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Alternative Medicine Methods Used for Weight Loss and Diabetes Control by Overweight and Obese Hispanic Immigrant Women

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Abstract

Introduction: Middle-aged Hispanic women have the highest prevalence of overweight and lifetime risk for diabetes of all gender/racial groups. This study examines use of alternative medicine for weight loss and diabetes management among overweight and obese Mexican American women with or at risk for diabetes. **Method:** As part of a diabetes risk-reduction intervention targeting overweight and obese Hispanic women at a federally qualified health center in Hillsboro, Oregon, we administered a survey of different treatment modalities, including alternative medicine, traditional Mexican medicine, and home remedies to 85 Hispanic women. We also asked participants how often they disclosed their use of alternative methods to their providers. **Results:** Nearly all participants with diabetes (97%) reported using at least one alternative strategy for diabetes control, with home remedies, commercial weight-loss products, and herbal teas being the most endorsed. Most participants with diabetes and half of those without diabetes reported never telling their provider. **Conclusion:** This group of women reported a high prevalence of use of alternative methods for weight control and diabetes management. Yet most participants with diabetes never reported this use to a health care provider. To ensure patient safety, providers treating Hispanic women need to probe for complementary and alternative medicine practices.

Keywords

obesity, diversity in health, alternative medicine, Hispanic women, chronicity-diabetes mellitus type 2

Purpose

National estimates suggest that two thirds of adults in the United States are overweight or obese (body mass index [BMI] $\geq$25 kg/m^2; Ogden, Carroll, Fryar, & Flegal, 2015). At approximately 77%, overweight rates are particularly high for women of Latin American origin, with nearly 47% classified as obese (BMI $\geq$ 30 kg/m^2; Flegal, Kruszon-Moran, Carroll, Fryar, & Ogden, 2016). Hispanic ethnicity (i.e., being of Latin American origin, regardless of race) and overweight are major risk factors for type 2 diabetes (T2D; American Diabetes Association, 2016). Prevalence of diabetes varies widely among different U.S. Hispanic heritage groups by national ancestry, with Hispanics of Mexican descent being nearly twice as likely to be diagnosed with T2D as non-Hispanic Whites (Centers for Disease Control and Prevention, 2017).

Hispanic women have the highest estimated lifetime risk for diabetes of all gender and ethnic/racial groups: 52.5% (Wenger et al., 2016), and they are less likely to achieve good glycemic control or to manage their diabetes than non-Hispanic White women (Carbone, Rosal, Torres, Goins, & Bermudez, 2007; Mosen, Feldstein, & Borin, 2015). Given the high prevalence rates of both overweight and T2D among Hispanic women, weight control is a common concern in this group, with some studies reporting that up to 96% of overweight or obese Mexican American women express a desire to lose weight, and 54% actively pursue some form of weight control (Yaemsiri, Slining, & Agarwal, 2011).

Studies have shown that the health-seeking behaviors of Hispanic individuals frequently include nontraditional methods in addition to conventional medical care (Ho, Nguyen, Liu, Nguyen, & Kilgore, 2015). More than 80% of Hispanic adults report obtaining health information through the media, mostly television, and 79% report acting on this information (Hu, Amirehsani, Wallace, & Letvak, 2013). Low-income Hispanic immigrant women seeking strategies for diabetes management

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and weight control face multiple challenges, including a lack of adequate information (Ivanov, Wallace, Hernandez, & Hyde, 2015), low health literacy (Guntzviller, King, Jensen, & Davis, 2017), lacking health insurance (Boyas, Negi, & Valera, 2017), and mistrust in medical providers (Marquez & Murillo, 2017). Studies have shown Hispanics to be significantly less likely than both non-Hispanic Whites and African Americans to seek counseling from dietitians for weight loss (Pillitteri et al., 2008). Instead, Hispanic women may seek weight and diabetes management options congruent with their cultural background and traditional health beliefs (Lindberg, Stevens, Elder, Funk, & Debar, 2013), some of which differ from those endorsed by the conventional health care model.

Information on the use of nonconventional strategies for diabetes and weight control among Hispanic populations is limited. Use of supplements for weight loss has been shown to be more common among Hispanics compared with non-Hispanic Whites (41.6% vs. 31.2%; Villa-Caballero et al., 2010), and studies indicate that the weight loss strategies used by Hispanic women often include alternative diets, traditional remedies, and commercial products promising "effortless weight loss," such as Herbalife™ (Amirehsani & Wallace, 2013). Whereas some studies report that approximately one third of people with diabetes use complementary and alternative medicine (CAM) strategies to manage their condition (Robles, Upchurch, & Kuo, 2017), some studies report that over 95% of Hispanics with diabetes use of CAM for diabetes management. There is little documentation on the types, efficacy, and safety of some of the herbal and home remedies used by Hispanics for diabetes management.

Since obesity and T2D are pervasive and significant health problems among Hispanic women and given the popularity of herbal and other commercially available nonconventional treatment products, the cost associated with their use, and the potential for adverse interactions, it is important to identify the prevalence and type of nonconventional methods used by Hispanic women for weight control and diabetes management. The goals of this study were to assess the use of nonconventional methods for weight loss and diabetes management among Hispanic women who have T2D or are at risk for the disease, determine which methods were most widely used, and examine the extent to which patients disclose their use of these methods to their medical providers.

Method

Study Design and Recruitment

This study was part of an ongoing randomized clinical trial of a culturally tailored diabetes risk-reduction intervention targeting overweight and obese Spanish-speaking women who obtained medical care at a federally qualified health center in Hillsboro, Oregon. Participants were randomly assigned to the intervention arm or to usual care, which consisted of printed materials on diabetes prevention through dietary change and physical activity. The intervention was a culturally tailored group-based lifestyle intervention, details of which have been described previously (Lindberg et al., 2012). The aims of the intervention are to reduce body weight, and improve markers of glycemic control, diet, and physical activity.

Eligibility criteria included female, self-identified as Hispanic, having Spanish as primary language, age 18 years or older, BMI of 27 kg/m^2 or above, and either diagnosed with T2D or prediabetes, or considered at high risk for diabetes due to hyperlipidemia, hypertension, or history of gestational diabetes. Additional risk factors, such as family history and sedentary lifestyle were not specifically assessed. Exclusions included current or recent (past 6 months) use of weight loss medication, current or recent (past 12 months) pregnancy, having plans to become pregnant within the next 18 months, psychiatric hospitalizations, or cancer treatment (excluding nonmelanoma skin cancers) in the past 2 years. All study-related activities, including recruitment and data collection, were conducted in Spanish. The study was reviewed and approved by the Kaiser Permanente Northwest Institutional Review Board, and all procedures were in accordance with national and institutional standards on responsible research with human participants. Written informed consent was obtained from all participants in the study.

Participants were recruited by direct physician referral, recruitment materials posted in exam rooms, and by sending letters to women identified as potentially eligible through a query of the electronic medical record. Interested patients who contacted the study, as well as patients who did not respond to the recruitment letter, were contacted by study recruitment staff who provided more detailed information about the study and confirmed patient eligibility (i.e., confirming they were not pregnant or planning on becoming pregnant in the next 18 months). Eligible patients were invited to attend an information session at the clinic. During this visit, the study principal investigator, a native Spanish-speaking clinical psychologist, answered questions, read and explained the consent form, and described the next steps in the enrollment process.

Consented patients were then scheduled for a baseline data collection and randomization visit at the clinic. During the baseline data collection visit, medical assistants measured participants' weight and height, used a fasting finger stick test to assess lipid profile, fasting blood glucose, and HbA1c. While waiting for their results, participants were asked to complete a paper and pencil survey. After completion, patients were randomized via a computer-generated random sequence. The PI met with the patients and informed them of their test results and their randomization assignment.

The data presented in this article were collected only from participants randomly assigned to the intervention. During the initial group meeting, participants were asked to complete a survey on products or methods used in previous weight-loss attempts, excluding prescribed medication. Completing the survey took approximately 30 minutes. Respondents were asked if, within the past 5 years, they had made a serious

weight-loss attempt lasting more than 3 days, and if so they were asked to report which products or methods they had used in those weight-loss attempts (*¿En los últimos 5 años hiciste algún esfuerzo que durara tres días o más, para tratar de bajar de peso? Marca cuáles de los siguientes productos o métodos usaste para tratar de bajar de peso . . .*).

The survey instrument included questions about various conventional and CAM therapies, various modalities of traditional Mexican medicine, and other products or methods related to weight control. Because most participants were of Mexican origin, the survey included three important practitioners of traditional Mexican medicine: "Huesero" or "sobador," "yerbero," and "curandero." "Hueseros" or "sobadores" are bonesetters, healing practitioners trained in physical manipulation and massage. "Yerberos" are practitioners specialized in medicinal herbs. While there is no general agreement on the definition of "curanderos," they are practitioners of spiritual and physical healing using traditional Mexican medicine.

CAM modalities focused on major domains, as defined by the National Center for Complementary and Alternative Medicine including (1) alternative medical systems, (2) mind/body interventions not yet considered "mainstream," (3) herbal-based (biologic) therapies, (4) manipulative- and body-based methods, and (5) energy therapies. In addition to the CAM items, survey items were based on responses from a previously published study (Amirehsani & Wallace, 2013), and included personal attempts to change their diet without using a book or program, participation in a formal weight-loss program, using over-the-counter appetite suppressants or similar products to foster weight-loss, using Herbalife™, engaging in exercise specifically to lose weight, fasting, relaxation, laxatives, yoga, spiritual healing or prayer, massage specific for weight loss, acupuncture, induced vomiting, huesero or sobador, home remedies (specify), herbal teas, "detox" treatments, and "green smoothies."

The following items were included in the survey but are not presented in the report as they were not endorsed by any participant: chiropractor, homeopathy, aromatherapy, curandero, yerbero, bioelectromagnetic treatments, acupressure, hypnosis, reflexology, therapeutic touch, light therapy, colonic irrigation, psychics, metals, guided imagery, tai-chi, biofeedback. The survey concluded with a question asking participants how often (*never*, *sometimes*, or *always*) they disclosed to their doctor their use of the endorsed methods for weight control.

Following completion of the survey, participants with a diagnosis of diabetes were asked to complete an identical survey focusing specifically on products or methods previously used to manage diabetes, excluding medications prescribed by their physicians.

The frequencies for the endorsed survey items were calculated. Frequencies of disclosing use of alternative methods for weight or diabetes control to providers were compared between diabetic and nondiabetic participants using a chi-square analysis.

Table 1. Prevalence of Use for Methods Used for Weight Loss and Diabetes Control.

Treatment or product	Participants ($n = 85$) who had used it for weight loss, *n* (%)	Participants ($n = 29$) who had used it for diabetes control, *n* (%)
Modified diet by herself	84 (98.8)	29 (100)
Home remedies	73 (85.9)	28 (97)
Herbalife™ and similar products	66 (77.6)	12 (41)
Herbs and teas	65 (76.5)	24 (83)
Exercise	64 (75.2)	20 (69)
Fasting	50 (58.8)	0
Massage	41 (48.2)	6 (20)
Green smoothie	39 (45.9)	22 (76)
Pills (over the counter)	39 (45.8)	1 (3)
Commercial weight-loss program	18 (21.1)	0
Laxatives	13 (15.2)	1 (3)
Spiritual healing, prayer	8 (9.4)	4 (14)
"Detox" treatment	7 (8.2)	5 (17)
Induced vomiting	6 (7.1)	0
Relaxation	5 (5.9)	1 (3)
Huesero o Sobador	2 (2.3)	5 (17)
Yoga	1 (1.2)	0
Acupuncture	1 (1.2)	0

Results

Out of 101 study participants, 85 (84%) attended the first study session and completed the survey. Examination of the electronic medical record of participants revealed that 29 (34%) had a diagnosis of diabetes, 15 (18%) were diagnosed with prediabetes, and 41 (48%) had no diagnoses of either diabetes or prediabetes. All participants had been informed by their physician of their diagnosis. All were foreign-born immigrants, with most (93%) being Mexican-born, and the remainder of participants ($n = 6$) born in Guatemala. Most participants spoke only Spanish in the home, and five reported speaking either Spanish, Mixe, or Mayan at home. Mean age was 43 years ($SD = 9.8$, range 19-65 years). Mean weight was 87.1 kg ($SD = 17.0$; range 60.2-146 kg), and BMI was 36.2 kg/m^2 ($SD = 6.6$, range 27.1-62.9 kg/m^2).

Table 1 shows the prevalence rates in usage of CAM and other nonconventional methods or products for weight loss among all participants. Table 1 also shows prevalence rates for use of these methods for diabetes control by patients with diabetes. For weight loss, personal attempts to modify diet (98.8%), the use of home remedies (85.9%), commercial products such as Herbalife™ (77.6%), herbal remedies (76.5%), and exercise (75.2%) were the most frequently reported strategies and methods.

Herbs and Teas for Weight Loss

The most frequently mentioned herbs used for weight loss were: chia seeds mixed in water, green tea, infusions made with cola de caballo (*Equisetum giganteum*), artichoke leaves,

fucus (*Sargazo viejigoso*), bardana (*Arctium lappa*), agracejo rastrero (*Evolvus nummularius*), corn silk, espina colorada (*Solanum sisymbiifolium*), grapefruit peel, and pineapple skin, as well as unspecified "Chinese weight loss teas."

Nearly half of participants reported drinking homemade "licuado verde" ("green smoothie") every morning. The drink generally consisted of blending spinach, celery, aloe vera, nopal, or a variety of other green vegetables, and green apple or pineapple with milk or water. So-called "detox treatments" consisted of avoiding all solid foods for periods between 3 and 5 days, consuming only fruit and vegetable juices (green apple, pineapple, cucumber, celery, lime, ginger, and spinach), or lime, ginger, and green tea infusions, sweetened with honey.

Queries about specific home remedies used for weight loss yielded the following: wearing latex girdles or vests to promote sweating during regular daily activities or during exercise, drinking a cup of hot water with various acidic ingredients (e.g., lime juice, vinegar) first thing in the morning, adding lime juice or vinegar to foods to "burn the fat," replacing regular soft corn tortillas with toasted tortillas, and using sea salt instead of regular table salt. Participants also reported using homemade "slimming" creams made by mixing baking soda or coarse sea salt, camphor or rubbing alcohol, and Vicks Vaporub™, massaging the cream on target areas, and keeping the area covered with fabric strips or polyethylene food wrap (i.e., Saran™ wrap) overnight.

As shown, over 77% of participants used Herbalife™ or a similar Mexican commercial weight-loss supplement (BabiniCaps™), and over 45% of participants reported using over-the-counter weight-loss pills, such as HCA Garcinia Cambogia (active ingredient *Garcinia cambogia*), Proactol™, and PhenQ™.

As shown in Table 1, personal attempts to modify the diet were the most highly reported method used for diabetes control, endorsed by all 29 diabetic participants, followed by the use of home remedies (97%), use of herbs and teas (83%), "licuado verde" (76%), exercise (69%), and products such as Herbalife™ (41%). Massage and treatment by hueseros or sobadores specifically for management of pain and discomfort associated with diabetes was reported by approximately 20% of participants.

The most frequently reported herbs for diabetes control were nopales (prickly pear pad), cinnamon (consumed as an infusion or by adding ground cinnamon to food), green tea, Nopalina™ (a commercially available product whose primary ingredient is Canadian flax seed), and corn silk consumed as infusion.

Queries about specific home remedies for diabetes control yielded the following: drinking a blend of nopal and aloe vera, drinking hot water with apple vinegar, and drinking coffee infused with aloe vera. Participants also reported *limpias de sangre* ("blood cleansing"): cold or cool sitz baths or foot baths with eucalyptus oil, or the use of home *temazcales* or steam baths (e.g., sitting next to or under a steaming pot of hot water) followed by placing cold compresses on the abdomen.

Table 2 shows participants' disclosure of their methods for weight and diabetes management to their health care providers.

Table 2. Comparison of Disclosing Use of Alternative Methods Between Diabetic and Nondiabetic Participants.[a]

	Total sample, *n* (%)	Diabetic observed, *n* (%) [expected]	Nondiabetic observed, *n* (%) [expected]
Never	45 (53)	17 (58) [15]	28 (50) [29]
Sometimes	35 (41)	8 (28) [12]	27 (48) [23]
Always	5 (6)	4 (14) [2]	1 (2) [3]
Total	85	29	56

[a] $\chi^2 = 6.9$, $p = .03$.

As can be seen, there were differences by diabetes diagnoses in regard to their likelihood of disclosing to providers about methods used for nonconventional methods used for weight control, $\chi^2 = 6.9$, $p = .03$.

Discussion

Because low-income Hispanic immigrants tend to have more limited access to conventional health care services in the United States, their use of CAM might be expected to be high. This study explored the nonconventional methods for weight and diabetes control used by a group of Hispanic immigrant women with diabetes or at risk for the disease. Our findings indicate that among this group of low-income women with full access to health care, there is a high prevalence of use of alternative methods for both weight control and diabetes management.

The reported use of nonconventional remedies for diabetes self-care has been shown to be high among Hispanic individuals, with some studies indicating that more than 70% of Hispanic immigrants use herbal remedies (Howell et al., 2006; Malika, Desai, & Belliard, 2017) and between 70% and 95% report using various CAM methods specifically for diabetes control (Amirehsani & Wallace, 2013; Villa-Caballero et al., 2010). In our study, nearly all participants (97%) reported having used at least one alternative strategy for diabetes control outside of the conventional medical recommendations for diet or pharmacological treatments. It is possible that the high prevalence rates of use that emerged in our study may be due to the specific CAM and other nonconventional treatment modalities queried. For instance, studies report that when prayer is included in CAM surveys, rates of CAM use reported by Hispanic individuals increase from 89% to 94% (Green, Santoro, Allshouse, Neal-Perry, & Derby, 2017). It is also possible that because all participants in this study were part of a diabetes risk-reduction intervention, this study sample might have been more attuned to weight and diabetes management methods, and thus our participants may have been more likely than other individuals to report use of various methods for weight or diabetes control.

This study has several limitations that suggest that our results should be viewed with caution. Our study is limited by reliance on self-reported cross-sectional data, the

homogeneity of our sample, and the fact that the data were obtained from a convenience sample. The accuracy of these self-report data is unknown. Similarly, recall bias may affect reporting of past CAM and other methods of weight and diabetes management. While being foreign-born was not part of the study's inclusion criteria, all study participants were immigrant, which both reflects the population served by the clinic where the study was conducted and suggests caution when interpreting the results. The homogeneity of our sample greatly limits the generalizability of the findings to other Hispanic subethnicities, to nonimmigrant Hispanic individuals, to nonoverweight Hispanic women, or to Hispanic women of other socioeconomic backgrounds. Furthermore, all participants were enrolled in a diabetes risk-reduction intervention, indicating they were actively interested in engaging in behavior change.

Conclusion

While our results should be viewed with caution, they nevertheless suggest that the use of CAM therapies, home remedies, and dietary supplements for weight loss may be relatively high among Hispanic women interested in losing weight and managing their diabetes. While assessment of the efficacy or potential harmful effects of the products or behavior strategies reported by participants was beyond the scope of this study, it is clear that the use of herbal and other remedies for diabetes is prevalent in this low-acculturation immigrant Hispanic population. Understanding this trend can be beneficial for health care professionals who treat Hispanic women.

It is remarkable that most of our participants with diabetes, and half of those without diabetes, reported never disclosing to their health care provider about their use of CAM or other methods for diabetes or weight management. Given the potential deleterious effects of some of the reported products or practices, providers treating Hispanic patients would benefit from cultural and linguistic competencies to probe for the practice of various CAM among their patients. This includes becoming familiar with the practices reported in this study to facilitate rapport and enhanced communication and trust in the patient–provider relationship.

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