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Research Article

SALSA : SAving Lives Staying Active to Promote Physical Activity and Healthy Eating

Rebecca E. Lee,[1] Scherezade K. Mama,[1] Ashley Medina,[1] Raul Orlando Edwards,[2] and Lorna McNeill[3]

[1] *Texas Obesity Research Center, Health and Human Performance Department, University of Houston, 3855 Holman Street, Houston, TX 77204, USA*
[2] *Strictly Street Salsa Dance Company, 1915 Commonwealth Street, Houston, TX 77006-1841, USA*
[3] *Department of Health Disparities Research, M.D. Anderson Cancer Center, University of Texas, 1400 Pressler Street, Unit 1440, Houston, TX 77030-3906, USA*

Correspondence should be addressed to Rebecca E. Lee, releephd@yahoo.com

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Physical inactivity, poor dietary habits, and obesity are vexing problems among minorities. SAving Lives, Staying Active (SALSA) was an 8-week randomized controlled crossover design, pilot study to promote regular physical activity (PA) and fruit and vegetable (FV) consumption as a means to preventing weight gain among women of color. Participants completed measures of demographics, PA, and dietary habits. Women ($N = 50$; $M = 42$ years) who participated were overweight (M BMI = 29.7 kg/m^2; M body fat = 38.5%) and reported low levels of leisure time PA ($M = 10.7$ MET-min/wk) and FV consumption ($M = 4.2$ servings/day). All were randomized to a four-week (1) semiweekly Latin dance group or (2) internet-based dietary education group. All participants reported a significant increase in weekly leisure time PA from baseline ($M = 10.7$ MET-min/wk) to follow up ($M = 34.0$ MET-min/wk, $P < .001$), and FV consumption increased over time by group ($P = .02$). Data suggest that Latin dance interventions to improve PA and web-based interventions to improve dietary habits show promise for improving health among women of color.

1. Introduction

Populations of color are among the fastest growing subpopulations in the USA [1] and are at great risk for physical inactivity, poor dietary habits, and obesity [2–4]. Recent estimates suggest that one-third of African American and Hispanic adults are physically inactive and fewer than one-fourth meet the recommendations for fruit and vegetable consumption [5, 6]. In addition to high rates of physical inactivity [7], ethnic minority women are at the greatest risk for not maintaining regular physical activity and weight gain [2–4]. Innovative and sustainable strategies to increase and maintain physical activity and prevent weight gain are needed in this population that provide measurable health benefits and improved quality of life [8, 9].

Latin dance interventions show promise for increasing physical activity duration and intensity and are seen as intrinsically enjoyable, potentially more easily adopted and maintained than traditional exercise programs [10]. The Latino culture and population continue to grow in the USA, and Latin dancing is a widely accepted and popular in many population subgroups, even beyond the Latino community. Prior research has shown that Latin dancing meets moderate to vigorous intensity requirements, sufficient to meet weight loss and maintenance recommendations [11]. Prior studies have also demonstrated that interventions which involve community and culturally relevant interventions are more successful and sustainable than those which do not incorporate these factors [12].

The use of computer and internet technology has also been increasing in popularity as the graphical interface has made the Internet easy and appealing. As is the case with Latin dance, web-based interventions to improve physical activity and dietary habits can be made culturally relevant

and engaging to a diverse audience. Evidence suggests that most women of color have access to computers and the internet at home or work and access health information online [13]. One study recently found that as many as one out of every five internet searches done by African American and Hispanic or Latina women was for health information [14]. Previous studies have shown that internet-based studies increase reach and accessibility and are effective for changing diet and physical activity behaviors [13, 15–17].

Although previous studies have explored the use of Latin dance and internet technologies to increase physical activity and improve dietary habits [11, 15, 18, 19], there have not been any studies that have combined the two methods to improve health habits that may reduce weight gain in women of color. Health promotion interventions improve physical activity and dietary habits, but often face retention challenges leading to low adherence [20]. Findings show that minority women do increase their physical activity in response to interventions [21, 22]. However, the changes in physical activity are often modest and inconsistent, suggesting a need for studies that increase adherence and accessibility and engage women of color [21, 23, 24].

The SAving Lives, Staying Active (SALSA) study was a pilot study to promote regular physical activity and fruit and vegetable consumption among women of color. The aims of the study were to (1) determine how willing women of color were to participate in an internet-based intervention; (2) determine whether a Latin dance intervention was sufficient to promote increase in weekly physical activity in women of color; (3) to determine whether an internet intervention was sufficient to promote increases in fruit and vegetable consumption. We hypothesized that Latin dancing would provide adequate intensity to reach moderate or greater intensity physical activity and that women would increase their fruit and vegetable consumption as a result of participating in the web-based arm of the study.

2. Materials and Methods

2.1. Participants. Participants were recruited via distributed brochures, word of mouth, and local electronic newsletters. Interested women were invited to visit the SALSA study website and register online. Ninety-five women registered online and completed a short screener questionnaire determining the following inclusion criteria: self-identified woman of color, between the ages of 25 and 60 years old, able to do physical activity without medical supervision as measured by the Physical Activity Readiness Questionnaire (PAR-Q) [25], willing to be randomized, and had access to a computer with internet at least 5 days per week. Of those screened ($N = 95$), eligible women ($N = 71$) were invited to participate in a baseline health assessment and enroll in the study. Fifty women of color completed the baseline health assessment and were enrolled in the study, yielding a recruitment ratio of 53%, suggesting that in online recruitment, about double the number of participants must be screened to achieve the desired enrollment. The study was approved by the University of Houston Committee for the Protection of Human Subjects and all participants provided written informed consent.

2.2. Assessments. Women who completed the T1 assessment were given a link to the online survey. Women who completed the T1 assessment and online survey ($N = 50$) were enrolled in the study. After four weeks of intervention, women completed a cross-over (T2) health assessment. Women who completed the T2 assessment and online survey were eligible to switch groups. Women who were previously in the internet-based comparison switched to the Latin dance group and vice versa. After an additional four weeks of intervention, women completed a postintervention (T3) assessment and online survey and returned to the University after four more weeks for a follow-up (T4) assessment.

2.3. Anthropometry and Body Composition. Body mass index (BMI = kg/m^2) and percent body fat were collected at all health assessments by trained personnel using established protocols [26]. Height was measured using a portable stadiometer. Body weight and body fat percentage were measured using a Tanita TBF-310 body composition analyzer (Tanita Corporation of America, Inc., Arlington Heights, IL, USA) [27, 28]. Participants were measured twice, and an average of the two measurements was used in analyses.

2.4. Physical Activity. Self-reported weekly leisure-time physical activity was measured at all time points using the validated Godin Leisure-Time Exercise Questionnaire [29]. The questionnaire asked participants to report how much and often they did all types of physical activity during a 7-day period and is then transformed into weekly metabolic units of physical activity.

As an objective measure of physical activity during Latin dancing, women wore a unidirectional ActiGraph GT1M accelerometer (ActiGraph, LLC, Pensacola, FL, USA) during Latin dance sessions [30]. The ActiGraph accelerometer has exhibited strong associations between activity counts and measured energy expenditure, was clearly responsive to different intensities of physical activity, and had the lowest amount of variance across monitors, indicating strong validity and overall reliability [31]. Accelerometer data were collected as counts per 10 second epochs, the smallest epoch setting for this accelerometer [32]. This epoch setting was chosen to be the closest to the heart rate monitor measurement intervals and has not been shown to have an effect on moderate physical activity [33, 34]. Although a 5-second epoch would have been ideal to measure vigorous or very vigorous physical activity [34], this setting was not available. A 10-second epoch is more ideal than a 60-second epoch length for measuring moderate or greater intensity physical activity [33]. Counts were translated into minutes spent in moderate or greater physical activity per session using an established cutpoint as described by Layne and his colleagues [35], and an average number of minutes per session over the course of the study were used in analyses.

As a measure of heart rate during Latin dancing, women wore Polar E600 heart rate monitors (Polar Electro Inc., Lake

Success, NY, USA) during Latin dance sessions. Heart rate monitors was programmed with each participant's age and limits of their target heart rate zone (60 to 85% of their maximum heart rate based on participant's age). Heart rate was measured every 5 seconds. Average heart rate and average time spent in one's target zone over the course of the study was used in analyses.

2.5. Dietary Habits. Fruit and vegetable and fat consumption were measured using the National Cancer Institute's Fruit and Vegetable and Fat Screeners, respectively, to measure number of servings consumed and total calories consumed from fats [36, 37]. Fruit and vegetable consumption was reported in terms of frequency and amount consumed each time over the last month. The Fruit and Vegetable Screener has shown adequate validity in adult women [38]. The Fat Screener measures usual dietary intake of percent calories from fat. Fat intake was reported in terms of frequency over the last 12 months. The Fat Screener has shown good validity in adult women [39].

2.6. Website Use. SALSA website use was monitored throughout the study. Number of visits per day, total number of visits during the four-week access period and duration spent on the website were recorded by participant ID.

2.7. Intervention. Participants were randomized to one of two groups, (1) a biweekly Latin dance group ($N = 25$) or (2) an internet-based dietary education comparison ($N = 25$), using a computer generated, weighted, randomization procedure; investigators and participants were blind to intervention condition during the randomization procedure. The flow of the study is presented in Table 1.

Women in the Latin dance group attended eight one-hour Latin dance lessons, where they learned four basic Latin dance steps (salsa, merengue, bachata and cha cha) taught by a professional dance instructor who instructed the group together to music. Each session consisted of a review of the basic steps, variations on the steps, and a dance incorporating the steps. At the end of the session, the instructor spent between five and ten minutes doing a cool down, consisting of slow dance steps, stretching and guided breathing. Throughout class, the instructor worked with the group as a whole and gave pointers to individuals as needed.

The informational and interactive website delivered content on dietary habits based on the salsa food theme. The SALSA website provided information on improving dietary habits by increasing fruit and vegetable consumption for four weeks. All intervention materials were produced at an eighth grade reading level, ensuring women with varying socioeconomic backgrounds were able to participate. To encourage participants to visit at least once per week the website was updated weekly with new educational content and tools, such as information about food safety, storage times, seasonality, serving sizes, and daily recommendations. Participants were e-mailed weekly when new content was posted. In addition to educational content, one salsa recipe and two recipes using fruit and vegetables were provided each week. Participants were given a log-in username and password, and they could access the website freely for four weeks while in the internet-based dietary education group. At their first log-in, they were instructed to update their profile and change their password. In order to avoid contamination between groups, only content on dietary habits and fruit and vegetable consumption was provided on the website and content on adopting physical activity and safety was provided only at Latin dance sessions. Access to the website was not available to women while they were completing the Latin dance intervention.

2.8. Statistical Analysis. Prior to analysis, normality was checked for all variables; the fruit and vegetable consumption variable was transformed using a natural log transformation to create a symmetric distribution. Differences in these measures between groups at baseline were evaluated using independent samples t-tests. Simple changes in the outcome measures over time were evaluated using paired t-tests and repeated measures analyses. Covariates, such as age, income, education, dance session attendance and website visits, significantly correlated with physical activity, dietary habits and BMI were controlled for in analyses. Means, standard deviations, frequencies, and t, F, and P values for each test are reported below.

3. Results

3.1. Descriptives. Women ($N = 50$) were middle aged ($M = 41.0$ years, SD = 9.6) and overweight (M BMI = 29.7 kg/m^2, SD = 5.3; M body fat = 38.5%, SD = 7.0). Most women (74.0%) were college graduates and reported a mean household income of approximately \$90,000 for a family of four, suggesting a relatively high socioeconomic status. Means and standard deviations for body composition, physical activity, dietary habits, and psychosocial variables by group and time point are presented in Table 2.

3.2. Attendance and Website Usage. Women who participated in the dance group first (Group 1) attended 5 out of 8 dance sessions ($M = 4.96$ sessions, SD = 2.6), and women randomized to the dance group second (Group 2) attended 4 out of 7 dance sessions ($M = 3.6$, SD = 2.0; one session cancelled due to Hurricane Ike).

Participants visited the SALSA educational website at least once but no more than 10 times ($M = 2.98$, SD = 2.22) during the four weeks they had access to the site while participating in the internet-based dietary education group. Time spent on the site varied by date and visit number. If it was their first time visiting the site, women spent roughly 16 minutes ($M = 16.1$, SD = 13.9) on the website. When new content was posted on the site, women spent between 4.5 (SD = 3.5) and 18.3 (SD = 14.1) minutes accessing new materials. On average, women spent up to 28 minutes ($M =$ 12.6 minutes, SD = 7.3) reviewing material on the site during the four weeks they had access to the site. Women in Group 1 visited the site slightly more often ($M = 3.3$ versus 2.6 visits) and spent more time ($M = 13.6$ versus 11.4 minutes) on the

Table 1: Flow of the SALSA Study.

T1	Intervention	T2	Intervention	T3	No contact	T4
$N = 50$	Group 1: 4-week Latin dance Group 2: 4-week internet access	$N = 43$	Group 1: 4-week internet access Group 2: 4-week Latin dance	$N = 41$	4 weeks	$N = 36$

Table 2: Body composition, physical activity, dietary habits, and psychosocial measures by group and time point.

	Group 1 (dance first)				Group 2 (website first)			
	T1	T2	T3	T4	T1	T2	T3	T4
	($n = 25$)	($n = 21$)	($n = 21$)	($n = 18$)	($n = 25$)	($n = 22$)	($n = 20$)	($n = 18$)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Body mass index (kg/m^2)	30.1 (5.7)	30.3 (5.6)	29.2 (5.2)	29.0 (5.5)	29.3 (5.0)	29.7 (5.2)	29.9 (5.5)	29.3 (5.0)
% body fat	38.7 (8.0)	38.2 (8.6)	37.0 (8.0)	37.6 (7.9)	38.4 (5.9)	38.4 (6.0)	38.5 (6.6)	38.5 (6.2)
Leisure-time physical activity (min per week)	12.0 (10.6)	18.7 (16.9)	23.3 (15.8)	34.8 (16.5)	9.5 (10.2)	17.0 (11.7)	23.7 (15.3)	33.2 (16.0)
Fruit and vegetables (servings per day)	5.1 (6.5)	3.3 (4.2)	3.2 (4.9)	1.3 (0.8)	3.2 (3.4)	3.3 (1.9)	2.5 (2.4)	2.6 (2.2)
Fat intake (% kcal from fat per day)	30.1 (2.5)	31.2 (4.1)	31.4 (3.5)	31.4 (3.5)	31.7 (3.4)	30.9 (2.6)	30.4 (2.5)	31.1 (4.1)

Note: Group 1: Dance first, website second; Group 2: Website first, dance second.

site than women in Group 2, but these differences in visits ($F(1, 39) = 1.14$, $P = .293$) and duration ($F(1, 39) = .87$, $P = .356$) by group were not statistically significant.

3.3. Physical Activity Levels While Latin Dancing. Objectively measured accelerometer data indicated women spent an average of 9 minutes ($M = 8.5$, SD = 6.4) doing moderate or greater intensity physical activity while doing Latin dancing. There were no differences between groups, suggesting that Latin dance instruction and intensity were similar between groups. Heart rate monitors measured minutes spent above, in, and below target heart rate zone, defined as between 60 and 85% of maximum heart rate determined by age, and average heart rate. Women spent an average of 25.1 minutes (SD = 20.4) in and 3.6 minutes (SD = 8.5) above, their target heart rate zone with an average of 93.2 beats per min (SD = 45.7) while doing Latin dancing.

3.4. Changes in Physical Activity. All participants reported a significant increase in weekly leisure-time physical activity from T1 to T4 ($F(3, 102) = 27.64$, $P < .001$). This increase is roughly equitable to seven, 15-minute sessions (or 105 minutes total) of moderate or greater intensity physical activity, sufficient to expend 367.5–735 kilocalories per week [40]. The frequency of weekly leisure physical activity also changed from "never/rarely" to "sometimes" from T1 to T3 ($F(2, 37) = 12.61$, $P < .001$). There were no significant differences in changes in physical activity over time by group.

3.5. Changes in Dietary Habits. Participants in Group 2 had more stable fruit and vegetable consumption ($F(1, 34) = 1.38$, $P = .018$) over the course of the study, while Group 1 decreased consumption over the course of the study from over five servings to just over one serving. Group 2 decreased the percent of calories they consumed from fat compared to Group 1 ($F(1, 24) = 5.12$, $P = .030$). In general, those who received the SALSA website first had more favorable dietary habits outcomes.

3.6. Changes in Body Composition. BMI increased significantly in both groups between T1 and T2 ($t(42) = -2.38$, $P = .022$). However, there was no statistically significant change in BMI over time by group ($F(3, 93) = .30$, $P = .824$). Percent body fat differed significantly over time by group ($F(1, 31) = 5.54$, $P = .025$). Post hoc tests show that women in Group 1 decreased their body fat percentage from 37.7 to 36.7% between T1 and T2, during the Latin dance intervention, but were unable to maintain the loss after participating in the website arm of the study. Women in Group 2 had a similar experience but only lost 0.2% body fat during the Latin dance intervention compared to the 1% loss for Group 1.

4. Discussion

The SALSA study used an innovative hybrid strategy, employing face-to-face and internet techniques to generate interest and register participants to pilot test an innovative intervention to promote physical activity and fruit and vegetable consumption in women of color. We found that women of color were both willing and able to participate in an internet-based intervention. Women visited the site roughly once per week to print out materials and would not remain logged in for extended periods of time. Time spent on the site ranged from one to fifty minutes, suggesting some participants may have logged in simply to check for new content, while others spent time accessing tools, recipes and other information and materials while logged in. These findings are consistent with previous studies, which have shown that web-based behavioral treatment interventions have higher log-ins than web-based education interventions

[41]. Although group differences in site visits and duration were not statistically significant, women who received the dance intervention first visited the site twice as often as women who received the salsa website first. Log in dates and times indicate that most women in both groups were aware of the update schedule and willingly checked the site at least once per week.

During Latin dance sessions, heart rate monitors showed that women did close to thirty minutes of moderate-intensity physical activity, although accelerometer data showed women, on average, did fewer than ten minutes of moderate-intensity physical activity, suggesting accelerometers may not be sensitive enough to measure physical activity during dancing in overweight and obese women. Previous studies have found heart rate to be a better measure of energy expenditure and physical activity intensity during dancing, and studies have reported increases in heart rate equivalent to aerobic interval training [11]. We saw no group effect for reported physical activity; women reported increased physical activity regardless of order of intervention activities and reported maintaining increases in physical activity at postintervention and follow-up, suggesting that the Latin dance intervention was effective for regular physical activity adoption and short-term maintenance, consistent with previous studies of dance [19, 42].

Women who had access to the SALSA website first reported modest increases in fruit and vegetable and decreases in fat consumption immediately following the website intervention, but failed to maintain those healthy changes after participating in the Latin dance intervention. However, the women in Group 2 fared much better than those in Group 1. Perhaps focusing on dietary habits first may make for more successful dietary outcomes, compared to focusing on physical activity first. This is an area for future research; to our knowledge few studies (if any) have investigated the order of intervention effects on maintenance of health behaviors. Data suggest that the SALSA website was useful for initiating healthful behavior change but not maintaining it. Previous studies have had similar findings [43–45], suggesting that interactive features and prolonged access may promote sustained changes in dietary habits [43].

In addition to the original aims of the study, the SALSA study showed promise in the domain of preventing weight gain and potentially even modest weight loss. Interventions that focus on sustainable health behaviors and modest weight loss improve systolic and diastolic blood pressure, heart rate, total cholesterol and insulin resistance leading to improved cardiopulmonary function and decreased risk of CVD and diabetes [46, 47]. Even a 3.5 to 7% weight loss has significant clinical relevance and can improve health over the lifespan, and women who maintain weight loss experience added health and quality of life benefits [48]. Women reduced their percent body fat while doing Latin dancing. Although decreases were small, this suggests that women who participate in a longer study may experience increased benefit and see greater results.

The SALSA pilot study combined a creative study design with innovative measures. By combining a randomized controlled and crossover study design, all participants received the benefits of both intervention arms. The innovative study design was a unique method to accommodate the community's desires for all to receive all study treatment benefits while maintaining scientific integrity. Although the crossover design satisfied community desires, the order of intervention activities may influence adoption and maintenance of healthful behaviors. Women who participated in the Latin dance group first increased their physical activity but did not improve their dietary habits, while women who participated in the website group first increased physical activity, improved dietary habits, and experienced greater changes in percent body fat. Further work is needed to determine whether order of activities is important for adoption and maintenance of healthful behaviors in a larger sample of women of color.

In addition to the unique study design, the SALSA study had several strengths. Internet-based recruitment, surveys and content on improving dietary habits were another innovative method to meet the community's needs and increase retention rates. Internet-based surveys and education materials allowed women to participate without the burden of commuting to the university each week, except for Latin dance sessions. Like interviewer administered surveys, internet-based surveys increase rates of data completion but allow more privacy and convenience, thus decreasing participant burden. However, survey-based assessments may be subject to self-reporting bias, reducing some confidence in the outcomes. The use of Latin dance as physical activity also responded to the community's requests for a fun, engaging and less "exercisey" type of physical activity and was easy to implement; however, caution is warranted as these findings are only specific to the population under investigation, and further research is done to generalize findings to other population groups.

The SALSA study was a pilot study to test the efficacy of a hybrid internet-based and Latin dance intervention. Future work is needed to test the long-term physical and emotional health benefits of participating in a Latin dance intervention. This project was fortunate to take advantage of the zeitgeist that has lead to particular popularity of Latin dance. Although it is relatively easy to adopt new healthful habits, sustaining them over time is often difficult if the prevailing ecology does not support the new health habit. The Latin dances are not only popular and fun, they are also culturally tied to the fastest growing subgroup of the US population, suggesting that as the Latino population grows so will the transcultural popularity of Latin dances. Providing the fundamental skills to a diverse group of individuals that already fits within the prevailing social ecology cannot help but be sustainable.

The women who participated in this study, regardless of ethnicity, age, income or education, were able to learn how to dance, and increase energy expenditure related to physical activity and weight and appeared to have a wonderful time doing it. Latin dance is increasing in popularity among people from all walks of life and seems to serve as a physical activity that is unaffected by social standing. Anyone can learn Latin dance, and, in the world of dance, it is not how wealthy, smart, or attractive one is, but rather the knowledge

of the dance steps and joy on the dance floor that are most desirable. Thus, Latin dance may serve as an equalizing force, helping women to be more physically active with a strategy that is fun, easy, and widely available.

References

[1] B. G. Link and JO. C. Phelan, "Mckeown and the idea that social conditions are fundamental causes of disease," *American Journal of Public Health*, vol. 92, no. 5, pp. 730–732, 2002.

[2] Harris County Quick Facts, http://quickfacts.census.gov/qfd/states/48/48201.html.

[3] A. H. Mokdad, B. A. Bowman, E. S. Ford, F. Vinicor, J. S. Marks, and J. P. Koplan, "The continuing epidemics of obesity and diabetes in the United States," *Journal of the American Medical Association*, vol. 286, no. 10, pp. 1195–1200, 2001.

[4] A. H. Mokdad, E. S. Ford, B. A. Bowman et al., "Prevalence of obesity, diabetes, and obesity-related health risk factors, 2001," *Journal of the American Medical Association*, vol. 289, no. 1, pp. 76–79, 2003.

[5] Texas Department of State Health Services, "Behavioral Risk Factor Surveillance System Data Table," http://www.dshs.state.tx.us/chs/brfss/query/brfss_form.shtm.

[6] M. M. Zive, G. C. Frank-Spohrer, J. F. Sallis et al., "Determinants of dietary intake in a sample of white and Mexican-American children," *Journal of the American Dietetic Association*, vol. 98, no. 11, pp. 1282–1289, 1998.

[7] S. A. Carlson, J. E. Fulton, D. A. Galuska, J. Kruger, F. Lobelo, and F. V. Loustalot, "Prevalence of self-reported physically active adults—United States, 2007," *Morbidity and Mortality Weekly Report*, vol. 57, no. 48, pp. 1297–1300, 2008.

[8] R. A. Breslow, R. Ballard-Barbash, K. Munoz, and B. I. Graubard, "Long-term recreational physical activity and breast cancer in the National Health and Nutrition Examination Survey I Epidemiologic Follow-up Study," *Cancer Epidemiology Biomarkers and Prevention*, vol. 10, no. 7, pp. 805–808, 2001.

[9] C. M. Friedenreich and M. R. Orenstein, "Physical activity and cancer prevention: etiologic evidence and biological mechanisms," *Journal of Nutrition*, vol. 132, no. 11, supplement, pp. 3456S–3464S, 2002.

[10] E. E. Jauregui-Ulloa, "Assessment of a latin dance session on heart rate and the total amount of steps, a preliminary study," *Medicine & Science in Sports & Exercise*, vol. 39, no. 5, supplement, p. S198, 2007.

[11] A. Di Blasio, M. De Sanctis, S. Gallina, and P. Ripari, "Are physiological characteristics of Caribbean dance useful for health?" *Journal of Sports Medicine and Physical Fitness*, vol. 49, no. 1, pp. 30–44, 2009.

[12] T. L. Harralson, J. C. Emig, M. Polansky, R. E. Walker, J. O. Cruz, and C. Garcia-Leeds, "Un Corazón Saludable: factors influencing outcomes of an exercise program designed to impact cardiac and metabolic risks among urban latinas," *Journal of Community Health*, vol. 32, no. 6, pp. 401–412, 2007.

[13] G. Block, B. Sternfeld, C. H. Block et al., "Development of alive! (A lifestyle intervention via email), and its effect on health-related quality of life, presenteeism, and other behavioral outcomes: randomized controlled trial," *Journal of Medical Internet Research*, vol. 10, no. 4, article e43, 2008.

[14] R. E. Lee et al., "Differences across physical activity, dietary habits, and weight in women of color," *Annals of Behavioral Medicine*, vol. 39, no. 1, p. S179, 2010.

[15] M. A. Napolitano, M. Fotheringham, D. Tate et al., "Evaluation of an internet-based physical activity intervention: a preliminary investigation," *Annals of Behavioral Medicine*, vol. 25, no. 2, pp. 92–99, 2003.

[16] A. Oenema, J. Brug, A. Dijkstra, I. de Weerdt, and H. de Vries, "Efficacy and use of an internet-delivered computer-tailored lifestyle intervention, targeting saturated fat intake, physical activity and smoking cessation: a randomized controlled trial," *Annals of Behavioral Medicine*, vol. 35, no. 2, pp. 125–135, 2008.

[17] H. Spittaels, I. De Bourdeaudhuij, and C. Vandelanotte, "Evaluation of a website-delivered computer-tailored intervention for increasing physical activity in the general population," *Preventive Medicine*, vol. 44, no. 3, pp. 209–217, 2007.

[18] E. C. Cussler, P. J. Teixeira, S. B. Going et al., "Maintenance of weight loss in overweight middle-aged women through the internet," *Obesity*, vol. 16, no. 5, pp. 1052–1060, 2008.

[19] M. F. Hovell, M. M. Mulvihill, M. J. Buono et al., "Culturally tailored aerobic exercise intervention for low-income Latinas," *American Journal of Health Promotion*, vol. 22, no. 3, pp. 155–163, 2008.

[20] E. G. Eakin, S. S. Bull, K. Riley, M. M. Reeves, S. Gutierrez, and P. McLaughlin, "Recruitment and retention of Latinos in a primary care-based physical activity and diet trial: the Resources for Health study," *Health Education Research*, vol. 22, no. 3, pp. 361–371, 2007.

[21] A. H. Chen, J. F. Sallis, C. M. Castro et al., "A home-based behavioral intervention to promote walking in sedentary ethnic minority women: project WALK," *Women's Health*, vol. 4, no. 1, pp. 19–39, 1998.

[22] R. K. Dishman and J. Buckworth, "Increasing physical activity: a quantitative synthesis," *Medicine and Science in Sports and Exercise*, vol. 28, no. 6, pp. 706–719, 1996.

[23] J. Banks-Wallace and V. Conn, "Interventions to promote physical activity among African American women," *Public Health Nursing*, vol. 19, no. 5, pp. 321–335, 2002.

[24] R. Collins, R. E. Lee, C. L. Albright, and A. C. King, "Ready to be physically active? The effects of a course preparing low-income multiethnic women to be more physically active," *Health Education and Behavior*, vol. 31, no. 1, pp. 47–64, 2004.

[25] S. Thomas, J. Reading, and R. J. Shephard, "Revision of the physical activity readiness questionnaire (PAR-Q)," *Canadian Journal of Sport Sciences*, vol. 17, no. 4, pp. 338–345, 1992.

[26] L. A. Powell, D. C. Nieman, C. Melby et al., "Assessment of body composition change in a community-based weight management program," *Journal of the American College of Nutrition*, vol. 20, no. 1, pp. 26–31, 2001.

[27] K. T. D'Alonzo, A. Aluf, L. Vincent, and K. Cooper, "A comparison of field methods to assess body composition in a diverse group of sedentary women," *Biological Research for Nursing*, vol. 10, no. 3, pp. 274–283, 2009.

[28] Tanita, "*Body Composition Analyzer/Scales*," http://www.tanita.com/BodyComposition.shtml.

[29] G. Godin, A. Bélanger-Gravel, A. M. Paradis, M. C. Vohl, and L. Pérusse, "A simple method to assess fruit and vegetable intake among obese and non-obese individuals," *Canadian Journal of Public Health*, vol. 99, no. 6, pp. 494–498, 2008.

[30] ActiGraph, "*ActiGraph*," http://www.theactigraph.com.

[31] G. J. Welk, "Principles of design and analyses for the calibration of accelerometry-based activity monitors," *Medicine and Science in Sports and Exercise*, vol. 37, no. 11, supplement, pp. S501–S511, 2005.

[32] P. S. Freedson and K. Miller, "Objective monitoring of physical activity using motion sensors and heart rate," *Research*

Quarterly for Exercise and Sport, vol. 71, no. 2, supplement, pp. S21–S29, 2000.

[33] K. P. Gabriel, J. J. McClain, K. K. Schmid et al., "Issues in accelerometer methodology: the role of epoch length on estimates of physical activity and relationships with health outcomes in overweight, post-menopausal women," *International Journal of Behavioral Nutrition and Physical Activity*, vol. 7, article 53, 2010.

[34] S. G. Trost, K. L. Mciver, and R. R. Pate, "Conducting accelerometer-based activity assessments in field-based research," *Medicine and Science in Sports and Exercise*, vol. 37, no. 11, supplement, pp. S531–S543, 2005.

[35] C. S. Layne, S. K. Mama, J. S. Banda, and R. E. Lee, "Development of an ecologically valid approachto assess moderate physical activity using accelerometry in community dwelling women of color: a cross-sectional study," *International Journal of Behavioral Nutrition and Physical Activity*. In press.

[36] G. W. Greene, K. Resnicow, F. E. Thompson et al., "Correspondence of the NCI fruit and vegetable screener to repeat 24-H recalls and serum carotenoids in behavioral intervention trials," *Journal of Nutrition*, vol. 138, no. 1, pp. 200S–204S, 2008.

[37] F. E. Thompson, D. Midthune, A. F. Subar, V. Kipnis, L. L. Kahle, and A. Schatzkin, "Development and evaluation of a short instrument to estimate usual dietary intake of percentage energy from fat," *Journal of the American Dietetic Association*, vol. 107, no. 5, pp. 760–767, 2007.

[38] A. F. Subar, F. E. Thompson, V. Kipnis et al., "Comparative validation of the block, willett, and National Cancer Institute food frequency questionnaires: the Eating at America's Table Study," *American Journal of Epidemiology*, vol. 154, no. 12, pp. 1089–1099, 2001.

[39] F. E. Thompson, D. Midthune, A. F. Subar, L. L. Kahle, A. Schatzkin, and V. Kipnis, "Performance of a short tool to assess dietary intakes of fruits and vegetables, percentage energy from fat and fibre," *Public Health Nutrition*, vol. 7, no. 8, pp. 1097–1106, 2004.

[40] U.S. Department of Health and Human Services, *Promoting Physical Activity: A Guide for Community Action*, Human Kinetics, Champaign, Ill, USA, 1999.

[41] M. Neve, P. J. Morgan, P. R. Jones, and C. E. Collins, "Effectiveness of web-based interventions in achieving weight loss and weight loss maintenance in overweight and obese adults: a systematic review with meta-analysis," *Obesity Reviews*, vol. 11, no. 4, pp. 306–321, 2010.

[42] N. Olvera, "Promoting moderate-vigorous physical activity in overweight minority girls," *International Journal of Pediatric*, vol. 2010, Article ID 415123, 7 pages, 2010.

[43] D. B. Buller, W. G. Woodall, D. E. Zimmerman et al., "Randomized trial on the 5 a day, the Rio Grande way website, a web-based program to improve fruit and vegetable consumption in rural communities," *Journal of Health Communication*, vol. 13, no. 3, pp. 230–249, 2008.

[44] S. Lindsay, S. Smith, P. Bellaby, and R. Baker, "The health impact of an online heart disease support group: a comparison of moderated versus unmoderated support," *Health Education Research*, vol. 24, no. 4, pp. 646–654, 2009.

[45] A. Papadaki and J. A. Scott, "Follow-up of a web-based tailored intervention promoting the Mediterranean diet in Scotland," *Patient Education and Counseling*, vol. 73, no. 2, pp. 256–263, 2008.

[46] K. S. Geliert, R. E. Aubert, and J. S. Mikami, "Ke 'Ano Ola: Moloka'i's community-based healthy lifestyle modification program," *American Journal of Public Health*, vol. 100, no. 5, pp. 779–783, 2010.

[47] J. Nagashima, H. Musha, H. Takada et al., "Three-month exercise and weight loss program improves heart rate recovery in obese persons along with cardiopulmonary function," *Journal of Cardiology*, vol. 56, no. 1, pp. 79–84, 2010.

[48] M. K. Kramer, A. M. Kriska, E. M. Venditti et al., "Translating the Diabetes Prevention Program. A Comprehensive Model for Prevention Training and Program Delivery," *American Journal of Preventive Medicine*, vol. 37, no. 6, pp. 505–511, 2009.