weight loss was modest, the investigators found that intervention participants maintained a significantly greater weight loss difference (-1.7 kg) at 18 months relative to usual care.

2.1.2 Interventions using Behavioral Weight Loss Treatment and Lifestyle Intervention

Standard Behavioral Treatment and Lifestyle Intervention Weight Loss Treatment are two of the most successful modes of weight loss intervention in use today. Standard behavioral treatment (SBT) has been shown to be efficacious in achieving successful weight loss among those who are overweight and obese (Burke & Wang, 2011). The focus of SBT is to encourage individuals to reduce their body weight by at least 10%, consume a low-calorie, low-fat diet, exercise at least 150 minutes per week, and learn behavioral skills that encourage self-monitoring and goal setting (Burke & Wang, 2011; Pinto, Gokee-Larose, & Wing, 2007). Standard behavioral treatment has been shown to produce a clinically significant weight loss of 5-10% of initial body weight (Burke & Wang, 2011).

Lifestyle Intervention Weight Loss Treatment, a goal-based form of behavioral intervention, has been most commonly associated with the success of the Diabetes Prevention Program (DPP), a 27 site randomized clinical trial designed to prevent the onset of diabetes with high-risk individuals (Diabetes Prevention Program Research, 2002). This program used the following methods: individual case management, frequent individual contact, a 16-session core curriculum, supervised physical activity sessions, a flexible maintenance intervention, individualization program to increase adherence, materials tailored for ethnic diversity, and a network of feedback and clinical support (Diabetes Prevention Program Research, 2002). This clinical trial included 45% racial and ethnic minorities, and more specifically, 204 African-Americans, or approximately 18.9% of the sample (Diabetes Prevention Program Research, 2002). Information about gender by race and ethnicity was not provided.

Participants were encouraged to exercise approximately 150 minutes per week, and lose 7% of their body weight by the end of the trial core curriculum (Diabetes Prevention Program Research, 2002). Participants were very responsive to meeting physical activity goals; 58% of African-Americans achieved the exercise goal compared with 60% of Caucasian participants. In addition, approximately 30% of African-Americans participating in the trial achieved the 7% weight loss goal, compared with approximately 40% of Caucasian participants. Overall, the results of the DPP resulted in a 58% reduction in the rate of diabetes (Diabetes Prevention Program Research, 2002).

Because of the success of the Diabetes Prevention Program, various researchers have attempted to further its implementation with African-American women. The Weight Wise Program (Samuel-Hodge et al., 2009) adapted the DPP intervention materials to include less writing, and more small-group rather than individual activities. For activities involving food

demonstration, all ingredients were purchased at stores that participants could access easily. Furthermore, an incentive program helped to provide motivation to attend, count calories, meet program goals for physical activity, and maintain good records. Participants were encouraged to lose ≥ 4.5 kg over the duration of the trial. Results demonstrated that participants had average weight changes of -3.7 kg, and systolic blood pressure changes of -6.5mm Hg. Approximately 19% lost between 3-7 % of their initial body weight (Samuel-Hodge et al., 2009).

Another intervention focused on the relationship between chronic stress and weight management efforts for African-American women, a combined lifestyle intervention with stress management tools (Cox et al., 2012). This intervention used the DPP intervention and added instruction on stress management techniques, providing in-class practice and instructions for self-monitoring of stress during the next week (Cox et al., 2012). Stress management techniques included relaxation and behavioral methods, and cognitive strategies, all designed to address the chronic stress often seen with African-American women. For this three-month trial, the researchers were able to retain 86% of the sample, and participants who were in the lifestyle and stress intervention group lost approximately 2.7 kg of weight. Despite the lack of clinical significance of weight loss outcomes between the intervention and control group, this intervention demonstrated the feasibility of including stress management with future weight-loss trials (Cox et al., 2012).

2.1.3 Interventions in Primary Care Clinics

Several weight management interventions have taken place in primary care clinics and have focused on predominantly African-American populations (Bennett et al., 2013; Davis Martin et al., 2006; Foley et al., 2012; Kumanyika et al., 2012). Primary care clinics are optimal sites for

recruitment and intervention delivery due to accessibility, inclusion of primary care physicians (PCP), and the ability to recruit low-income African-American women, a group that traditionally is difficult to retain in interventions (Davis Martin et al., 2006). The investigators used physicians to provide tailored health recommendations during monthly outpatient visits (Davis Martin et al., 2006) and as part of a low - intensity intervention (Kumanyika et al., 2012). Specific intervention components ranged from having a team of health professionals encouraging participants to make healthier food and physical fitness choices (Davis Martin et al., 2006), using the DPP intervention materials and a lifestyle coach, (Kumanyika et al., 2012) or an internet-based behavioral weight-loss intervention (Bennett et al., 2013; Foley et al., 2012). Instead of commonly used group intervention sessions, primary care interventions were individually based and focused on the strength of the relationship between the participant and the PCP, health educators, and e-health individualized Internet program. One-year weight loss in these intervention modalities was modest and consistent with commonly reported losses in earlier trials. In the Davis Martin (2006) trial, mean intervention weight loss was -2.0kg, and -1.61 kg within the Kumanyika et al. (2012) trial. Within the Bennett intervention, participants lost -1.03 kg.

Researchers noted that primary care clinics are excellent sites in which to recruit racial and ethnic minorities, as the primary care physician is typically included and the feasibility of conducting interventions in these sites has been demonstrated (Davis Martin et al., 2006; Kumanyika et al., 2012). However, weight loss, while achieved, remains difficult and did not differ from the findings of previous trials (Davis Martin et al., 2006; Kumanyika et al., 2012). Moreover, interaction with the e-health intervention was less than desired, and more work is

needed to address the needs of low income individuals/families participating in the trial (Bennett et al., 2013).

2.1.4 Spiritually-Informed Weight Loss Interventions

Some behavioral interventions have included elements of spirituality in either their design or the delivery of the intervention. Four of the interventions were housed within a church setting (Fitzgibbon, Stolley, Ganschow, et al., 2005; McNabb, Quinn, Kerver, Cook, & Karrison, 1997; V. G. Parker, Coles, Logan, & Davis, 2010; Yanek, Becker, Moy, Gittelsohn, & Koffman, 2001), while the other was implemented within a community setting (Djuric et al., 2009). When incorporated into an intervention, spirituality is either present actively (involving principles or beliefs) or peripherally (using spiritually-influenced sites). Two of the interventions chose to hold their treatment sessions at local churches, with only one choosing to just involve spirituality peripherally.

McNabb et al. (1997) recruited 39 African-American women and over 14 weeks, provided 90 minute sessions encouraging participants to reduce dietary fat, increase fiber intake, and increase physical activity. Content was delivered in a small group format and community educators (lay educators within the church) facilitated intervention adherence. Spirituality was not directly involved with the intervention. Participants in the intervention group achieved a 5% weight loss, while those in the control group gained additional weight (1%).

Parker et al. (2010) recruited 35 African-American women from two rural churches in South Carolina, and offered a 10-week group intervention, in weekly 1.5 hour sessions, providing education about dietary practices, physical activity, and discussing concerns with health providers. Two different group formats were used: curriculum with spirituality (scripture

verses were added) and curriculum without a spiritual aspect. Participants in both groups achieved weight loss between one and three pounds over 10 weeks; analyses were unable to detect differences between groups.

The three other interventions conducted their treatment within the community. Djuric et al. (2009) recruited 31 African-American survivors of breast cancer and provided 18 months of dietitian-led phone counseling and Weight Watchers™ coupons. Six months into the intervention, participants were randomized to either receive counseling that incorporated spirituality or not. Results indicate that most of the weight loss achieved occurred during the first six months. Spirituality did not seem to influence weight loss but did positively impact health and spiritual well-being.

Similar results were found in the work of Yanek et al. (2001) and Fitzgibbon et al. (2005), as both reported the positive influence of spirituality, despite little change in weight. , Yanek et al. (2001) examined the impact of three interventions: standard behavioral group (SI), behavioral with spiritual component, and the control group with the non-spiritual component among the 529 African-American women who enrolled in the 20-week community-based trial. SI intervention components included 20 weeks of sessions led by health educators, with each session including a weigh in, group discussion, and nutrition education module. Intervention components were the same with the spirituality group, except for the addition of group prayers and health messages enriched with scripture. The control group received self-help material. At 12 months, researchers reported weight loss was 1.1 kg for all groups together.

In the work of Fitzgibbon et al. (2005), researchers randomized 59 women to either a faith-based or non-faith-based weight-loss intervention group. Both groups received an intervention that talked about daily self-monitoring of food intake, physical activity, and social

support. The faith-based weight-loss intervention incorporated scriptures each week, and had a group leader who had a thorough knowledge of the Bible. Those in the group with the spiritual component lost 2.6 kg compared to 1.6 kg lost in the group with the non-spiritual intervention. However, despite the apparent impact, the difference in weight change between the two groups was not statistically significant.

Inclusion of spirituality appears to be of some benefit to African-American women participating in weight loss interventions, but researchers have not determined how this cultural strength can cause significant weight changes within the population.

2.1.5 Community-based Weight Loss Interventions

To reach a broader segment of the population, researchers often initiate their investigations within a community setting. This provides an opportunity for participants to associate research participation with a familiar location, rather than a clinical setting (McNabb et al., 1997).

One of the most important outcomes of the seven community interventions was the significant weight loss that followed. The research literature reports that African-American women have historically lost less weight than white participants when included in behavioral weight-loss interventions (Fitzgibbon et al., 2012). However, in these selected community trials, the weight loss achieved by some of the African-American participants ranged between 2.0kg (Kennedy et al., 2009) and 5 kg (McNabb et al., 1997). Several of the community interventions were held at community health centers (Befort, Thomas, Daley, Rhode, & Ahluwalia, 2008; Samuel-Hodge et al., 2009) while others took place at community centers (Domel, Alford, Cattlett, & Gench, 1992; Kennedy et al., 2009), churches (McNabb et al., 1997), and YMCAs (Annesi, 2007; Fitzgibbon, Stolley, Ganschow, et al., 2005).

Some of the intervention components included individual and group sessions, provision of fruits, vegetables and nutrition education (Annesi et al., 2007; Kennedy et al., 2009), lay/peer health advisors (McNabb et al., 1997; Kennedy et al., 2009) and multiple meeting times for intervention sessions (Fitzgibbon et al., 2005; Samuel-Hodge et al., 2009). Two of the interventions recruited low-income African-American women to participate in structured weight loss treatment (Befort et al., 2008; Samuel-Hodge et al., 2009). Both interventions were adapted from the DPP and conducted 16 weekly group sessions with participants. Samuel-Hodge et al. (2009) recruited 58 AA women and held intervention sessions four times per week to accommodate schedules of participants. Befort et al. (2008) recruited 44 African-American women and offered 90 minute weekly intervention sessions to examine whether adding motivational interviewing impacts treatment adherence. Unfortunately, attrition was high; approximately 22% (Befort et al., 2008) and 12% (Samuel-Hodge et al., 2009) of participants did not complete the studies. Researchers concluded that women with less education were less likely to stay in the study and self-monitoring was less successful with this population. However, as attendance is predictive of weight loss, scheduling sessions throughout the week was helpful, a noteworthy finding that should be considered in future studies (Befort et al., 2008; Samuel-Hodge et al., 2009).

2.1.6 Interventions Designed for Health-Related Concerns

Several interventions have engaged African-American women who had been diagnosed with either breast cancer or hypertension (Banks-Wallace, 2007; Fitzgibbon, Stolley, Schiffer, et al., 2005; Greenlee et al., 2013; Kumanyika, Obarzanek, Stevens, Hebert, & Whelton, 1991; Stolley et al., 2009; Svetkey et al., 2005). Creating interventions to attract participants with other health

concerns may be an appropriate way to recruit participants, as health has been cited as one of the main reasons individuals become engaged in weight-loss treatment (Fitzgibbon et al., 2012).

Reducing levels of hypertension with African-Americans was the priority for two large multi-site trials (Kumanyika et al., 1991; Svetkey et al., 2005) and one pre-post design (Banks-Wallace, 2007). Interventions were designed to engage participants in home-based walking and cardiovascular health education (Banks-Wallace, 2007), intensive nutrition and behavioral counseling (Kumanyika et al., 1991), and incorporating the DASH (increased fruits and vegetables, reduced sodium intake, decreased alcohol consumption, increased physical activity) diet with an established behavioral intervention (Svetkey et al., 2005). African-American participants lost less weight than other racial/ethnic participants; weight loss at study conclusion for intervention participants was -0.2 kg (black) vs. -2.5kg (white) (Kumanyika et al., 1991), -3.2kg (black) vs. -6.7kg (white) (Svetkey et al., 2005), and +4% weight (Banks-Wallace, 2007). However, major lifestyle changes were evident and researchers cited their interventions as helpful for maintaining lowered systolic blood pressure (Banks-Wallace, 2007) and encouraging positive lifestyle change (Svetkey, 2005).

Four interventions addressed breast health and reducing future risk among breast cancer survivors (Djuric et al., 2009; Fitzgibbon, Stolley, Schiffer, et al., 2005; Greenlee et al., 2013; Stolley et al., 2009). Intervention content focused on increasing the self-efficacy of participants to complete a breast self-exam (Fitzgibbon et al., 2005), providing weekly exercise classes (Stolley et al., 2009), providing memberships to commercial weight loss facilities and programs (Djuric et al., 2009; Greenlee et al., 2013) and providing participants opportunities to receive social support and engage in discussion on barriers to weight loss (Stolley et al., 2009). Mean weight loss varied across interventions: -3.4kg (Fitzgibbon et al., 2005); -2.5kg (Stolley et al.,

2009); +0.4kg (Djuric et al., 2009); -1.76kg (Greenlee et al., 2013). Researchers concluded that the development of financially feasible commercial programs would be of benefit (Greenlee et al., 2013), reflected on the importance of social support, and noted that participants made positive dietary and physical activity changes (Stolley et al., 2009).

2.1.7 Large Multi-site Interventions

Five significant multi-site trials have included significant sub-samples of African-American women: Weight Loss Maintenance Trial (WLM) (Hollis et al., 2008), PREMIER (Svetkey et al., 2005); Diabetes Prevention Program (DPP) (Diabetes Prevention Program Research, 2002), Hypertension Prevention Trial (HPT) and Trials of Hypertension Prevention (TOHP) (Kumanyika et al., 1991).

The WLM trial recruited 1685 participants (540 African-American women) and offered 20 sessions over six months, approximately once a week. The intervention was delivered in a group format, and participants received training on nutrition, physical activity, and the development of behavioral skills. The PREMIER trial enrolled 810 participants, 207 which were African-American women participants. Participants in this trial met for approximately six months, and attended 14 group meetings, and four individual meetings. The intervention consisted of nutrition and physical activity training. Finally, the DPP trial enrolled 1079 participants and 204 were African-American (Fitzgibbon et al., 2012).

The HPT trial recruited 246 participants (28 African-American women) and the TOHP trial recruited 303 participants, 33 of whom were African-American women. Both of these trials were designed to assess the effects of weight loss on reduction in blood pressure. Intervention

components included an intensive nutrition and behavioral counseling program, and information on cooking, shopping, and eating practices.

One noteworthy aspect of these multisite trials is their high rates of retention. Researchers report retention rates between 92-100% (Fitzgibbon et al., 2012). Moreover, African-American women were able to achieve larger mean weight losses in the DPP (-4.7 kg/m²) and the WLM (-4.1 kg/m²) (Fitzgibbon et al., 2012). Contributing factors included strict inclusion criteria, intensive group and/or individual treatment implemented with fidelity, and the availability of resources designed to help with retention and to monitor adherence (Fitzgibbon et al., 2012).

2.1.8 Summary and Critique of Intervention Research

Important conclusions can be made from the many weight loss interventions conducted with African-American women. Overall, African-American women tend to lose less weight in behavioral weight-loss trials (Fitzgibbon et al., 2012). However, despite the overall lack of effectiveness, there is much to learn from the work researchers have already done.

To begin, successful weight loss programs that include African-American women encouraged participants to increase their use of behavioral self-management skills, reduce dietary fat and caloric intake, utilize physical activity, monitor portions, and be consistent with session attendance (Fitzgibbon et al., 2012). Furthermore, group sessions appear to be a very important aspect of successful weight loss programs (Bronner & Boyington, 2002). This model allowed for uniform delivery of expectations and intervention guidelines, the presence of lay facilitators to offer support, efficiency with allocated funds and hired staff, and the ability for participants to experience community support (Bronner & Boyington, 2002).

Additionally, interventions for African-American women that addressed physical activity, eating, and behavioral counseling were more effective than interventions that only address one or two (Seo & Sa, 2008). Furthermore, lifestyle interventions with a focus on incorporating changes in eating and exercise routines have been effective, along with encouraging participants to reduce 7% of their body weight (Diabetes Prevention Program Research, 2002; Seo & Sa, 2008). Interventions involving African-American women may need to address environmental resources that can be easily accessed, as there is a link between access to healthful foods and difficulty with weight management (Fitzgibbon et al., 2012).

Addressing obesity within the context of community was another important component. Often, the community contained previously established groups where a strong supportive network was already formed. Within the African-American community, churches are parts of this type of network and have been an important site for many past weight loss interventions. Partnering with a similar type of structure might allow researchers to access potential participants.

Several strengths and weaknesses were associated with previous behavioral interventions for African-American women. Cultural tailoring has offered researchers the opportunity to create interventions incorporating some of the best elements of African-American culture, and to achieve the goal of meeting the participants at a relevant starting point. Some of the highlights are teaching participants healthier ways to prepare traditional African-American cuisine, including support systems within the intervention, offering childcare, and integrating spirituality.

While the education about nutrition and general health has been important, many interventions have lacked focus on the environment, and the multidimensional realities that surround many African-American women who are overweight or obese. Additionally, there is a

paucity of literature on the mental health needs of African-American women who are overweight or obese. African-American women manage untreated depression, anxiety, and trauma on a regular basis; increasing the platform for discussions on mental health and eating behaviors may offer researchers more insight into comorbid conditions, thus strengthening the effectiveness of future behavioral work (Harrington et al., 2010).

Future intervention research would benefit from examining some of the other reasons for weight gain within the African-American population. Excess weight might reflect coping strategies including overreliance on food to manage stress and other negative emotions (Kumanyika et al., 2007). At a meeting with the African-American Collaborative Obesity Research Network, an expanded paradigm was encouraged to include more holistic methods to explain the role of weight as coping in the attempts African-American women make (Kumanyika et al., 2007). Additionally, as attrition was a significant problem in previous weight loss studies, incentives, free transportation, and babysitting were offered as strategies that might improve retention (Bronner & Boyington, 2002). Finally, future interventions need to be relevant for the needs of African-American women, due to the unique societal, racial, and cultural factors that contribute to the obesity epidemic among them (Kumanyika et al., 2007).

Weight loss interventions with African-American women have been both challenging and informative. Many factors contribute to obesity within this population, and it will be essential for future research to consider more environmental concerns within the development of future intervention trials. Furthermore, uncovering the relationship between eating behaviors, psychological coping, and weight outcomes within this population may yield important data that can inform the development of more efficacious weight management interventions.

2.2 BINGE EATING: AN UNEXPLORED RISK FACTOR

Treating binge eating, also known as compulsive overeating, may be of particular importance for prevention efforts to decrease the incidence of obesity among African-American women. Binge eating is defined by engaging in compulsive overeating in a discrete period of time, while concurrently experiencing a sense of loss of control. Susceptibility to binge eating places one at risk to develop Binge Eating Disorder (BED), which remains recurrently undertreated (Hudson, Hiripi, Pope, & Kessler, 2007; Yanovski, 2003). BED is strongly associated with other comorbid conditions of serious concern, including severe obesity, substance disorders, and mood disorders (Cheng et al., 2012; Guss, Kissileff, Devlin, Zimmerli, & Walsh, 2002; Hudson et al., 2007; Pike, Dohm, Striegel-Moore, Wilfley, & Fairburn, 2001; Striegel-Moore, Wilfley, Pike, Dohm, & Fairburn, 2000).

While most individuals who are obese do not have BED, it is clear that a significant portion of these individuals experience stress and dysfunction due to binge eating (Yanovski, 2003). Binge eating is associated with severe obesity, and is an eating behavior that may precede the development of obesity (Yanovski, 2003). Investigators have identified growing concerns for the lack of treatment and identification of disordered eating behaviors among racial and ethnic minorities, and have issued a call for increased attention to this area (Pike et al., 2001; Taylor, Caldwell, Baser, Faison, & Jackson, 2007).

2.2.1 Binge Eating in African-American Women

Recently, investigators have been exploring the presence of binge eating within samples of African-American women (Marques et al., 2011; Taylor et al., 2007; Taylor et al., 2013). In a

secondary analysis of pooled data from the NIMH Collaborative Psychiatric Epidemiological Studies (CPES), a nationally representative survey including 3,570 African-American adults, the presence of any binge eating was markedly higher among African-Americans than Non-Latino whites. The reported presence of any binge eating (regardless of clinical diagnosis) among African-American women was 4.83%, compared to only 2.53% in Non-Latino white women (Marques et al., 2011). Additionally, the presence of any binge eating has been associated with functional impairment among African-Americans (Marques et al., 2011). Among African-American women who were severely obese ($BMI \geq 40$), rates of binge eating were discovered to be approximately 33.3% (Mazzeo, Saunders, & Mitchell, 2005).

Traditionally, eating disorders have been identified as a concern for affluent, upper class white women, and racial/ethnic minorities have been believed to be far less at risk (O'Neill, 2003; Taylor et al., 2007). However, recent evidence suggests that eating disorders are as common in racial/ethnic minorities as in whites (Marques et al., 2011; Mazzeo et al., 2005). Mental health treatment utilization, however, is not equal, and African-Americans have some of the lowest rates of access to care (Marques et al., 2011). Eating disorders may be misunderstood, underreported, and untreated among racial/ethnic minorities in the U.S. (Taylor et al., 2013).

BED is the most common eating disorder among all racial and ethnic groups (Hudson et al., 2007; Taylor et al., 2007). Among blacks, lifetime prevalence of BED has been estimated to be at 5.02% (Taylor et al., 2013). Recent evidence shows, that among African-American women seeking bariatric weight loss surgery, the prevalence of BED is reported to be 33.3% (Mazzeo et al., 2005). Moreover, depression, higher body fat percentages, and high ratings of perceived stress have been associated with binge eating among community samples of African-American women (Adamus-Leach et al., 2013; Azarbad, Corsica, Hall, & Hood, 2010; Mazzeo et al.,

2005). There is evidence that weight loss participants diagnosed with BED tend to do worse in treatment and relapse more quickly than those without BED (Gluck, Geliebter, & Lorence, 2004; Yanovski et al., 1993). Given the strong association between BED and obesity, the presence of this eating disorder has the potential to hinder weight gain prevention interventions.

2.2.2 Treatment of Binge Eating

Treatment for binge eating normally targets reducing binge eating, addressing weight and shape concerns, inducing weight loss, and preventing excess weight gain (Tanofsky-Kraff et al., 2013). Several psychological treatment models have been effective as treatment for binge eating and BED (Brownley, Berkman, Sedway, Lohr, & Bulik, 2007; Tanofsky-Kraff et al., 2013; Wilson, Grilo, & Vitousek, 2007). Currently, Cognitive Behavioral Therapy (CBT) and interpersonal psychotherapy (IPT) are the most recommended approaches (Tanofsky-Kraff et al., 2013).

CBT proposes that successful treatment of eating disorders will improve attitudes toward eating and body image, which will then work to decrease binge eating (Tanofsky-Kraff et al., 2007). In a meta-analysis of randomized clinical trials for eating disorders, Brownley et al. (2007) report that CBT has been found effective to reduce binge eating episodes and/or the number of binge eating days. Additionally, CBT has been associated with high treatment completion rates, and improvements in psychosocial functioning and depressive symptomatology (Jarosz, Dobal, Wilson, & Schram, 2007).

In contrast to CBT, IPT proposes that binge eating is a result of poor social functioning and negative affect (Tanofsky-Kraff, 2012). By improving interpersonal functioning and self-esteem, negative affect is reduced, and binge eating behaviors can be lessened (Tanofsky-Kraff et al., 2013). IPT has also been found efficacious at reducing binge eating behaviors and

inducing modest weight loss, and also helping participants maintain those gains in the follow-up period (Hilbert et al., 2012; Wilfley et al., 2002).

2.2.3 Binge Eating and Obesity

A growing body of research reports on the association between binge eating and severe obesity (Hudson et al., 2007; Yanovski, 2003). Treatment of binge eating may offer the possibility of coordinating treatment for eating disorders and obesity, and provide opportunities for those who may not seek mental health treatment to get appropriate care (Pike et al., 2001; Tanofsky-Kraff et al., 2007). In trials for BED, researchers have been surprised to discover that individuals who cease to binge eat have a higher likelihood of maintaining their body weight and/or losing a modest amount of body weight for the duration of and/or following treatment (Agras, Telch, Arnow, Eldredge, & Marnell, 1997; Hilbert et al., 2012; Tanofsky-Kraff et al., 2007; Wilfley et al., 2002).

After evaluating 93 women (92% Caucasian) who were diagnosed as having BED and were treated with CBT followed by a behavioral weight loss program, in the one-year follow-up, Agras et al. (1997) discovered that both the treatment and the intervention group were able to reduce their binge eating behaviors. For those who stopped binge eating during treatment, a weight loss of 4.0 kg was sustained in the follow-up period. Conversely, those who continued to binge eat gained 3.6 kg. In another study, investigators randomized 162 participants (over 90% Caucasian, 67% female) diagnosed with BED to either 20 sessions of group CBT or group IPT (Wilfley et al., 2002). At one-year follow-up, rates of binge eating recovery were 79% for the CBT group and 73% for the IPT group. Binge eating remained significantly below pretreatment

level. Among participants who were abstinent from binge eating post-treatment, BMI was reduced by $.5 \pm 1.5\text{kg/m}^2$ during treatment, compared to those who were still binge eating.

Finally, in a recent investigation of the long-term efficacy of psychological treatments (CBT, IPT) for BED, Hilbert et al. (2012) assessed 90 people (over 90% Caucasian) with BED four years after treatment ceased. For both groups, the long-term recovery rate for binge eating was between 72-84% among participants. Additionally, investigators discovered that body mass index had been stable throughout the follow-up period.

Collectively, the results of these studies present a promising foundation from which to consider the benefit of treating binge eating as a risk factor for the development of overweight and obesity. While the current evidence is limited by being based on predominantly Caucasian samples, it suggests that the treatment of binge eating, by psychological or behavioral weight-loss treatment, is associated with decreased incidence of subsequent weight gain. By helping participants manage their eating behaviors and decrease their binge eating, researchers have an opportunity to design behavioral weight management interventions that may address this important risk factor. These results may be particularly salient for African-American women - a cultural group for whom behavioral weight-loss treatment has been less effective. Moreover, these interventions may enable us to further explore the presence of binge eating and obtain more information on how pervasive it is among African-American women.

2.2.4 Summary and Future Research

Current evidence has laid groundwork to encourage investigators to consider the role of eating disorders among racial and ethnic minorities, and not as a problem seen only in white women. African-American women are as likely to have an eating disorder as any other racial and ethnic

group. When compared with white and Hispanic women, African-American women have higher rates of observed binge eating, and higher levels of functional impairment as a result of these eating behaviors. Furthermore, due to evidence that suggests African-American women may be less likely to seek eating disorder treatment, and are more willing to participate in weight management interventions, addressing the risk factor of binge eating within treatment for weight loss may be essential for future research.

Of critical importance, however, may be the overconsumption of food, psychological reliance upon food, and lack of awareness of hunger and satiety signals experienced by African-American women. A growing body of evidence suggests these behaviors appear to place black women at a far greater risk for the development of overweight and obesity than Caucasian women. Additionally, with reported discomfort with mental health treatment, and historic lack of inclusion within research trials, rates of binge eating may be more severe than is currently documented within literature.

Currently, there is scant intervention research in African-American women addressing binge eating (Franko et al., 2012; Mama et al., 2015). Certain psychotherapeutic interventions, e.g., CBT and IPT, are effective in decreasing binge eating and preventing weight gain among white adults, and have shown preliminary feasibility in African-American adolescents (Dicker & Craighead, 2004; Tanofsky-Kraff et al., 2007; Tanofsky-Kraff et al., 2010). Testing a binge eating intervention in African-American women may be an important first step to weight gain prevention efforts. Evaluating the feasibility and acceptability of such an intervention may increase effectiveness of weight management efforts, and reduce psychosocial barriers to adopting dietary and physical activity changes. Moreover, this may also set a foundation for reducing the risk of CVD, diabetes, and other co-morbid conditions among this population.

3.0 JOURNAL ARTICLE: APPETITE AWARENESS TRAINING TO PREVENT OBESITY IN AFRICAN-AMERICAN WOMEN

3.1 INTRODUCTION

Current estimates indicate 57% of African-American (AA) women are obese, compared to only 36% of Non-Hispanic white women (Ogden et al., 2015). Obesity is of significant public health concern, and is associated with the presence of numerous co-morbid conditions (American Heart Association, 2012, 2013). Behavioral weight loss trials have been the predominant form of treatment for obesity in the United States (Burke & Wang, 2011). However, among AA women, these interventions have not been as effective (Fitzgibbon et al., 2012; Wingo et al., 2014). Investigators are realizing the need to adapt treatment to the unique needs of AA women.

A significant number of AA women have certain eating behaviors (e.g., binge eating, overeating, emotional eating) that may contribute to obesity and poorer behavioral weight loss treatment outcomes (Harrington, Crowther, Henrickson, & Mickelson, 2006; Lydecker & Grilo, 2016; Taylor et al., 2007). Binge eating was observed in 33% of AA women seeking treatment for obesity (Mama et al., 2015; Mazzeo et al., 2005), and some studies found higher rates of binge eating in AA compared to white women (Lydecker & Grilo, 2016; Marques et al., 2011). AA women who binge and overeat may be at an increased risk for obesity. Eating beyond satiation on a daily basis increases the odds of becoming obese 15-fold for AA women,

compared to only six-fold for Caucasian women (Brewer, Kolotkin, & Baird, 2003). Additionally, overweight AA women may use food to cope with stress and emotion, and may be susceptible to external cues of eating and disinhibition (Sims et al., 2014; Sims et al., 2008; Willig, Richardson, Agne, & Cherrington, 2014). Therefore, addressing awareness of appetite and binge eating behaviors may be relevant in the prevention of obesity for AA women.

Currently, scant intervention research addresses the eating behaviors of African-American women (Franko et al., 2012; Mama et al., 2015). We tested the feasibility of an eight-week Appetite Awareness Treatment (AAT) program in a community-based sample of AA women with reported binge and/or overeating behaviors. Since AAT has not been tested to treat eating behaviors in samples of AA women, we gathered data on the acceptability of the intervention with this group. The objective of this study is to evaluate participant satisfaction with AAT and generate information to improve its effectiveness among AA women.

3.2 METHODS

3.2.1 Study Design

The purpose of this qualitative investigation was to evaluate an eight-week community-based AAT intervention for AA women (N=36) and explore its cultural relevance by using focus groups. Participants were recruited to AAT in Fall 2015 with flyers and newspaper advertisements in the Greater Pittsburgh (PA) region. Inclusion criteria included the following: AA woman, aged 18-70, and reported presence of at least one of the following: 1) binge eating; 2) overeating; and/or 3) loss of control eating. Four separate AAT interventions were conducted

at community-based agencies. In the fourth group only, participants were provided a nutritionally-balanced meal at each of the eight sessions (AAT + dinner). After completing the eight-week AAT intervention, participants were invited to participate in a focus group discussion. Participants were compensated \$25 for participating in the AAT group, and \$5 for the focus group.

3.2.1.1 Appetite Awareness Treatment

The goal of AAT is to teach participants to relearn their stomach's hunger signals and begin to use internal satiety signals as cues to stop eating before getting overly full (Craighead, 2006). The AAT intervention evaluated in this study included eight 60-minute group sessions providing education about appetite monitoring, establishing a regular pattern of eating, and avoiding loss of control, binges, and grazing/nibbling behavior. All sessions involve didactic training, review of eating episodes as recorded in self-monitoring homework assignments, and interactive activities to practice learned skills.

3.2.1.2 Data Collection and Analysis

The study was approved by the Institutional Review Board of the University of Pittsburgh. The principal investigator (PI; an African-American female) was the moderator for the focus group discussion. At the beginning of each focus group, participants completed a socio-demographic survey that collected information about age, education, and income, among others. Then, the moderator provided an overview and explained that each session was audio-recorded, and stored in a password-protected, secure computer at the University of Pittsburgh.

Participants answered a series of semi-structured questions (Table 1) about the strengths and weaknesses of the AAT intervention, and how the intervention could be changed to better

suit needs of AA women. Two members of the research team took notes on each session. Following the completion of each focus group, the PI and members of the research team met together to evaluate the experience of the focus group, and to share main points of the discussion.

The discussions were transcribed by experienced transcriptionists. Following transcription, the PI read all transcripts and then developed an initial codebook. Independently, two research team members used open coding to describe the varied experiences within the phenomenon of participating in AAT intervention (Miles & Huberman, 1994). Then, investigators worked together to assign meaning to the descriptive information compiled during the study (Miles & Huberman, 1994; Sandelowski et al., 1989). Descriptive and pattern coding characterized emerging themes and phenomena (Miles & Huberman, 1994). Finally, constant comparison helped to organize codes and decipher the core themes that explained the variation within the data (Sandelowski et al., 1989).

Table 1. Focus Group Questions

- | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none">1. Please tell me your experience of participating in the APPETITE Trial.2. When you came into the program, what did you expect? What were your goals? Were you able to meet those?3. What made it easier for you to participate in intervention activities?4. What made it difficult to participate? How did you overcome your difficulties?5. What suggestions do you have for things that could be changed in the intervention?6. Would you recommend participating in this intervention to a family member or friend? If so, why? If not, please explain. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

3.3 RESULTS

Seventeen participants agreed to be a part of the discussion. Three focus groups were conducted: AAT (n=2) and AAT + weekly dinner (n=1). There were four to eight participants in each group. On average, participants were 49.41 ± 12.12 years of age, and had completed $15.12 \pm$

2.60 years of education. Approximately 41% of participants had an income \leq \$29,000, 11% reported an income \$30-59,000, and 47% reported an income that was \geq \$60,000. Four themes emerged from the groups, as described below and illustrated with representative quotations. Although one AAT group received dinner weekly, we found consistency in themes in all groups, and reached thematic saturation.

3.3.1 Satisfaction

Overall, focus group participants were very satisfied with the intervention, pleased to receive support from the facilitator and other group members, and were surprised that the eight-week intervention moved so quickly. Participants also commented on the pacing of the class, and felt that “each lesson built on the next lesson very well.” Participants reported becoming more aware of internal cues of hunger and satiety, and reported this awareness felt very different from their experience of engaging in a diet. Others mentioned how helpful it was to receive information to help them overcome binge eating and/or emotional eating behaviors.

I like this the way it was written on focusing on the emotional. You have emotional issues that you haven't resolved and it affects your eating, and I know that to be true, and I think listening to all of the women, yeah, we were raised this way, it's hard to get out of those habits, but we're trying, and we're succeeding, and we're learning.

3.3.2 Cultural Relevance of AAT

One of the concerns was the cultural relevance of AAT because it was originally validated in a sample of white, college-aged women. When designing this study, investigators had concerns about whether this intervention would be relevant to AA women. When reflecting, participants offered their thoughts on the relationship between food and AA culture:

...how we eat and how we socialize culturally stems back from way, way, way back [several Ps agree] and how slavery times up until we became free, and that's just what we did. You know what I mean? We tended the field, and we slaughtered everything on our own . . .That's – it's just culturally, that's where we come from.

Several participants agreed on the importance of eating and that it is a central part of socializing and celebrations. In her comments about the eating patterns of AAs, one participant noted,

So I think when she said that in one of our sessions, it really hit home to me because, I mean, like we talk about [eating] even in church. Honey, after every church service, after every rehearsal, “Where y'all going? What y'all going to go eat?” Literally, any time we walk in and out the door. It's just culturally who we are, and even if you get together with somebody for a cup of coffee...we didn't get together and just have coffee. We had donuts.

Participants also considered how important it was to consume all the food on your plate. One participant expressed,

My mom made me try everything. She made me eat almost everything, unless I either threw it up, or I had a tantrum, or I was allergic. It's like it's engrained, like you said. Once I came to the recognition of this is really what goes on, I said, “Ooh, let me stop this cycle, so my children don't have to go through the same thing.”

Overall, participants felt the AAT intervention was adequate to reflect their eating behaviors. Moreover, one participant felt that “it was culturally appropriate because all of us are who we are,” considering the identity of all participants as AA.

3.3.3 Lessons learned about food

Several participants learned numerous lessons about their eating behaviors from the AAT intervention. More than a few expressed how helpful it was to receive information to increase their level of mindfulness regarding their eating behaviors. Moreover, participants also felt they

learned beneficial information about “grazing and nibbling” behaviors. Other participants had a long history of engaging in different “diets” but enjoyed the AAT intervention because of the focus on appetite.

What I’ve learned over the years is that I’ve lost weight in different ways. When I worked out the first time, I did all this cardio, lost it, gained it back. The second time, I did more weightlifting, lost, gained it back. So all the diets I’ve done and nothing ever addressed appetite ever. So you can do all that stuff and still have this huge appetite, and not associate it with your feelings...And that’s what I learned from this. This is the first angle that I’ve approached it differently than any other diet I’ve ever done.

Other participants described the importance of control, and how the AAT intervention gave them the ability to “have it back.” Participants learned to respond to external environmental temptations, consciously make decisions about what to eat, work on being mindful of their eating behaviors, and never accept for “what the heck” eating moments.

My biggest takeaway is it’s OK to say no and it’s OK to say yes. Just having that control is what I’ve gained over the last eight weeks. I can come to a social setting and know I don’t have to keep on eating because there’s something that’s fabulous sitting on the table that I’d like to keep eating, but I know I could just say no. So I just feel like I got my control back, and it lets me pass that down to my children and to my husband.

Additionally, several participants described how the AAT program helped in teaching skills that will enable reflection on the life events, stressors, and interpersonal concerns that serve to trigger binge and overeating episodes.

3.3.4 Recommended Changes

While several of the participants expressed their satisfaction with AAT, some wanted changes in several components. Participants in AAT without dinner made comments about how providing food may have been helpful. Periodic meals may have provided additional training and an

opportunity to see if the skills taught were being learned. Participants in the focus group evaluating AAT + dinner reported the meal was helpful, and decreased the burden of attending. Additionally, participants reported practicing some of the AAT principles in session, and relief at not having to count calories while enjoying the meal.

Another aspect that the participants discussed changing was the length of the intervention. Overall, participants reported the 60-minute session length was acceptable, though they would not be opposed to lengthening the time of the sessions, or holding additional meetings above and beyond the eight scheduled for support. In fact, several participants suggested follow-up sessions after the end of the intervention.

I think you need to have some type of follow-up, just for the simple reason of doing it in the eight-week program is kind of controlled from the standpoint that we're getting this information on a regular basis, so... and you're kind of holding our hand. But after tonight, we're on our own, so I think it would be helpful in terms of what you're trying to do to find out how people – if people actually changed their behaviors for good, or was it a temporary thing.

Participants appeared to have the most challenges in the beginning with comprehending the self-monitoring homework form, and the instructions. One participant discussed her experience this way:

I'm trying not to be intimidated by the sheets. I'm trying to not be scared to eat or overeat or under eat, and I kind of even played with when do I write down on the sheet? Do I write it as I go? Does it make me feel better or worse during my meal based on what I actually have to write down?

Remembering to bring the paper sheet with them during the day was another challenge discussed by the participants. For future sessions, participants offered suggestions about having the form be digital, either by phone or having a version they could access on the computer.

3.4 DISCUSSION

The purpose of this study was to assess the acceptability of AAT in a sample of AA women who are overweight and obese. Our results indicate that AAT was acceptable, and participants were satisfied with the pacing, curriculum, and support they received. The primary cultural adaptation suggested was the intervention might be most acceptable and effective when provided as it was in this trial, within a relatively homogeneous group where the members and the group leader share a similar cultural background. Participants also expressed satisfaction with the lessons learned about improving their relationship with food.

In our investigation, focus group participants valued learning about mindful eating and listening to one's body, reducing grazing/snacking behavior, and learning to take control back in making eating choices. Several studies have indicated African-American women may face challenges understanding biological signals of hunger and satiety (Willig et al., 2014) and may use food to cope with experiences of trauma and stress (Harrington et al., 2006; Harrington, Crowther, & Shipherd, 2010). It is heartening that focus group participants felt that participating in AAT helped them address these challenges. Future research will be important to determine the extent and reach of AAT to improve disordered eating among samples of African-American women.

Several of the participants expressed appreciation for the social support offered within the AAT program. In previous research, AA women report experiencing minimal friend and family support for developing healthful eating behaviors (Johnson, Carson, Affuso, Hardy, & Baskin, 2014; Stolley et al., 2009). In fact, Wolfe (2004) posited that social support may be a neglected strategy in the weight management efforts of AA women. While not the original purpose of the AAT program, our focus group investigation discovered that the support from others was one of

the most satisfying parts of the program. Maximizing the support participants receive may be helpful in improving the AAT program and its impact on AA women who are overweight and obese in the future.

Moving forward, it is important for investigators to find a way to include food as a part of the AAT program when tailoring for AA women. This was strongly encouraged in all of the focus groups conversations. It became apparent that many of the eating behaviors of the focus group participants were rooted in a rich, cultural tradition of food preparation and consumption (Airhihenbuwa et al., 1996; Befort et al., 2008). This was reflected in several participant comments about the joy of planning and preparing food for social gatherings. Furthermore, considering the reported challenges with AA women making food decisions based on convenience and cost (Antin & Hunt, 2012), and as reported in the associated focus group (AAT + dinner), providing food may also serve to model healthful behaviors, and decrease the burden of participating in the program. To positively affect the health behaviors of AA women, it will be essential for investigators to understand these cultural traditions, and honor them as part of intervention efforts.

Several suggestions were made to alter self-monitoring form, that was to be completed at home in between meetings, and create a version accessible by phone or computer that is more convenient. Mobile technology is increasingly being used in behavioral weight loss interventions (Bennett et al., 2013; Svetkey et al., 2015). Bennett et al. (2013) designed an intervention that included self-monitoring by interactive voice response telephone calls as part of the weight management intervention. The completion rate for these calls ranged between 65-89.5%. Additionally, Herring, Cruice, Bennett, Davey, and Foster (2014) investigated the use of self-monitoring by text messages, with feedback, as part of a technology-based weight loss

intervention for low-income AA and Hispanic mothers. After 14 weeks, participants in the technology-based intervention group had significantly higher weight loss compared to those in the control group. Both of these studies suggest the viability of mobile technology among AA women, and in future AAT investigations.

4.0 CONCLUSION

4.1 SUMMARY

AA women carry a considerable burden of obesity within the U.S. population and behavioral weight loss trials have not been as effective in this population. Investigators have been encouraged to consider additional factors that may influence treatment outcomes. Untreated eating behaviors, such as binge and loss of control eating, have been recurrently untreated in AA women, and there has been very little intervention research. Thus, the purpose of this study was to investigate the acceptability of AAT in a community-based sample of AA women. AAT was acceptable, and participants reported enjoying intervention activities and the support received by the facilitator and other group members. While the intervention was not originally validated among African-American women, focus group participants expressed that having the intervention be led by an African-American PI, and having all group members be of the same cultural background created an atmosphere of comfort, and made the program feel culturally relevant. Participants also expressed satisfaction with the lessons learned about improving their relationship with food. Several participants hoped to continue progress after the program was over. Future suggestions include changing the intervention to meet on a weekend, providing food in session to allow participants to practice intervention principles, and to add follow-up sessions

after the eight-week program is complete. Furthermore, participants also requested a change in the homework form, requesting that a digital version be used for convenience in the future.

4.1.1 Implications for Future Research

Considering the dearth of intervention research in AA women with self-reported and observed eating behavior challenges, the reported satisfaction of participants within AAT is encouraging. However, based on feedback given, several changes need to be made (e.g. homework form, meeting time/day, length of intervention) to improve AAT, and potentially increase its acceptability among AA women. It may also be helpful to examine the acceptability of AAT in samples of Hispanic and Latino women with reported disordered eating behaviors. Several investigations indicate that these women may have similar difficulty with binge eating behaviors, and rates of obesity are similarly high, as compared with AA women (Mama et al., 2015; Marques et al., 2011; Ogden et al., 2015).

4.1.2 Limitations

Limitations of the study include the small sample size and the self-selection of participants. Self-selection may introduce bias with the potential to include more participants who were pleased with AAT and their experiences in the program. While several attempts were made to include all AAT participants, several women chose not to attend the focus group. The PI led all focus groups; this also has the potential to introduce bias focusing on more positive aspects of the intervention. Finally, the exploratory nature of this work may not permit the results to be

generalized beyond participants in our study. Despite these limitations, this is the first study, to our knowledge, that specifically examines the acceptability of a binge eating intervention for AA women in a community-based setting.

We hope this research will encourage more investigators to test eating behavior interventions among AA women who are overweight and obese. Due to a literature that indicates AA women are less likely to engage and be retained in treatment for eating disorders, investigators have found some success using lifestyle and behavioral weight loss program as an intervention tool (Mama et al., 2015; Thompson-Brenner et al., 2013). However, a considerable amount is unknown about the trajectory and treatment of binge and overeating among this population; it is imperative that more research is undertaken.

4.1.3 Conclusion

Given the challenges of treating overweight and obesity among AA women, it will be critical for the next generation of weight loss and eating behavior research to seek to understand some of the cultural and environmental challenges that impact the health behaviors among this population. While we have known about binge eating in AA women for almost two decades, there is still much to learn about treatment and the relationship of binge eating to overweight and obesity among this underserved group.

This study contributed several important insights to our current knowledge of engaging African-American women in weight management interventions. First, future research may benefit from examining the role of eating behaviors and culture in addressing any weight change goals among this population. There are strong historical roots that have passed down the meaning of, amount, and type of food that individuals may believe is acceptable. Moreover, if

cultural norms permit the eating of large quantities of food as a tool for self-care or for enjoyment, then it may be important for behavioral weight loss interventions to address this behavior before the addition of any alternative weight loss skills.

To the best of our knowledge, this is the first investigation to describe the experience of African-American women participating in an intervention to address their eating behaviors. Future research should continue to expand our knowledge on the relationship these women have with food, and the role eating behaviors have in the development and continuation of disordered eating behaviors and obesity. While addressing the prevalence of obesity is a significant public health concern, there is great opportunity to extend the reach of our science by taking care to develop culturally-informed programs to change health behaviors. As we continue to learn about the presence of racial health disparities in obesity and with other cardiovascular diseases, next step are to rise to the challenge, and effectively leverage our current knowledge to benefit those who have been underserved.

This investigation examined the acceptability of a binge eating intervention, AAT, in a sample of AA women who reported binge and/or overeating behaviors. From the results, AAT was acceptable, and participants found it valuable to learn more about maintaining biological signals of hunger and satiety, and to receive group support in the change of eating behaviors. Future research will be important to determine the extent and reach of AAT to improve eating behaviors and prevent obesity among samples of AA women.

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