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The development of *SisterTalk*: a cable TV-delivered weight control program for black women

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Abstract

Overweight and obesity have reached epidemic proportions in the United States, with black women disproportionately affected. *SisterTalk* is a weight control program designed specifically for delivery to black women via cable TV. The theoretical and conceptual frameworks and formative research that guided the development and cultural tailoring of *SisterTalk* are described. Social Action Theory was applied in the development of *SisterTalk* along with a detailed behavioral analysis of the way that black women view weight and weight loss within the context of their cultural and social realities. The entire intervention development process was framed using this information, rather than by changing only superficial aspects of program delivery. Community networking and both qualitative and quantitative interview techniques from the fields of social marketing and cultural anthropology were used to involve black women from Boston in the design and implementation of a program that would be practical, appealing, and culturally sensitive. Also discussed are strategies for evaluating the program, and lessons learned that might have broader applicability are highlighted. The development of the *SisterTalk* program could provide a useful starting point for development of successful weight control programs for black women in other parts of the United States as well as for other ethnic and racial groups.

Keywords: Obesity; Weight control; African-American; black women; Cultural tailoring; Health education; Audiovisual; Social action theory; Culture

Introduction

Obesity is now considered epidemic in the United States and is a high priority for preventive and therapeutic interventions [1,2]. The marked increase during the past two decades has occurred despite a high prevalence of dieting for weight loss or weight maintenance [3–5]. Weight loss, even moderate weight loss, can reverse many of the adverse consequences of obesity, but effective strategies to facilitate permanent weight loss have been difficult to achieve [6].

An excess of obesity among black women has been apparent for several decades [7]. Using body mass index (BMI) $\geq$30 kg/m^2 to define obesity, the prevalence in the 1999–2000 National Health and Nutrition Examination Survey data [1] was 50% in black women aged 20 years and older, compared with 30% in white women in this age range. Excess obesity in black women is observed across socioeconomic strata [8,9] and may contribute to the marked health disparities between black and white women

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[7,10]. Compared with white women, black women are more likely to gain weight [11,12] and less likely to lose weight during young adulthood [13] even after controlling for related factors such as the number of children [14]. The disproportionate occurrence of obesity and related health problems in black women highlights the need for effective weight management programs in this population group.

Weight loss attempts are equally prevalent among black and white women in the general population, but are less prevalent among black women after adjusting for the difference in mean BMI levels [5] and are of shorter duration [15]. Several clinical trials and observational studies involving a variety of treatment modalities have reported smaller weight losses in blacks than Whites [16–20]. Some of this difference in program effectiveness may relate to participation or adherence variables that could be addressed by cultural adaptation of program design and format [6,21,22].

Several reports of programs specifically designed for black Americans have been published. Examples include the Community Health Assessment and Promotion Project (CHAPP) program for black women in Atlanta [23], the PATHWAYS program for low-income black women in Chicago [24,25], the multicenter Black American Lifestyle Intervention (BALI) for low-income black women in Boston, Houston, New York, and Los Angeles [26], and the POSSE study for older African-American men and women with type 2 diabetes in Washington, DC [27]. These programs, which used a small group approach that required participants to attend a series of classes at a central location, all demonstrated at least modest effectiveness. Unfortunately, such programs may be expensive to implement, are not available in all settings, and, even where available, may be poorly used by those for whom attendance at classes is inconvenient or infeasible [22,28].

This article describes the design and development of *SisterTalk*, an alternative approach to weight loss programming designed for delivery to black women in their homes via cable television (TV). Most Americans, particularly low-income individuals, list TV as a major source of their health information [29–33] and 98% of American households own at least one TV set [34]. TV programs are amenable to culturally tailored content and to the delivery of information in an entertaining audiovisual format that may be particularly effective for individuals with low literacy skills [35]. However, it is unknown whether TV alone, without the interaction and social support usually involved in face-to-face group programs, will be successful. Interactive learning, thought to be more effective than passive learning, has been a prominent theme in culturally adapted programming for low-income black Americans [22]. Furthermore, the social support aspects of face-to-face group programs facilitate motivation and behavior change [36,37]. The *SisterTalk* project is evaluating the effectiveness of adding telephone-based interactive and/or social support components as possible enhancements to a cable TV-delivered weight control program. Modern communications technologies make the addition of both types of program enhancements affordable and feasible.

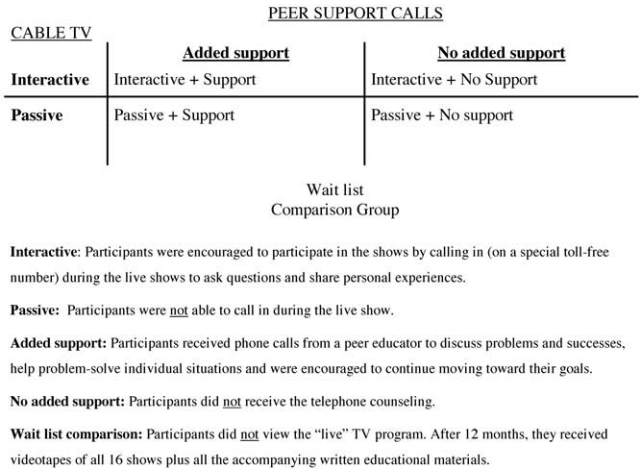

Fig. 1. *SisterTalk* research design.

This article describes how we used theory, community partnerships, and extensive formative research to develop *SisterTalk* and make it culturally sensitive for black women in Boston, Massachusetts, which has a diverse black population (with 35% from Africa or Caribbean island nations [38]). We then discuss strategies for evaluating the program and highlight lessons learned that might have broader applicability.

Overview of the *SisterTalk* program

The core *SisterTalk* intervention consisted of 12 one-hour weekly programs broadcast live on cable TV. Participants also received a *SisterTalk* binder with written educational materials corresponding to the first two shows, and biweekly mailings of additional written materials for the remainder of the core TV program. These materials were interactive, corresponded with the shows' content, and had an average Flesch–Kincaid reading level [39] of less than sixth grade. After the 12-week TV show series, participants received four half-hour booster videotapes and related written materials by mail at monthly intervals, to assist with maintenance of behavior changes.

The interactive component of *SisterTalk* allowed participants to call in live during the show using a special toll-free telephone number, to ask questions, and to share personal experiences. The social support component involved motivational phone calls (weekly for 12 weeks and then monthly for 4 months) from a peer educator. Peer educators were lay women hired from the local black community who underwent 30 h of training to provide problem solving and social support around nutrition and physical activity. The evaluation study examined the delivery of *SisterTalk* with and without these interactive and social support components using a randomized 2 × 2 factorial design, with an additional wait-list comparison group as a control (see Fig. 1).

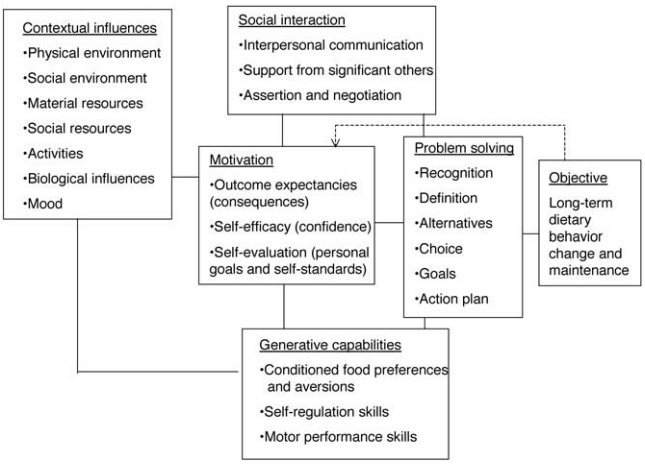

Fig. 2. Social Action Theory framework. Reprinted, with permission, from [40].

We used the pay-per-view feature of cable TV so that only women enrolled in the intervention could access the *SisterTalk* shows. Participants were not charged for their pay-per-view, and the study furnished basic cable TV service for any participant who could not pay for it (19% of study participants). Participants who were unable to view the TV broadcast when it aired could call the project's toll-free number to order a free videotape of the missed show. Women in the wait-list group received "attention placebo" mailings about other nonrelated health issues, i.e., cancer screening, injury prevention. One year after baseline, they received a mailing that included the entire 16-session *SisterTalk* TV program on videotape and accompanying written materials.

Theoretical and conceptual frameworks

The *SisterTalk* behavioral change approach was based on Social Action Theory (SAT). As shown in Fig. 2, SAT integrates cognitive and social processes known to influence the acquisition and long-term maintenance of lifestyle behaviors [36,40,41]. In SAT, behavioral change follows the development of problem-solving skills oriented to health-promoting behaviors. Problem solving requires both knowledge about the elements to be changed and motivation for change. Motivation is enhanced by the expectancy that the new behavior (e.g., behaviors leading to weight reduction) will result in tangible benefits (e.g., improved quality of life), by improved self-efficacy for the new behaviors, and by incorporating the new behaviors and self-image into personal identity. The context for making changes is improved by the ability to remove constraints to, and increase logistical and psychosocial support for, the new behaviors, and by the development of specific coping strategies to address problems as they arise.

We applied SAT within the conceptual framework of Kumanyika et al. [21,42] for relating cultural influences to weight management programs. In this framework, developing programs that are culturally sensitive goes beyond logistical adaptations (e.g., location or time of day when program is held) to reframe the entire process in light of the cultural and social realities of the target audience. For example, in designing a weight control program for Black women, such reframing potentially involves a thorough examination and assessment of: (1) how educational messages will be interpreted and processed by the target audience; (2) the structure and packaging of the information; and (3) the language and imagery used, based on a detailed behavioral analysis of what weight control might mean from a black woman's perspective.

Resnicow et al. [43,44] define cultural sensitivity as "the extent to which ethnic/cultural characteristics, experiences, norms, values, behavioral patterns and beliefs of a target population as well as relevant historical, environmental, and social forces are incorporated in the design, delivery, and evaluation of targeted health promotion interventions." Cultural tailoring is defined as the process of creating culturally sensitive interventions [43,44]. According to these authors, culturally sensitive interventions can be conceptualized by two primary dimensions: surface structure and deep structure [43,44]. Surface structure involves matching intervention materials and messages (channels and settings, people, places, language, music, food, brand names, locations, and clothing) to observable social and behavioral characteristics of a target population [43,44]. Deep structure involves core cultural values, as well as how ethnic, cultural, social, environmental, and historical factors may influence specific health behaviors [43,44]. As described below, we attempted to tailor to both surface and deep structure in developing *SisterTalk*, by involving black women from low-income communities in Boston in several types of formative research and in pretesting elements of the intervention as they evolved.

Community outreach and partnerships

Partnerships and networking

Prior to writing the *SisterTalk* grant application, we established partnerships with two Boston organizations, Brigham and Women's Hospital (a Harvard University affiliate located in a target neighborhood), and Cablevision (the primary Boston cable television provider), both of whom were key collaborators on the project. Several months before formal project funding started, we began networking activities in Boston to develop further positive relationships with other academic, professional, and community organizations with relevant interests (e.g., BOND of Color, an association of Black nutritionists and dietitians; Roxbury Community College; and the Black Ministerial Alliance of Boston). We forged a particularly important

Fig. 3. *SisterTalk* logo.

partnership with the Sisters Together project, which was conducted in Boston by the Harvard School of Public Health from 1995 to 1998 [45,46]. This campaign project, which focused on increasing activity and healthful eating among young black women, was entering its institutionalization phase as *SisterTalk* was beginning and had already developed affiliations and a positive reputation with local groups and agencies. For continuity from the community's perspective, we considered it important to position *SisterTalk* as integrated with relevant, preexisting programs like Sisters Together.

After formal project funding began in June 1997, we began additional networking activities including attendance at community events that focused on black women's issues, women's health, or community health. We also sponsored a communitywide contest to identify a program logo. The winner, a black woman from the local community, later became one of the *SisterTalk* community outreach educators. A local African-American graphic artist produced the final form of the *SisterTalk* logo (see the black and white version in Fig. 3).

Community outreach educators

At the beginning of the formative research and program development process, we hired six community outreach educators (COEs), lay women from the Boston black community, to act as guides and advisors. Their roles included: orienting the project staff geographically, politically, and socially to the black neighborhoods in Boston; making introductions to organizational "gatekeepers" and neighborhood "key informants" to facilitate recruitment for focus

groups; and generating interest in the program. Additionally, the COEs conducted neighborhood inventories to identify "gathering" places where we could reach large numbers of black women for information dissemination, data collection and recruitment, as well as locations for physical activity. The COEs were later trained as the peer counselors for the telephone social support component of *SisterTalk.*

Formative research

Focus groups

Focus groups are a group interview technique used to explore insights of target audiences about a specific topic [47–49]. We used focus groups to create a dialogue with community members about developing a weight management program that would be sensitive to the needs, concerns, and realities of a variety of black women, including those of low income. Our focus groups explored current dietary and exercise patterns, identified barriers and facilitators of diet and physical activity change, and examined the social and cultural contextual influences that affect food choices and physical activity as these relate to weight loss and control among black women. We also explored how social factors interplay with individual choice and contribute to weight gain, loss, and control, including different cultural interpretations of the body, and the sociocultural influences on the decisions people make about food and exercise. In addition, focus groups explored practical matters related to video production, including appropriateness of presentation styles, formats, potential on-screen talent, and imaging issues.

We conducted 28 focus groups with a total of 193 black women at nine different community sites over an 8½ - month period from August 1997 to May 1998. Participant recruitment methods included posters and flyers at community locations in target neighborhoods, as well as face-to-face recruitment by the COEs and community partnership contacts. We held about half of the focus groups at community locations such as neighborhood community centers, housing developments, and churches, while the other half were held at the Brigham and Women's Hospital. An experienced, female focus group moderator and a co-moderator led the focus groups. At every group, at least one of these leaders was African-American so that most teams included both black and white moderators. Each group lasted approximately 2 h and we provided light refreshments. Following completion of the informed consent, the moderators opened the groups with an "ice-breaker" activity. They then followed a script outline to ensure inclusion of desired topic areas, but with the flexibility to allow for generation of new avenues of inquiry or revisiting earlier topics. All focus groups were audiotaped, and each participant received $25.

Focus groups ranged in size from 4 to 13 participants, with an average of 7 participants per group. Participants ranged in age from 20 to 65. About 75% self-identified as "black" or "African-American," and almost all (94%) were born in the United States. More than a high school education was reported by 53% of participants, while 26 and 21% reported high school/GED completion and less than high school, respectively. Half of the group participants reported working outside the home (31% full time, 19% part time), while 11% were homemakers and 39% were unemployed.

The process of transcribing and analyzing focus group data was ongoing. An anthropologist and a social marketing expert carried out several stages of analytic coding [50] for each transcript to extract themes and concepts relevant to the intervention format and content. They read the transcripts through as texts to identify broad themes and to become familiar with issues that were covered within each focus group. Project team members explored emerging themes as a group, and identified issues that could influence program design. In addition, because formative qualitative research is an iterative process, these discussions led to identification of new topics for inclusion in subsequent focus groups and in the marketing survey. We then used the qualitative data management software QSR NUD*IST to apply a fine-level taxonomic coding structure to the transcript texts, which facilitated information retrieval for content analysis [51,52].

Telephone survey

To assess the prevalence of specific attitudes and behaviors that we identified in the focus groups, and to further test ideas that might be included in the intervention in a broader, more representative sample, we conducted a telephone survey with black women in Boston. Phone numbers were identified through random-digit dialing of Boston telephone exchanges within areas identified by the Census to have a higher percentage of black residents. The survey included questions regarding food habits, cooking, dining out, emotional eating/stress, attitudes, barriers to and support for dietary and physical activity change, as well as demographics. We also asked questions pertinent to the format and timing of the show as well as preferred prizes and incentives.

The survey involved 309 respondents. After the first 63 interviews (20% of the total) we decided that the full survey was too long (>40 min). We shortened the survey by asking a limited number of detailed, open-ended questions of a subset of the remaining subjects, while others were asked the close-ended questions. Participants who completed open-ended ($n = 91$) or close-ended ($n = 155$) questions only were similar demographically to those who completed both ($n = 63$). More than half of the overall sample were married, worked full time, were low-middle income ($20,000–$50,000), and were between 30 and 60 years old; 85% reported being of Christian religion. The sample was evenly divided between those with educational levels of

"high school (or less)," "some college," and "college graduation."

The quantitative data from this survey were analyzed by exploring frequency distributions, e.g., prevalence of various attitudes or behaviors. The open-ended survey responses helped us to obtain depth of understanding of the range and nature of possible barriers and facilitators to weight control. Overall, the marketing survey data confirmed and in some cases added to our understanding of the issues and helped us to determine the proper emphasis for certain content in *SisterTalk.*

Translation of formative research findings: *SisterTalk* program development

Methods

We determined possible content elements for both the TV shows and accompanying written materials based on accepted best practices in behavior change programming. The 2-year process of *SisterTalk* program development involved several complementary approaches for selecting, shaping, and packaging these elements. Our diverse research team conducted detailed, iterative reviews of the formative research findings. We confirmed major themes suggested in the formative research by reference to the literature on black women and families, including descriptions of eating and activity patterns and preferences and communication styles [53–62], and on the prior experience with nutrition or weight control programs that had been adapted for women or black adults [23–27,63]. In keeping with the importance of direct life experience for understanding the deeper structure and nuances of cultural concepts [43,44,53], the black investigators and professional staff on our team, as well as the COEs, were heavily involved in translating the available information into the ultimate *SisterTalk* program.

Discussions with the COEs were especially important both to verify which themes were salient for the diverse population of black women in Boston and to provide sufficient detail in images and language for TV program scripts and supporting educational materials. For example, the COEs reviewed a wide variety of health education materials and alerted the rest of the team to concepts, vocabulary, approaches, and imagery that they did or did not find credible, informative, and motivating. Though we had been guided by basic tenets of adult education for audiences that may have limited literacy skills, the COEs' ongoing, immediate feedback showed us the importance of mediating pure written information with interactive elements such as circling responses, filling in answers, goal writing, puzzles, enlivening presentations with culturally appropriate visual elements, and delivering information in a clear and simple manner. The COEs' identification with the project grew as they saw that their ideas and opinions were truly influencing program development, which further enriched their contributions.

Results

SisterTalk TV show format

The weekly 1-h live TV shows involved three black female hosts, an exercise physiologist, a registered dietitian, and a social worker, who all had experience working with low-income black clients. The tone of the shows was one of participation and empowerment. Core content was divided between nutrition and physical activity information, with behavior change, stress reduction, and self-management principles integrated throughout. During the first 40 min or so of each show, the exercise physiologist and nutritionist presented the primary program content, much of which was prerecorded. During the last 20 min, the social worker led the "sharing" component, which was "live" and consisted of a discussion between the social worker and featured guests. During the discussion, the social worker highlighted the behavioral principles for the week and provided positive reinforcement and modeling of effective problem solving. For at-home participants enrolled in the "Interactive" condition, the social worker invited direct participation through the "call-in" number.

Culturally tailored elements

Cultural and contextual issues (i.e., potential barriers of change) identified through formative research were integrated with theoretical concepts from SAT to design and "culturally tailor" *SisterTalk's* content, imagery, and format as highlighted in Table 1. Several aspects of the intervention addressed "deep structure" using the framework of Resnicow et al. [43,44]: (1) helping black women understand how taking better care of themselves is relevant to their roles and personal identities as caregivers; (2) motivating weight control within the framework of normative obesity/overweight and complex, culturally influenced body image issues; (3) directly addressing the high levels of psychosocial stress and emotional eating; (4) providing peer role models; (5) addressing certain food-related social and cultural traditions; and (6) using presentation styles that convey authenticity and respect.

Ways in which we tailored *SisterTalk* to elements that might be considered "surface structure" [43,44] include: (1) the African-inspired art evident in the logo and throughout the program; (2) scenes from the Boston Black Freedom Trail; (3) use of black poetry and literature, including an adaptation of Langston Hughes' poem "Mother to Son" [64] to a "sister-to-sister" version; (4) citations from black health authorities such as Dr. David Satcher, the former surgeon general, and local influential black physicians; (5) inclusion of commonly eaten African-American and West Indian dishes; and (6) demonstrations of African dance and funk aerobics.

SisterTalk's presentation style was lighthearted and did

Table 1
Examples of translation of formative assessment findings into operational strategies for *SisterTalk* television shows

Cultural and social issues identified for consideration in intervention design			Links to social action theory domains*				
Topic	Specific finding	Way in which the issue was addressed in the program	CI	SI	M	GC	PS
Black female identity	Importance of ownership of the program by the black community	Frequent use of ordinary women as role models			X		
		Toll-free call-in number for women to call in suggestions for the program		X			
		Publicize the involvement of black women from the community in developing the program and the program logo, i.e., the program is "by sisters for sisters"	X	X			
Body image issues	Many want to weigh less but do not necessarily view self as unattractive	Emphasize improving healthfulness of eating and activity patterns and deemphasize weight loss as the primary goal	X		X		
	Many were worried they'd lose weight in the "wrong places," i.e., the buttocks instead of the stomach	No specific target for weight loss per week			X		X
	Not preoccupied with becoming thin	Individualized goals and "getting to your best body"			X		
	Some were antagonistic that "others," i.e., researchers, might want them to be thin	Language used does not assume that goal is weight loss	X				
		Identify multiple possible criteria of success			X		
		Emphasize potential immediate benefits of weight loss			X		
Communication styles and learner preferences	Variable responses to mainstream information	Real-life testimonials from diverse women engaged in weight control attempts	X				X
	Credibility of black spokespersons	"Woman on the street" interview segments	X		X		
	Ability to identify with speaker	Cite black health authorities such as U.S. Surgeon General David Satcher	X		X		
	Dislike for school-type learning situations	Use light but serious tone by juxtaposing humor and "heart-to-heart" delivery style				X	
	Dislike for being "talked down to"	Peer—"sister-to-sister"—approach rather than authority or expert style			X	X	
		Show personal side of nutrition and exercise professionals by showing them home and with family members			X		
Cultural symbols	Usefulness of visible symbols that the program is oriented toward black women	African-inspired art in *SisterTalk* Logo (see Fig. 2) and television program set design	X		X		
		Ethnic dance forms in exercise segments			X	X	
		Incorporation of black poetry and other literature	X		X		
Family-centeredness	Strong identity as caregivers	Devote entire first show in series to this issue	X		X		
	Cultural context with an ethic of mutual aid and interdependence	Emphasized concept that taking care of oneself will help in meeting responsibilities to others			X		
	May equate self-care with selfishness	Emphasized concept that preventing illness helps to avoid becoming a burden to others	X		X		
Food preferences	Diverse black community	Include both West Indian and traditional African-American foods	X			X	X
	Many highly valued ethnic foods	Suggest lower-fat or lower-calorie makeovers for traditional foods				X	X
		Recommend eating smaller portions of "high-calorie" favorite food or eating them less often rather than recommending total avoidance	X			X	X
Physical activity practices	Possible dislike for "exercise"	Emphasize moving more rather than exercise as such					
	Variable capability for exercise	Focus on moderate activities such as walking			X	X	
	Practical barriers to certain types of activities	Show options for exercise intensity led by women of various ages and body types.			X		X
		Frequent footage of real women in the black community doing a variety of activities			X		
		Positive role models for physical activity			X		
		Included a brochure entitled Hair Care Tips for Sisters on the Move as hair care is a barrier to physical activity					X
Practical aspects of adherence	Numerous potential practical barriers to making permanent changes in eating and activity patterns	Role models to show how real women have addressed these issues in their daily lives			X		X
		Use commonly eaten foods and common activities when illustrating how to make changes			X	X	X
		Provide suggestions for minimal changes to accommodate a slow start when needed			X		X

Table 1 (*continued*)

Cultural and social issues identified for consideration in intervention design			Links to social action theory domains				
Topic	Specific finding	Way in which the issue was addressed in the program	CI	SI	M	GC	PS
Psychosocial stress	Universally high-stress lifestyles	Teach meditation, yoga, and self-massage on show				X	X
		"Smooth Moves" segments with stretching to relaxing music			X	X	
		Offer stress-relieving prizes such as gift certificate for massage, relaxation goodie basket, a foot massager, etc.			X		
Social connotations of eating and food preparation	Cultural obligation to prepare food	Explain cultural context for evolution of traditional food habits to help allay guilt about, promote reflection on roles, and decrease related stress	X				
	Multiple food-related roles	Address environmental triggers to eating that are embedded in food preparation	X				X
	High status assigned to food gatekeepers		X				
Social eating situations	Cultural traditions of feasting	Emphasize ways to work around or within problematic situations rather than convince others to change their eating habits		X			
	Strong social pressures to eat	Offer innovative strategies to avoid overeating, incorporating specific suggestions from formative-phase group interviews, including how to talk to others when they encourage you to overeat		X			X
	Encourage each other to eat heartily at community and family events	Suggest the use of health reasons rather than weight loss as reason for not overindulging			X		
	Many high-calorie ethnic foods					X	
Social norms	Normative aspects of overweight among black women	Focusing frequently on active and health-conscious role models			X		
	Environment does not include exposure to weight loss and activity info that would encourage them to envision themselves with a more slender physique		X				
Social support for weight control	Cultural attitudes not necessarily supportive of weight loss	Frank discussion of social support issues on program, including clarification of how nonsupport for weight loss is displayed		X			
	Fear of male partners' suspicions of woman's weight loss, including fear that weight loss might be interpreted as due to sickness or drug use	Offering strategies for addressing nonsupportive behaviors		X			
		Suggesting culturally acceptable alternatives for self-affirmation and support, e.g., meditation, prayer, reading inspirational books	X	X			

* [36,40,41]

not talk down to viewers. The shows presented the information in a relaxed dialogue with frequent demonstrations. Humor juxtaposed with a more "heart-to-heart" delivery of information added spice and made learning feel less like being in school. We used "sister-to-sister" communication in most of our programs, including "testimonies" and woman-on-the-street style statements pertaining to the topics under discussion. These testimonies contributed to the sense of the program being "authentic" and showed how women from a wide spectrum of economic and social strata had issues in common.

The importance of authenticity and "sister-to-sister" communication also influenced our decision to use "real" women versus professional actors as show hosts. Presenters on the show were to seem "accessible," easy to identify with, and struggling with behavior changes themselves. Program segments gave insight into the hosts' personal lives, with some of the filming done at their homes and jobs. We also featured interesting/talented local black residents, including a masseuse, an Afro/Jazz dance teacher, two chefs, community leaders, and many "regular" women, as they were realistic and tangible models for behavior change. Throughout, the format and content emphasized that the program is "by the Sisters. . .for the Sisters." We emphasized that the show was the result of interviewing hundreds of black women in the Boston area and offered *SisterTalk* participants the opportunity to shape future programs by calling us.

Nutrition, physical activity, and behavior change content

Table 2 outlines the content of 12 core *SisterTalk* shows. The focus was not on weight loss per se, but on weight control as defined by each individual woman, which could include maintenance of current weight. The program subti-

Table 2
Key elements of *SisterTalk* weekly television programs

Session No. and behavioral theme	Behavioral objectives	Nutrition objectives and content	Physical activity objectives and content
1. Introduction of program themes and principles; establishing partnerships; empowerment	• Identify with hostesses as knowledgeable but "real" people • Feel welcomed based on the diversity (age, size, varied styles) of black women involved in the program • Feel empowered and valued by ability of program participants to contribute their ideas to the program • Feel comfortable with program goals and expectations • Prepare for successful but gradual behavior change • Begin self-assessment of eating and activity patterns	• *SisterTalk* definition of "healthy eating": —eating a variety of foods —eating more fruits and vegetables and other plant foods —eating less fat —drinking more water —enjoying food, but eating some foods less often or in smaller quantities	• *SisterTalk* definition of "be more active" —"moving more" in ways that are fun and pleasurable (not painful or like hard work) —meeting the Surgeon General's recommendation to be active 30 min per day (in bouts of 10 min or more) on all or most days of the week • Different approaches to "moving more" (e.g., trying new activities, increasing intensity, frequency or duration of activity) • *SisterTalk* goals of increasing active time and decreasing inactive time —3 min of stress reduction/body awareness —10-min exercise segment
2. Self-awareness; self-monitoring; introduction to goal setting	• Tailor behavior change plan to fit own unique circumstances • Benefits of self-monitoring eating and activity patterns • How to complete a food and activity diary • Increasing self-efficacy for behavior change by: —recognizing her own existing skills —exposure to testimonies (vicarious experiences) • Assigned to self-monitor inactivity	• Associations of calories, fat, and body weight with health outcomes such as heart disease • Calorie balance theory • Macronutrients in foods • Food Guide Pyramid	• First black surgeon general (Dr. David Satcher) authored current physical activity recommendations • Recommendation to build up gradually to 30 min of daily activity • Warning signs of physical distress • Awareness of body signals • Personal goal to spend more time moving and less time not moving • 3 min of stress reduction/body awareness • Chair exercises (10 min)
3. Self-awareness and self-monitoring (continued) goal setting; self-reinforcement	• Appreciate achievement of small goals in order to "build on success" • Be aware of the pitfalls of self-criticism • Start by increasing existing eating and activity behaviors that are healthful • Caregiving for others cannot preclude self-care • Role models for how to identify possible goals • Choose realistic personal goals	• Review prior week's food and activity diary based on new information • Reduce fat intake without creating a sense of deprivation • Basic fat reduction strategies • Packaged foods, visible fat in meat, cooking and seasoning foods	• 3 min of stress reduction/body awareness • Review prior week's activities • Take pride in even small achievements • Not too late to start being active • Review importance of self-monitoring • Role models for activity choices, diary utilization, and goal setting • Qualities of a good goal • 10-min workout
4. Self-awareness and self-monitoring (continued); goal setting (continued)	• Value of self-rewards • Steps in "action planning": —Think about it —Get prepared —Take action • Role models for action plans • Testimonials about self-rewards	• Nutrition facts food label • Self-efficacy for label reading: —Label components (serving size, caloric content, fat content) —Review role of fat reduction in weight control —Review examples of label comparisons to illustrate use in shopping —Relate label information to personal concept of a serving size —Compare calories and fat content of meals with a large versus a small steak	• 3 min of stress reduction/body awareness • Positive benefits of being more physically active for: —Mental health —Body image and appearance —Physical health • Role model for goal setting and reward selection • Review prior week's goal, set new goal • Make goals concrete by writing them down • Assigned to try to increase activity by 10 min per day • 10-min workout
5. Social support; skill building and practice	• Social support • Testimonials about what constitutes support for different women • How to choose a positive, social support person and how to elicit social support • How to use affirmations	• Breakfast —Importance as a meal —Fast breakfasts —Incorporating whole-grain products —Cutting calories in weekend breakfasts —Additional ways to cut fat at breakfast	• Physical activity with a support person: —stretching routine —negotiating social support —identifying a good support person for activity • Ancillary support roles (e.g., helping with child care) • Backup plans for activity • Assigned to practice and keep a written record of handling roadblocks • Making agreements with exercise partners • 10-min workout
6. Barriers and facilitators; skill building and practice	• Definitions of barriers and facilitators • Testimonies about barriers and facilitators • Creative solutions to overcoming barriers	• Lunch: —Role in controlling hunger —Quick lunches —Packing lunch ahead of time —Financial savings —Practice in lunchtime challenge (ranking four lunches according to fat content) —Lunch choices at the supermarket	• Staying motivated (inspirational reading from Langston Hughes poem) • 3-min stretch routine • Meditation for stress reduction • 10-min aerobic workout • Hair care
7. Stimulus control; skill building and practice control	• Define triggers • Examples of triggers related to eating • Examples of triggers related to being active or inactive • Becoming aware of triggers in your environment • Changing triggers in your environment	• Balanced meals —Components —Visual identification • Using low-fat cooking strategies • Creating a relaxed atmosphere at dinner • Involving family members in meal preparation	• Staying motivated (inspirational reading) • Anticipating and recovering from relapses and weight regain

Table 2 (*continued*)

Session No. and behavioral theme	Behavioral objectives	Nutrition objectives and content	Physical activity objectives and content
8. Self-talk (cognitive restructuring); skill building and practice	• Recognize tendency toward negative self-talk • Appreciate power of negative self-talk • Recognize importance of positive self-talk • Learn how to substitute positive self-talk for negative self-talk	• Meal planning and supermarket shopping • Benefits (saves time and money) • Strategies —Shopping list —Coupons —Buy in season —Serve smaller portions —Buy leaner meats —Cook ahead —Buy rice, e.g., in bulk —Use low-fat frozen meals	• Reminders about general safety measures • Dance class (local) demonstration as alternative to gym • Preventing foot injuries • 10 min of chair exercises
9. Emotional eating; stress reduction	• Define emotional eating, with examples • Causes of emotional eating • Overeating among overweight women • Psychological hazards of "stuffing down" emotions with food • Cycle of emotional eating and how to break it • Benefits to breaking cycle of emotional eating • Personal triggers to unconscious eating • Concept of "mindful eating" and ways to avoid eating when not hungry	• Emotional eating (see behavioral objectives)	• Understand the nature of stress reactions and variability in the response to stress • Appreciate the role of physical activity in reducing stress • Learn massage techniques for reducing stress • Learn acupressure techniques and their potential benefits in ameliorating various disorders
10. The behavior chain; skill building and practice	• Define a behavior chain • Analyze examples of behavior changes • Discuss alternative to behaviors in a chain	• Become aware of possible benefits of daytime snacking • Learn strategies to avoid nighttime snacks • Recognize a variety of healthy snacks • Identify and learn ways to avoid high-fat snacks and desserts	• Purpose of yoga stretching, sample • Concept of "activity snacks"—learning how to fit activity into daily routine • 10-min aerobic workout
11. Social negotiation	• Understand inherent challenges in social situations related to pressure to overeat • Strategies for coping with party eating • Personal plan of response to social eating situations • Recipe for light, low-fat cake		• Learn appropriate stretches for walking • Identify activities to incorporate into an outdoor party • 10-min aerobic workout
12. Skill building and practice; problem solving	• Motivation for maintenance after shows end • Reassurance about *SisterTalk* booster programs for continued support • Feel good about accomplishments • Continue making small changes • Recognize danger signs •Ways to avoid slips and relapses	• Making better choices at fast food restaurants	• Principles of posture stabilization and weight training • Use of household objects for weight training • New techniques for "crunches" • 10-min workout

tle was "Journey to Your Best Body," encouraging women to define a "best body" for themselves. The main goals were to help establish behavior changes in diet and physical activity to improve health. In this sense, the focus was more consistent with a "health at any size" approach [65,66] than with a traditional weight loss approach [6].

Nutrition. The overall goals of the nutrition section were consistent with national dietary recommendations [67] to eat less fat and fewer calories; to eat more fruits, vegetables, and grains instead of animal foods; to drink more water; and to eat a variety and a balance of foods in an enjoyable, relaxed way. We celebrated healthful favorite foods such as chicken, greens, sweet potatoes, West Indian rice dishes, etc., and depicted lower-fat makeovers of favorite foods, such as oven-fried chicken. The formative research indicated that black women viewed pressure from family and friends to overeat at social events as a major problem. We incorporated suggestions from focus group participants about ways to work around this problem, such as "Walk around with a few chicken bones on your plate, and complain about how stuffed you are," and "Tell people you're watching your cholesterol or blood pressure." We also addressed dynamics of emotional eating, which appeared to be an issue for many black women.

Physical activity. The overall goals for the activity segment were to: increase both lifestyle and leisure-time activity; increase overall movement; and decrease sedentary behavior. The program also had a strong emphasis on the use of physical activity for stress reduction. Each program included a 10-min participatory segment that led women through an activity session, which differed each week. The three exercise leaders, all black women who were certified aerobics instructors, included one younger woman who was overweight (but very energetic), one instructor who was over age 50 and slightly overweight, and one younger, trimmer instructor. On each show, one of the three instructors led the segment while the other two demonstrated the activity at lower levels of intensity (one standing and one sitting), to encourage each woman to participate at a level that was appropriate for her. The "chair exercises" were

very popular because they were easy to do in front of the TV and did not require moving furniture. Most workout segments focused on activities that one could accomplish within an apartment living room, because our formative research indicated that many lived in neighborhoods where it was unsafe to walk, were home caring for young children, and/or had to deal with long periods of inclement weather.

The shows include extensive footage of "real" women engaging in culturally appropriate physical activities in a variety of settings: roughhousing with kids, in a pool, in a gym, walking in the park, jumping rope, taking part in a senior dance class or an outdoor fitness day in a local park, etc. An important emphasis was to avoid suggesting expensive equipment and focus instead on use of existing resources (e.g., using neighborhood parks and school grounds, canned goods for hand weights). Activity segments also included African dance, funk aerobics, and a modified boxing-style workout. In addition, most shows included a "Smooth Moves" segment that involved stretching to relaxing music. This provided an easy lead-in to exercise for nonexercisers and also promoted stress reduction, which was considered a major issue for many black women. Because hair care is an important barrier to physical activity in black women [68] we included the Sisters Together brochure entitled Hair Care Tips for Sisters on the Move [69].

Behavior modification. Behavioral principles/themes based on a self-regulatory approach consistent with SAT [36,40,41] guided the flow of the TV show (see Table 2). To maximize effectiveness with *SisterTalk* participants, we reassessed and adapted these standard behavior change precepts to amplify where necessary, to teach via metaphor and illustrative example, to adjust emphasis, and to build in more motivational material. Program hosts revised scripts to make them more relevant and "real" for the audience. For example, to illustrate how self-awareness is empowering, we wrote a script borrowed, in part, from a presentation that we observed at the annual meeting of a public service, volunteer organization of African-American women. The demonstration described, via metaphor, the problem of fitting self-care into a life already overloaded with commitments. The fingers of one hand represented areas of commitment (family, church, friends, job and miscellaneous). The other hand represented the self—all the things one plans for self-care and self-nurturing. The demonstration then illustrated how the self and external commitments could "mesh," with the image of fingers intertwined as in prayer, which demonstrated the strong spiritual focus prevalent in African-American culture. For *SisterTalk*, one of our hosts rewrote this script, interjecting personal examples from her own life growing up in the rural South, including the time it takes to send birthday cards to her large extended family and the time she commits each week to her church. This type of personal example was expected to be culturally and personally salient for many in our audience.

Booster tapes. The four monthly booster tapes focused on maintenance of behavior changes. Topics included: a discussion of stages of change, with a program participant describing her experiences; definitions of success, with testimonials from a variety of women; ways to adjust activities and food choices through the changing seasons; the importance of self-care; avoidance of "ruts"; inspirational messages and affirmations; and encouragement of variety as the "spice of life." The booster tape set also included a compilation of the three most popular "10-Minute Workouts" for women to use as an exercise video.

Evaluation

The *SisterTalk* program was implemented with a total of 373 women, recruited in four cohorts or "waves" beginning in March 1999. Implementation incorporated systematic procedures for both process and outcome evaluation, as described below. Results of these evaluations are reported separately.

Process evaluation

Process evaluation was designed to monitor the reach, fidelity, and quality of intervention delivery. Both to encourage women to watch the shows and to estimate the proportion of women who were watching, an off-camera producer randomly telephoned *SisterTalk* participants during the show until one was reached and able to answer a simple question about that day's content. The participant who answered the question was then awarded a prize worth about $50. The producer also recorded the number of Interactive group participants who called in during the show on the special toll-free line. In addition, we kept records of requests for mailed videotapes of shows. In the survey administered 4 months after enrollment we asked participants what proportion of the shows they had watched. To measure reach of the peer telephone counseling, the COEs kept careful logs of participant calls that were attempted and completed. Moreover, the COEs audiotaped all calls to participants and a project supervisor monitored a random sample of these tapes for quality control purposes.

Outcome evaluation

Objectives of the outcome evaluation were: (1) to assess the overall impact of the *SisterTalk* intervention versus the wait-list comparison group on changes in weight, physical activity, and diet, and (2) to assess the separate and combined effects of the interactive and telephone social support intervention enhancements.

The study design for the outcome evaluation component was described previously (Fig. 1). Prospective participants completed a baseline telephone questionnaire, after which they were scheduled to attend an in-person screening visit

for collection of additional questionnaire data and measurement of height, weight, and waist circumference. Randomization to one of the five experimental conditions took place at the end of the baseline in-person screening. Briefly, survey variables measured included: demographics, eating habits/diet (including a food habits questionnaire [70–73]), physical activity (including the Godin Leisure Time Exercise Questionnaire [74]), and psychosocial measures including stage of change, self-efficacy, stress, social support, body image, weight loss history, emotional eating, and a discrimination scale [75]. Details about the measurement tools and variables, as well as baseline characteristics of the *SisterTalk* participants, will be reported in a separate publication.

We held follow-up evaluations at approximately 3 months (after the 12-week TV program), 8 months (after the 4-month booster video program), and 12 months after enrollment. These evaluations included a telephone survey followed by an in-person screening, with identical measures as the baseline. Participants received a $20–25 incentive for completing each follow-up evaluation.

During the study, we also tracked costs of the different intervention conditions to permit evaluation of cost-effectiveness. Costs monitored relate to the core TV programs, i.e., airtime, hosts, set, props, written materials, as well as additional costs for the peer telephone counseling and the interactivity, which required the TV show to be broadcast "live." If the study demonstrates differential effectiveness by experimental condition, we will calculate the incremental cost-effectiveness of each intervention component.

Discussion

SisterTalk was developed as a culturally sensitive intervention for black women that builds on the previous successes of group weight loss programs, but uses cable TV to provide a home-based alternative to the traditional, center-based intervention approach. Since television-based programs potentially exclude the interactivity and social support typical of face-to-face programs, the *SisterTalk* project included strategies for evaluating the importance of adding one or both of these components to the TV show format. As discussed below, the community outreach, formative research, and program development activities undertaken to develop *SisterTalk* offer insights and raise questions that may be informative to others developing culturally sensitive weight control interventions with black women.

One important lesson learned is that even with our extensive preliminary activities, the development of the *SisterTalk* intervention took longer than expected, partly because of the time ultimately required for the formative research component. Development of a culturally sensitive, successful program depends on researchers devoting sufficient time, personnel, and resources to this formative stage. This experience has convinced us that at least 12–18 months of intensive formative research is usually required for maximum cultural tailoring and effectiveness when the topic and/or population have been understudied. The time needed is not simply a matter of "efficiency" in the planning process. Particularly when deep structural issues are to be addressed, the iterative process of reflection on latent, intangible cultural issues and for evolution of understanding about how these can be taken into account requires *calendar time*.

Our experience in developing *SisterTalk* underscored the importance of having an ethnically and socioeconomically diverse project team. In particular, the intensive involvement of the COEs was crucial in the cultural tailoring of the program. These women from the target population acted as our neighborhood guides, cultural translators, and program advisors, and enabled us to conduct formative evaluation during the entire program. Other researchers have discussed the merit of involving lay health advisors in health promotion programs [76–79].

We also discovered the value of having both white and black moderators at each focus group. Having a black focus group moderator was important for gaining the trust of the community, while having a white moderator was helpful in probing further on issues and examples that the black moderator may have glossed over as "common knowledge." A related strategy that others have found helpful is to conduct a few focus groups with white audiences to contrast responses from racial/ethnic populations, which may help crystallize the extent of cultural tailoring required on particular issues [44].

Since the purpose of *SisterTalk* was to develop an intervention for the diverse population of black women in Boston, we focused on commonalities between subgroups, i.e., African-American and West Indian women. Future research would need to determine if important issues differ between these groups, and whether cultural components of the intervention or evaluation measures should be different. Our experience also highlights the need for research on tailoring programs for black women in different socioeconomic strata. Many of the women who participated in our formative research were low-income, while women who enrolled in the main study included higher proportions that were middle-income. It is unclear which aspects of the *SisterTalk* program might have been tailored differently for this audience.

Many of the issues we identified in cultural tailoring (see Table 1) have been discussed by others [43,44,53–62], but the ways in which we operationalized these issues for the *SisterTalk* intervention may be informative for those attempting to design future weight control programs for black women. The *SisterTalk* program could easily be adapted for black women in other parts of the United States. Given the comprehensiveness of the behavioral principles used in *SisterTalk*, this program could provide a useful starting point for development of weight control programs for other ethnic and racial groups.

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