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Innovative Care Delivery Model to Address Obesity in Older African American Women: Senior Wellness Initiative and TOPS Collaboration for Health (SWITCH)

Nia S. Mitchell, MD, MPH^{a,b,c} and Sarit Polsky, MD, MPH^{b,d}

^aDivision of General Internal Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO

^bAnschutz Health and Wellness Center, University of Colorado Anschutz Medical Campus, Aurora, CO

^cColorado Health Outcomes, University of Colorado Anschutz Medical Campus, Aurora, CO

^dDivision of Endocrinology, Metabolism, & Diabetes, University of Colorado Anschutz Medical Campus, Aurora, CO

Abstract

BACKGROUND—Obesity is more prevalent among African American women (AAW) than any other group in the United States. Take Off Pounds Sensibly (TOPS) is a national, nonprofit, weight loss program where people have lost a clinically significant amount of weight.

OBJECTIVES—To determine the feasibility and acceptability of integrating TOPS into a community program that serves African Americans (AA) and determine weight change.

DESIGN—Single group pilot design.

SETTING—Denver, Colorado

PARTICIPANTS—Community dwelling participants aged 51 to 85

INTERVENTION—Participants were recruited through a program that serves AAs and new TOPS chapters were started at a church, senior center, and senior residence for independent living.

MEASUREMENTS—Feasibility was measured by determining the ease of recruitment and acceptability was measured by the retention. The secondary outcome was weight change.

RESULTS—Sixty-four percent of people who were referred to the program or attended an information session participated in the study. The retention rate at 52 weeks was 79%. At 52 weeks, 16 of 48 participants lost 5% or more of their initial weight and 23 of 48 participants lost between 0 and 4.9% of their initial weight.

Corresponding Author: Nia S. Mitchell, University of Colorado Anschutz Medical Campus, Anschutz Health and Wellness Center, Mail Stop C263, 12348 E. Montview Blvd, Aurora, CO 80045, Nia.Mitchell@ucdenver.edu, Phone: 303-724-9112, Fax: 303-724-0942.

Alternate corresponding author: Sarit Polsky, MD, MPH, Sarit.Polsky@ucdenver.edu

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CONCLUSIONS—Recruiting African American women through the Center for African American Health was feasible and the program was acceptable. One-third of participants lost a clinically significant amount of weight. TOPS may be one way to combat the health disparity of obesity in African American Women.

Keywords

weight loss; older; African American; obesity; community engagement

INTRODUCTION

The obesity epidemic has been more prevalent among African American women (AAW) than any other group in the United States. Currently, 82% of AAW in the US are overweight or obese,¹ and 100% could be obese by the year 2034.² AAW also have more obesity-related medical conditions including hypertension and diabetes compared to African American (AA) men and other racial/ethnic groups.³ Yet, AAW do not participate in weight loss programs as often as other racial/ethnic groups and have a tendency towards less weight loss success when they do.^{4, 5} Excess levels of obesity in AAW may be attributed to increased energy intake as compared to other groups,⁶ cultural differences about acceptable body weight,⁷⁻⁹ and/or a lack of culturally sensitive interventions.¹⁰ Some of the recommendations for cultural adaptations to improve weight loss outcomes in ethnic communities include placing interventions in community settings, targeting specific ethnic groups, and having group leaders of the same ethnic group.¹¹ Take Off Pounds Sensibly (TOPS) is a low cost, nationally available, peer-led, nonprofit weight loss program. There are over 115,000 members in almost 7,000 chapters across the United States (personal communication D. Hrupka, November 2012). People who renew their annual membership in TOPS can lose 5% of their weight and maintain the weight loss for up to three years.¹²

The Center for African American Health (CAAH) is a community organization that provides disease prevention and management programs for AAs who live in the Denver area. One CAAH program is the Senior Wellness Initiative (SWI). Its goals are to help older AAs maintain their independence, improve their quality of life, and promote healthy lifestyles.

This study recruited participants through SWI to join three newly formed TOPS chapters, which met at three established SWI sites. We will describe the recruitment process, feasibility and acceptability of the program, and weight change outcomes.

METHODS

Study Design

This pilot study was a single group design. The Senior Wellness Initiative and TOPS Collaboration for Health (SWITCH) was a community based participatory research project that addressed the health disparity of overweight and obesity among older AAs in the Denver area by integrating an effective, low cost, weight loss program into a community organization.

Recruitment

We used a multifocal recruitment strategy. First, we placed flyers about the program at SWI sites where TOPS chapters would be started. Second, we sent a letter signed by the SWI program coordinator to the 312 SWI participants. Third, we held an informational meeting at each site. Lastly, we accepted referrals of people who contacted us because they heard about the program.

Eligibility criteria

Individuals who participated in SWI, who frequented the SWI locations, or who were referred to the program between the ages of 50 and 89 years with a body mass index (BMI) of $\geq 25 \text{ kg/m}^2$ were eligible to join the program. Although enrollment targeted AAs, no exclusions were made based on gender, ethnicity, or any socio-demographic factor. We included individuals on insulin, corticosteroids, or with a history of cancer with the permission of their healthcare providers. We excluded those with a history of bariatric surgery, anorexia or bulimia, schizophrenia or bipolar disorder, or a weight change of 5% or more within six months of the study.

Intervention

New TOPS chapters were started at a church, senior center, and senior residence for independent living. Each site received a nominal fee for allowing groups to meet in their locations. The study paid for scales and stadiometers for each chapter. Participants received the standard membership packet— one-year membership in TOPS, booklet with a six-week lesson plan, and one-year subscription to *TOPS News*. They also received a TOPS Wellness Toolkit, which included a weight management lifestyle guide and workbook, food diary, nutrition guide, achievement log, journal, and resistance bands. Participants did not receive monetary compensation.

Since TOPS is a peer-led program, individuals volunteered to be chapter officers. Each chapter had a leader, co-leader, weight recorder, and secretary. TOPS chapters also have a treasurer, but that position was not necessary because the chapters' financial obligations were handled by the study. As in standard TOPS chapters, the groups were started with the assistance of the local area coordinator who helped each group fill out paperwork to start a chapter, showed the officers their duties, and offered guidance about programming ideas.

Data collection

Data were collected at weekly meetings by the chapter leadership. Participants' heights were measured one time without shoes on a portable stadiometer (Seca 217) at their first TOPS meeting and recorded. Weights were measured at weekly meetings using a portable scale (Health-O-Meter 498 KL) and recorded on the TOPS Weight Chart (Form L-027T). The study team collected copies of these forms and data were transferred to a secure, HIPAA compliant database. The protocol was designated as expedited and approved by the Colorado Multiple Institutional Review Board.

Outcome Measures

The primary outcomes were feasibility and acceptability. Feasibility was measured by determining the ease of recruitment and acceptability was measured by the retention. The secondary outcome was weight change.

Statistical Analyses

Feasibility was calculated by dividing the number of people who signed up for the study by the sum of the number of people who attended information sessions or who were referred to the program. Acceptability was measured by calculating the retention rate at 12, 24, and 52 weeks. To determine retention rate, participation was ascertained at 12, 24, and 52 weeks using a method from another published weight loss study.¹³ If a participant did not have a weight at the specific time point, but there was at least one weight after that time point, she was still considered to be in the program at that time point. If there was no weight recorded after the specific time point, but there was a weight recorded within six weeks prior to the time point, the participant was considered to be in the program at that time point.

For weight change, means and standard deviations are reported. Weight change was calculated as last observation carried forward (LOCF) and completers' analyses. For both analyses, the weight change was calculated as the difference between weight at 12, 24, and 52 weeks and baseline weight, in kilograms and a percentage of initial weight. Weight change was also categorized as a percentage difference from initial weight in the following groups: weight loss of 0 – 4.9%, weight loss of ≥ 5%, or weight gain. In the LOCF, the last weight for those participants who did not have weights at weeks 12, 24, or 52 was carried forward. Therefore, if a participant's last recorded weight was in week 16, this weight was used to calculate weight change at 24 and 52 weeks. For the completers' analysis, weight change was calculated by using the weights of only those individuals who were participating in the program at 12, 24, or 52 weeks, as defined in the previous paragraph. For example, if a participant did not have a weight recorded at 24 weeks, but had a weight recorded at 32 weeks, her most recent weight prior to 24 weeks was used; however, her data were not used in the 52 week calculation.

Data were analyzed using SAS, version 9.2 (Cary, North Carolina, USA).

RESULTS

Recruitment/Feasibility

From the recruitment efforts, 75 people either attended an informational session or were referred to the program. Of those, 59 individuals were interested in participating in the study and 48 were eligible to participate. Therefore, the recruitment factor was 0.64.

Participant characteristics

Baseline characteristics for participants are shown in Table 1. All participants were female, and their average age was almost 70 years (range 51.0 to 85.5). The median weight and BMI for participants was 88.2 kg and 34.9 kg/m², respectively. Only one of the 48 participants was not AA.

Retention

The retention rates at 12, 24, and 52 weeks were 98%, 94%, and 79%, respectively. The week of the final recorded weight for each participant was documented. The median value for the final recorded weight was 51 weeks with 25th and 75th percentiles of 48.5 and 52 weeks, respectively.

Weight change

Table 2 shows the weight change in kg and as a percentage of initial weight as calculated in the LOCF and completers' analyses, and it also shows the weight change categorized as weight loss of 0 – 4.9%, weight loss of ≥ 5%, or weight gain.

Average weight change for all participants in the LOCF analysis at 12, 24, and 52 weeks was modest at –1.7%, –2.2%, and –3.3%, respectively. However, the range of weight change was wide ranging from a loss of 18.9 kg to a gain of 5.1 kg at 52 weeks. At 12, 24, and 52 weeks, 10%, 23%, and 33% of participants lost 5% or more of their initial weight, while 17%, 25%, and 19% gained weight. At 52 weeks, 48% of participants were clinically weight stable (0 – 4.9% weight loss) and thus did not experience weight gain. On the other hand, 12% of participants lost 10% or more of their initial weight (range from 11.2 to 19.5% weight loss) at 52 weeks.

The weight change in the completers' analysis was also modest. The average weight change for individuals who were attending meetings at 12, 24, and 52 weeks was –1.7, –2.1, and

–3.5%, respectively. The numbers were similar to the LOCF analysis because there was minimal attrition during the study.

DISCUSSION

In this study, we found that it was feasible and acceptable to integrate a nonprofit weight loss program into a community organization that serves older AAs. The feasibility is demonstrated by the fact that 64% of people who were referred to the program or attended an information session participated in the study. The acceptability of the program is demonstrated by the 79% retention at 52 weeks. Overall participants experienced modest weight loss, with 33% of individuals experiencing clinically significant weight loss (5%) at 52 weeks.

Recruitment efforts were successful because of the collaboration between the CAAH and the university researcher. The established relationship between the SWI program coordinator and the target population was essential in the recruitment process because the information about the program was distributed through personalized letters from the SWI coordinator. Furthermore, holding informational meetings and interventions in locations that were already familiar to SWI participants likely increased their interest in the program and helped sustain their involvement.¹¹ Additionally, one of the foundations of TOPS is group support, and the group format likely contributed to the high retention rate.

The sustainability of this program is also noteworthy. Many academic interventions administered in communities end when the grant funding for the project is complete. However, two of the three TOPS chapters continued after the study ended. There are several possible explanations. First, the cost of the TOPS program is low compared to other weight loss programs; TOPS costs \$90 annually, whereas other programs can cost hundreds to thousands of dollars annually. Study participants were able to continue their involvement with minimal financial burden. Second, TOPS is peer-led and does not require specially-educated leaders to administer the programs. Third, the TOPS program is designed for indefinite implementation to assist in weight loss and weight maintenance, whereas other programs are designed for finite durations.

In terms of weight loss, this study had several strengths. It was a longer intervention than is reported in other weight loss studies in AA communities.^{14–16} Many studies had interventions that lasted 16 weeks or less, but gave results at one year. In that context, the weight change outcome in this study is better than the weight change of AAs in other studies. The average 52-week weight change among older AA female completers in the SWITCH study was 2.0% (or 1.7 kg) and 33% of participants lost a clinically significant amount of weight (5%) within that time period. One study implemented a 16-week program based on the Diabetes Prevention Program (DPP) in an AA church and measured weight change at 12 months after the intervention, which was a weight loss less than 0.5% of baseline weight.¹⁴ Another study by the same group that looked at 6- and 16-week DPP-based interventions in AA churches found that participants maintained a weight loss of less than 1% of initial weight at 12 months.¹⁵ Another group trained church members to deliver a 6 month intervention in an AA church and showed that individuals had a 3.2% weight loss over the course of the study.¹⁶ In addition, we started these TOPS chapters in diverse locations (church, senior center, and senior residence). This strategy could potentially improve enrollment in similar programs in the AA community as it reaches out to individuals who do not attend church (compared to church-based interventions).

The current study has several limitations. First, this pilot study did not have a control group. However, numerous other studies in AA populations have shown that control groups tend to

gain weight^{17–19} or lose a minimal amount of weight.^{19–21} Second, the duration of follow up is short. Most people who lose weight tend to re-gain the weight within one year,^{22, 23} and the Institute of Medicine considers weight loss long term if it has been maintained for at least one year.²⁴ In this study, the average weight change appeared to be reaching a plateau, and it is unclear if the weight loss would have been maintained for an additional year. However, the weight change results can be seen as a positive step in the right direction, and a previous TOPS study showed that people who lose weight and renew their membership maintain the weight loss for up to 3 years.¹² Third, the sample of this study was limited in terms of size, race, and gender; therefore, we are unable to discuss the generalizability of the results. The study specifically targeted older AAs and the sample size is consistent with other pilot studies.^{15, 25–27} Nonetheless, this sample is sufficient to allow for an estimation of power for future larger controlled studies. Although men and women were invited to participate in the program, all of the participants were women. This is not surprising for two reasons: 1) most of the SWI participants are female and 2) most of the people who participate in group weight loss programs and studies are female as well.^{12, 28} Of note, the larger, secondary database analysis of TOPS showed that percentage weight loss was similar among males and females.¹²

In conclusion, it was feasible and acceptable to initiate the TOPS program in a community of female AA seniors, and there was clinically significant weight loss in one-third of participants and stable weight in almost half of the participants. The TOPS program was also electively continued in 2 of 3 chapters after study termination, demonstrating sustainability of the program. TOPS may be one way to combat the health disparity of obesity in AAW. Future studies should look at long term sustainability of TOPS in AA populations, and the program should be implemented in other ethnic populations. Furthermore, randomized controlled trials should be performed to compare TOPS to other approaches to weight reduction.

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REFERENCES

1. Flegal KM, Carroll MD, Kit BK, et al. Prevalence of obesity and trends in the distribution of body mass index among US adults, 1999–2010. *JAMA*. 2012; 307:491–497. [PubMed: 22253363]
2. Wang Y, Beydoun MA, Liang L, et al. Will all Americans become overweight or obese? estimating the progression and cost of the US obesity epidemic. *Obesity* (Silver Spring). 2008; 16:2323–2330. [PubMed: 18719634]
3. Go AS, Mozaffarian D, Roger VL, et al. Heart disease and stroke statistics--2013 update: A report from the American Heart Association. *Circulation*. 2013; 127:e6–e245. [PubMed: 23239837]

4. Kumanyika SK, Obarzanek E, Stevens VJ, et al. Weight-loss experience of black and white participants in NHLBI-sponsored clinical trials. *Am J Clin Nutr.* 1991; 53:1631S–1638S. [PubMed: 2031498]
5. Kumanyika, S. Cultural differences as influences in obesity treatment. In: Bray, G.; Bouchar, C., editors. *Handbook of Obesity: Clinical Applications*. 3rd edn. Vol. Volume 1. New York, NY: Informa Health Care; 2008. p. 55-80.
6. Johnston DW, Lee WS. Explaining the female black-white obesity gap: A decomposition analysis of proximal causes. *Demography.* 2011; 48:1429–1450. [PubMed: 21948107]
7. Potti S, Milli M, Jeronis S, Gaughan JP, et al. Self-perceptions of body size in women at an inner-city family-planning clinic. *Am J Obstet Gynecol.* 2009; 200:e65–e68. [PubMed: 19249727]
8. Schuler PB, Vinci D, Isosaari RM, et al. Body-shape perceptions and body mass index of older African American and European American women. *J Cross Cult Gerontol.* 2008; 23:255–264. [PubMed: 18379865]
9. Thomas AM, Moseley G, Stallings R, et al. Perceptions of obesity: Black and White differences. *J Cult Divers.* 2008; 15:174–180. [PubMed: 19202719]
10. James DC, Pobee JW, Oxidine D, et al. Using the health belief model to develop culturally appropriate weight-management materials for African-American women. *J Acad Nutr Diet.* 2012; 112:664–670. [PubMed: 22709771]
11. Kumanyika S. Ethnic minorities and weight control research priorities: Where are we now and where do we need to be? *Prev Med.* 2008; 47:583–586. [PubMed: 18955076]
12. Mitchell NS, Dickinson LM, Kempe A, et al. Determining the effectiveness of Take Off Pounds Sensibly (TOPS), a nationally available nonprofit weight loss program. *Obesity (Silver Spring).* 2011; 19:568–573. [PubMed: 20864948]
13. Martin CK, Talamini L, Johnson A, et al. Weight loss and retention in a commercial weight-loss program and the effect of corporate partnership. *Int J Obes (Lond).* 2010; 34:742–750. [PubMed: 20065969]
14. Boltri JM, Davis-Smith YM, Seale JP, et al. Diabetes prevention in a faith-based setting: Results of translational research. *J Public Health Manag Pract.* 2008; 14:29–32. [PubMed: 18091037]
15. Boltri JM, Davis-Smith M, Okosun IS, et al. Translation of the National Institutes of Health Diabetes Prevention Program in African American churches. *J Natl Med Assoc.* 2011; 103:194–202. [PubMed: 21671523]
16. Kennedy BM, Paeratakul S, Champagne CM, et al. A pilot church-based weight loss program for African-American adults using church members as health educators: A comparison of individual and group intervention. *Ethn Dis.* 2005; 15:373–378. [PubMed: 16108295]
17. McNabb W, Quinn M, Kerver J, et al. The PATHWAYS church-based weight loss program for urban African-American women at risk for diabetes. *Diabetes Care.* 1997; 20:1518–1523. [PubMed: 9314627]
18. Svetkey LP, Erlinger TP, Vollmer WM, et al. Effect of lifestyle modifications on blood pressure by race, sex, hypertension status, and age. *J Hum Hypertens.* 2005; 19:21–31. [PubMed: 15385946]
19. Fitzgibbon ML, Tussing-Humphreys LM, Porter JS, et al. Weight loss and African-American women: A systematic review of the behavioural weight loss intervention literature. *Obes Rev.* 2012; 13:193–213. [PubMed: 22074195]
20. Kim KH, Linnan L, Campbell MK, et al. The WORD (wholeness, oneness, righteousness, deliverance): A faith-based weight-loss program utilizing a community-based participatory research approach. *Health Educ Behav.* 2008; 35:634–650. [PubMed: 17200103]
21. Anton SD, Manini TM, Milsom VA, et al. Effects of a weight loss plus exercise program on physical function in overweight, older women: A randomized controlled trial. *Clin Interv Aging.* 2011; 6:141–149. [PubMed: 21753869]
22. Wadden TA, Foster GD, Letizia KA. One-year behavioral treatment of obesity: comparison of moderate and severe caloric restriction and the effects of weight maintenance therapy. *J Consult Clin Psychol.* 1994; 62:165–171. [PubMed: 8034818]
23. Curioni CC, Lourenço PM. Long-term weight loss after diet and exercise: A systematic review. *Int J Obes (Lond).* 2005; 29:1168–1174. [PubMed: 15925949]

24. Thomas, PR. Weighing the options : criteria for evaluating weight-management programs. Washington, D.C.: National Academy Press; 1995. Institute of Medicine (U.S.). Committee to Develop Criteria for Evaluating the Outcomes of Approaches to Prevent and Treat Obesity.
25. Mayer-Davis EJ, D'Antonio A, Martin M, et al. Pilot study of strategies for effective weight management in type 2 diabetes: Pounds Off with Empowerment (POWER). *Fam Community Health*. 2001; 24:27–35. [PubMed: 11373164]
26. Damschroder LJ, Lutes LD, Goodrich DE, et al. A small-change approach delivered via telephone promotes weight loss in veterans: Results from the ASPIRE-VA pilot study. *Patient Educ Couns*. 2010; 79:262–266. [PubMed: 19910151]
27. Dodani S, Fields JZ. Implementation of the fit body and soul, a church-based life style program for diabetes prevention in high-risk African Americans: A feasibility study. *Diabetes Educ*. 2010; 36:465–472. [PubMed: 20508263]
28. Heshka S, Anderson J, Atkinson R, et al. Weight loss with self-help compared with a structured commercial program: A randomized trial. *JAMA*. 2003; 289:1792–1798. [PubMed: 12684357]

Table 1

Baseline Participant Characteristics.

	Mean ($\pm$SD)/Median (25%, 75%)^a
Gender (N, % women)	48 (100)
Age (years)	69.6 ($\pm$ 8.5)
Weight (kg)	88.2 (78.9 – 100.7)
BMI (kg/m ²) (N=39) ^b	34.9 (31.5 – 40.2)
Race/Ethnicity (N, % of Total)	
African American	47 (98%)
Latina	1 (2%)

Abbreviation: BMI, Body Mass Index; kg, kilograms; m, meters.

^a Mean($\pm$ SD) reported for data with normal distribution. Median (25th – 75th percentile) reported for data with non-normal distribution.

^b N= 48 for table, except for BMI where N=39 because height was not available for all participants.

Table 2Weight change in kg and percentage by last observation carried forward and completers' analyses.^a

	Weight change (kg)	Range	Weight change (%)	Range
All participants (N = 48)				
12 weeks	-1.7 (±2.7)	-11.3, 3.2	-1.8 (±2.9)	-13.4, 2.7
24 weeks	-2.1 (±3.7)	-13.9, 5.8	-2.3 (±4.0)	-16.5, 4.8
52 weeks	-3.1 (±5.2)	-18.9, 5.1	-3.5 (±5.5)	-19.5, 5.8
Completers				
12 weeks (N = 47)	-1.6 (±2.7)	-11.3, 3.2	-1.8 (±2.9)	-13.4, 2.7
24 weeks (N = 45)	-2.1 (±3.8)	-13.9, 5.8	-2.3 (±4.1)	-16.5, 4.8
52 weeks (N = 38)	-3.3 (±5.3)	-18.8, 5.1	-3.5 (±5.6)	-19.5, 5.8

Abbreviation; kg, kilograms.

^aMean (±SD).

Table 3Weight change by category.^a

Weight change category	12 weeks	24 weeks	52 weeks
All participants	(N = 48)	(N = 48)	(N = 48)
Loss 5% (%)	5 (10)	11 (23)	16 (33)
Loss 0 – 4.9% (%)	31 (65)	27 (56)	23 (48)
Gain (%)	12 (25)	10 (21)	9 (20)
Completers	(N = 47)	(N = 45)	(N = 38)
Loss 5% (%)	5 (11)	11 (24)	14 (37)
Loss 0 – 4.9% (%)	30 (64)	23 (51)	16 (42)
Gain (%)	12 (26)	11 (24)	8 (21)

^aColumns may not total 100% due to rounding.