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RESEARCH ARTICLE

Development and Validation of the Cross-Cultural Checklist for Dietary Weight Loss Recommendations

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Abstract

The objectives of this study were to: identify the extent to which multiethnic Black and Hispanic weight loss program participants want nutrition educators 1) to acknowledge a client's accent, 2) to admit minimal familiarity with the client's ethnic foods and to express a desire to learn more about them, and 3) to describe how ethnic foods can be used to solve nutrition problems. The fourth objective was to determine the extent to which clients would rather receive a numerical or subjective diet quality score. The final objective was to use these preference data to validate the Cross-Cultural Checklist for Dietary Weight Loss Recommendations. A convenience sample of 208 university faculty members, staff and students who were enrolled in a university weight loss program was derived. This study was a four-semester a longitudinal design. The content validity of the instrument was determined by ten hospital dietitians. The test-retest reliability test showed that all testable items generated Kappa coefficients which were in "moderate", "substantial" or "almost perfect" agreement. Frequencies were calculated, and the FDR procedure was used to quantify respondents' preferences about ethnic food consumption during nutrition sessions. More than 75% of multiethnic Blacks and Hispanics indicated that it was very crucial or crucial for nutrition educators to inquire about frequency of ethnic food consumption and their favorite ethnic foods. More than 90% wanted to leave a nutrition session with 1) a numerical diet quality score; knowing 2) how their ethnic foods are classified as red/yellow/green-light ethnic foods; 3) how to neutralize the harmful effects of ethnic red-light foods; and 4) which ethnic superfoods could reverse their nutrition problems. Based on these preference data, the Cross-Cultural Checklist for Dietary Weight Loss Recommendations was developed and validated for use with multiethnic Blacks and Hispanics who intend to lose weight.

Keywords: Cross-Cultural Nutrition; Weight Loss Programs; Cultural Competence in Dietetics.

The foreign-born Black population in the United States grew from 3.1% in 1980 to 8.7% in 2013 [1], and the immigrant Black population is expected to increase to 16.5% by 2060 [2]. Among the metropolitan areas with the largest black populations, 34% live in the Miami metro area, in the New York metro area 28%, and in the Washington, D.C. area, it is 15% [1]. Between 2000 and 2013, the number of Black African immigrants living in the U.S. rose 137%, from 574,000 to 1.4 million. Africans now make up 36% of the total foreign-born black population [1]. The three largest birth countries of foreign-born Blacks is Jamaica (682,000; 18%), Haiti (586,000; 15%), and Nigeria (226,000; 6%). Among Spanish-speaking foreign Blacks, the largest birth country is the Dominican Republic (161,000; 4%). Each of these ethnic groups has unique ethnic foods, some of which are ethnic superfoods—foods which are nutrient-dense, anti-inflammatory and low-calorie [3].

In 2015, Hispanic Americans were the nation's largest ethnic or racial group numbering 56.6 million or 17.6% of the population. By 2060, the Hispanic population is expected to increase to 28.6% or 119 million [4]. The largest birth countries of Hispanic Americans is Mexico 63.4%, Puerto Rican 9.5%, Salvadoran 3.8%, and Cuban 3.7%. As with multiethnic Blacks, each multiethnic Hispanic group has distinctly different ethnic foods and superfoods. In any group, ethnic food consumption varies from zero to 100%. Since ethnic food consumption is a major component of food intake among non-White Americans [5], nutrition educators need to offer culturally sensitive dietary recommendations which include ethnic foods, especially if clients eat ethnic foods liberally.

Overweight and obesity rates are higher among Black Americans than Whites [6]. The phrase "African American" in published literature is inappropriate because it does not differentiate among multiple ethnicities--African Americans, Caribbean Americans, Haitian Americans, and Africans from Africa. Black American adults are nearly 1.5 times as likely to be obese compared to White adults. Approximately 47.8%

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of Black Americans are obese (including 37.1% of men and 56.6% of women) compared to 32.6% of Whites (including 32.4% of men and 32.8% of women). More than 75% of Black Americans are overweight or obese (including 69% of men and 82.0% of women) compared to 67.2% of Whites (including 71.4% of men and 63.2% of women).

Hispanic/Latino adults and children are also more likely to be overweight than White adults and children [7]. Approximately 42.0% of Latino adults are obese compared with 32.6% of Whites. More than 77.0% of Latino adults are overweight or obese, compared with 67.2% of Whites. Among Hispanic children ages 2 to 19, 22.4% are obese, compared with 14.3% of White children. More than 38.9% of Latino children are overweight or obese, compared with 28.5% of White children. Rates of severe obesity (BMI greater than 120% of the weight and height percentiles) are also higher among Latino children ages 2 to 19 (6.6%) compared with White children (3.9%). Latino obesity rates at 2 to 5 years old are more than quadruple those of Whites (16.7% compared to 3.5%). By ages 6 to 11, 26.1% of Latino children are obese, compared with 13.1% of Whites.

Cultural competence is defined as the ability of providers and organizations to effectively deliver health care services that meet the social, cultural, and linguistic needs of patients [8]. A culturally competent health care system can help improve health outcomes and quality of care, and can contribute to the elimination of racial and ethnic health disparities. The goal of culturally competent health care services is to provide the highest quality of care to every patient, regardless of race, ethnicity, cultural background, English proficiency or literacy. Relevant training on cultural competence and cross-cultural issues for health professionals and creating policies that reduce administrative and linguistic barriers to patient care may contribute to the goal of culturally competent care. To advance health equity, the Academy of Nutritionists and Dietitians has included cultural competence in the undergraduate and graduate training, and recommended it in continuing education for practicing professionals [9]. Similarly, the American Association of Diabetes Educators has also emphasized the need for training in cultural competence for diabetes educators [10].

The majority of nutrition educators do not share the ethnicity of their culturally different clients. Approximately 85% of 89,300 registered dietitians are non-Hispanic White females [11], and among 43% of the 14,000 members of the American Association of Diabetes Educators 87% and non-Hispanic White females [12]. Since the non-White population is predicted to increase to 50% by the year 2020 [4], nutrition educators may need to build rapport with culturally different clients by identifying what they want to know about ethnic foods and then sharing culturally relevant recommendations on ethnic food consumption.

The classification of foods according to the traffic light—green, yellow, and red—food labels have been shown to assist individuals in making healthier choices when selecting foods [13-15]. Green light foods are the healthiest items such as fruits and vegetables because they are low in calories and high in nutrients. Yellow light or "slow down" foods are okay to eat every day in moderation. They include: pasta, rice, bread, tortillas, noodles, eggs, lean meat, chicken, low fat yogurt, nuts and seeds, olive oil, soy foods, whole grains, fish, low fat cheese, and vegetable oil. Red light foods are "stop" and think foods because they are low in nutrients; high in calories, fat or sugar; or contain artificial sweeteners, hydrogenated oils, or trans-fats. They include: butter, cookies, candy, frozen yogurt, fatty meats, pastries, chips, and white bread. However, review of the published literature indicates that there are no reports on the impact of classifying foods according to the traffic light system on dietary improvements among non-White population groups. Anecdotal information from nutrition educators who work with culturally different clients indicates some success with applying the traffic light system to ethnic foods.

One approach to increasing the number of repeat visits is to generate high client satisfaction by the end of the initial visit or group session. Lower levels of satisfaction with physician care have been documented among non-Whites in general [16], and among Latinos and Asian Americans [17]. However, there are no published data on client satisfaction with nutrition professionals, diabetes educators, and weight loss program leaders. If one of the goals of nutrition counseling or a weight loss group session is to create motivated clients who are confident in making dietary improvements, nutrition educators need to discover what culturally different clients want to know about ethnic food consumption, and then meet their expectations. Ethnic foods represent a major component of foods consumed among multiethnic Black Americans, Hispanic Americans, Asian and Arab Americans. A comparative review of ethnic food consumption among multiple ethnic groups indicated that Arab Americans have been shown to score the highest percentage of ethnic food consumption among all ethnic groups—93% [18]. It is therefore essential for nutrition educators to guide culturally different clients on how ethnic foods can be used to make dietary improvements.

Nutritionists, dietitians, diabetes educators, weight loss program leaders may be well versed in the science of food and nutrition, but there is uncertainty on what is considered appropriate communication about ethnic food consumption among culturally different clients. Anecdotal evidence from practicing professionals also suggests that there is a need for culturally different clients to increase the number of repeat visits for consultations and group meetings among registered dietitians, weight loss program leaders, and diabetes educators in order to achieve and maintain desired weight status. Informal conversations with weight loss program leaders, hospital dietitians, diabetes educators, members of dietetic associations, and nutritionists have led to ongoing debates on the advisability of handling four specific issues on ethnic food consumption among culturally different clients. The debated issues include whether to:

1. Verbally acknowledge a client's accent or attire,

2. Admit minimal familiarity with the client's ethnic foods and a desire to learn more about their ethnic food consumption,
3. Share how ethnic foods can be used to solve nutrition problems, and whether to
4. Offer clients a numerical diet quality score (70 out of 100) or a subjective assessment--very good, good, or not-so-good.

However, review of the published literature indicates that there are no reports on what culturally different clients need to know about ethnic foods during nutrition counseling or group nutrition education, and whether they prefer a numerical diet quality score. The objectives of this study were to identify the extent to which multiethnic Black and Hispanic weight loss program participants want nutrition educators 1) to acknowledge a client's accent, 2) to admit minimal familiarity with the client's ethnic foods and to express a desire to learn more about them, and 3) to describe how ethnic foods can be used to solve nutrition problems. The fourth objective was to determine the extent to which clients would rather receive a numerical or subjective diet quality score. The final objective was to use these preference data to validate the Cross-Cultural Checklist for Dietary Weight Loss Recommendations.

Methods

Sample Size

This study was a four-semester a longitudinal design. A convenience sample of 208 participants was derived over a four-semester period. The optimal sample size was calculated by using a Wilcoxon Mann-Whitney and determined that to achieve 80% power using a Wilcoxon rank sum test, alpha = .05, and a medium/large effect size (d = .7), sample sizes of 35 per group (faculty/staff and students) were sufficient [19].

Demographic information of respondents--gender, age, university status, ethnicity, and planned weight loss--was secured from program records. The survey consisted of eight questions on ethnic food consumption and it was administered early in the semester, prior to nutrition consultations. The survey was administered to respondents immediately before and after group personal training sessions. Survey completion time averaged two minutes. The only criterion for inclusion in the survey was participation in the weight loss program.

Respondents

Faculty, staff and students at a major metropolitan university paid to enlist in an 8-week weight loss program. The components of the program included unlimited workout sessions, nutrition advising meetings; and pre-, mid-, and post-program weigh-ins. All one-hour training sessions were conducted with a personal trainer in groups of three to seven participants. Approval to administer the survey was secured from the University's Institutional Review Board.

Instrument Development

Based on informal debates among weight loss program leaders, consulting dietitians and diabetes educators, the following concepts were identified for exploration: nutrition educator inquiring about a client's accent, ethnic food consumption, how ethnic foods can be classified and used to solve nutrition problems; and clients' preference for a numerical (versus descriptive) diet quality score. The content validity of the instrument was assessed by soliciting feedback from ten practicing hospital dietitians in Miami and Fort Lauderdale. Each hospital dietitian had provided nutrition services for culturally different non-White clients for a minimum of ten years.

Statistical Analysis

To measure test-retest reliability, the instrument was administered to 20 weight loss program participants (10 multiethnic Blacks and 10 multiethnic Hispanics) and re-administered after two weeks. Cohen's Kappa Coefficient was used to determine the test-retest reliability for each item. Possible values for the Kappa Coefficient range from <0 to 0.81-1.0 where <0 indicates less than chance agreement, 0-0.20 indicates slight agreement, 0.21-0.4 fair agreement, 0.41-0.60 moderate agreement, 0.61-0.80 substantial agreement, and 0.81-1.0 indicates almost perfect agreement [20,21].

The Wilcoxon signed rank test was performed to compare the test-retest reliability of eight items. The Benjamini–Hochberg (BH) procedure was used to control the False Discovery Rate (FDR) at 0.05 [22]. The crucial ranks of eight items were decided using percentage of "Very Crucial" and "Crucial" and the statistically significant differences among different items based on the BH procedure. For example, an item was ranked as the most crucial item if it showed higher percentage of the two crucial responses than other items that are significantly different from it based on the BH procedure. The items without significant differences were considered as equally crucial with each other. Statistical Packages for the Social Sciences (SPSS) Statistics version 25 was used to analyze the data [23].

Results

The Kappa coefficient was 1.00 for: gender, age, university status and ethnicity; and for planned weight loss it was .90. All testable items in the questionnaire were in "moderate", "substantial" or "almost perfect" agreement, presented in Table 1. Demographic information of respondents--gender, age, university status, ethnicity, and planned weight loss—is presented in Table 2.

Only 58.4% of weight loss program participants reported that it was either very crucial 18.8% or crucial 39.6% for nutrition educators to ask about their accents (Table 3). Approximately 90.4% of respondents indicated that it was either very crucial 50.0% or crucial 40.4% for nutrition educators to ask about their frequency of ethnic food consumption. As many as 92.2% indicated that it was very crucial 65.5% or crucial 26.7% to be asked about their favorite ethnic breakfast food, lunch, dinner and snack food. Approximately 75.8% thought that it was very crucial 33.8% or crucial 42.0% to be asked about their favorite ethnic drink.

HOW CRUCIAL WOULD IT BE FOR THE NUTRITION EDUCATOR TO ASK YOU THE FOLLOWING QUESTIONS:	Kappa coefficient
I am hearing an accent, where are you from?	.79*
How often do you get to eat your ethnic foods?	.82*
I'm not as familiar with your ethnic foods as I'd like to be. Tell me about your favorite ethnic breakfast food, lunch, dinner, and snack food.	.77*
What is your favorite ethnic drink, how is it prepared?	.69*
HOW CRUCIAL WOULD IT BE FOR YOU TO HEAR ABOUT...	
…your numerical diet quality score (70 out of 100) instead of a rating--very good, good, or not-so-good?	.90*
…which ethnic foods are red-light disease-causing, yellow-light or nutritious green-light foods?	.78**
…what you could do to neutralize the harmful effects of high-fat, high-sugar ethnic foods?	.69***
…your ethnic superfoods—foods which reverse disease?	.88*

Kappa: <0: less than chance agreement, 0-0.20: slight agreement, 0.21-0.4: fair agreement, 0.41-0.60: moderate agreement, 0.61-0.80: substantial agreement, 0.81-1.0: almost perfect agreement. p-values: <0.001*, 0.005**, 0.011***

Table1: Test-Retest Reliability Coefficients for Preferences Questionnaire.

Demographic Characteristics		N	%
Gender	Females	179	86.2%
	Males	19	13.8%
Age	Less than 30	83	40.1%
	31-50 years	86	41.2%
	50 years or older	39	18.7%
University Status	Faculty	53	26.1%
	Staff	63	30.9%
	Student	92	44.0%
Ethnicity	Multi-ethnic Black (African American, Caribbean American, Haitian American)	98	47.2%
	Multi-ethnic Hispanic (Cuban American, Mexican American, Central and South American)	110	52.8%
Planned Weight Loss	Less than 10 Pounds	9	4.3%
	11-40 pounds	181	87.2%
	More than 41 pounds	18	8.5%

Table 2: Demographic Characteristics of Weight Loss Program Participants (N=208).

HOW CRUCIAL WOULD IT BE FOR A NUTRITION EDUCATOR TO ASK YOU THE FOLLOWING QUESTIONS:	VERY CRUCIAL	CRUCIAL	NOT THAT CRUCIAL	CRUCIAL RANKS
I am hearing an accent, where are you from?	18.8	39.6	41.5	8
How often do you get to eat your ethnic foods?	50.0	40.4	9.6	5
I'm not as familiar with your ethnic foods as I'd like to be. Tell me about your favorite ethnic breakfast food, lunch, dinner, snacks.	65.5	26.7	7.8	4
What is your favorite ethnic drink, how is it prepared?	33.8	42.0	24.2	7
HOW CRUCIAL WOULD IT BE FOR YOU TO HEAR ABOUT...				
…which ethnic foods are red-light disease-causing, yellow-light or nutritious green-light foods?	68.4	26.2	5.3	1
…what you could do to neutralize the harmful effects of high-fat, high-sugar ethnic foods?	74.9	21.3	3.9	1
…your ethnic superfoods—foods which reverse disease?	72.1	22.6	5.3	1
…your numerical diet quality score (70 out of 100) instead of a rating--very good, good, or not-so-good?	52.9	37.3	9.8	5

Table 3: Client Preferences on Nutrition Educator Questions (N=208).

When asked what they wanted to know before they left a nutrition session, 94.4% of weight loss program participants reported that it was either very crucial 68.4% or crucial 26.2% to classify ethnic foods as red/yellow/green light foods. As many as 96.2% indicated that it was either very crucial (74.9%) or crucial (21.3%) to discover how they could neutralize the effect of red light ethnic foods. A majority 94.7% of respondents indicated that it was very crucial (72.1%) or crucial (22.6%) for them to find out which ethnic superfoods could reverse disease. The overwhelming majority 90.2% of respondents preferred to receive a numerical score on diet quality with 52.9% describing the numerical score was very crucial, and 37.3% describing it as crucial.

Based on the Crucial Ranks data, the three most crucial features (each rated as 1) were: 1) the classification of ethnic foods as red/yellow/green, 2) how to neutralize the harmful effects of red light ethnic foods, and 3) which ethnic superfoods can

Did I ask:	3--I'm not as familiar with your ethnic foods as I'd like to be. Tell me about your favorite ethnic breakfast food, lunch, dinner, and snack food. 2--How often do you get to eat your ethnic foods? 1--What is your favorite ethnic drink, how is it prepared? 1--I am hearing an accent, where are you from?
Did I describe:	4--which ethnic foods are red/yellow/green foods? 4--what could be done to neutralize the harmful effects of red light foods? 4--which ethnic superfoods could which reverse disease? 2--the client's numerical diet quality score?

The maximum possible Checklist Score is: 21.
Actual Score =
Checklist Score out of 100= Actual Score / 21 *100= ____%
The higher the Checklist score, the higher the culturally sensitivity of the nutrition session.

Table 4: The Cross-Cultural Checklist for Dietary Weight Loss Recommendations.

reverse disease. The least crucial feature (rated as 8) was the need to inquire about a client's accent. Appendix A presents the results for the Benjamini–Hochberg procedure with a False Discovery Rate of 0.05.

The Cross-Cultural Checklist for Dietary Weight Loss Recommendations

These preference data from multiethnic Black and Hispanic weight loss participants indicate a stronger preference for communication with nutrition educators on some topics compared to others. Based on the relative preference of respondents, this Checklist offers a weighted score of each feature during a weight loss group or one-to-one counseling session. Based on the preference data and crucial ranks, the features of the Checklist were assigned 4 points for the three most crucial items (original rank =1), 3 points for two rank 4 items, 2 points for two rank 5 items, and 1 point for rank 7 and 8. The maximum number of possible points for the Checklist is: 21. The higher the score of the Cross-Cultural Checklist, the higher the likelihood that clients have received the information which they need about ethnic foods and an individualized numerical score of diet quality.

The Cross-Cultural Checklist for Dietary Weight Loss Recommendations has been validated with multiethnic Blacks and Hispanics who intend to lose weight. Since more than 75% of Black Americans, and 77% of Latino adults are overweight or obese, this Checklist is potentially applicable to 72 million overweight or obese adults--29 million Black Americans, and 43 million Hispanic Americans, provided they want to lose weight. The Cross-Cultural Checklist is presented in Table 4.

Discussion

One of the major differences between non-White and White clients is that non-White clients are more likely to be consuming ethnic foods than Whites. Therefore, for maximum effectiveness of a nutrition session with culturally different clients, this Cross-Cultural Checklist needs to accompany a traditional checklist for nutrition counseling sessions which include the Involving, Exploration, Resolving, Closing Phases, Evaluation; and building rapport [24].

The 1996 Report of the United States Preventive Services Task Force asserted that providers need simple, inexpensive, rapid, and valid tools that can a) provide a snapshot of the patient's diet, b) provide immediate feedback to the patient, and c) afford the clinician the opportunity to use the results to promote dietary improvements [25]. However, as many as 52.9% of multiethnic Hispanics and Blacks described a numerical diet quality score as very crucial, and 37.3% described it as crucial. Review of the published literature indicates that the only brief, validated tools which generates a numerical diet quality score are the: 16-item fat and a 7-item fruit and vegetable intake screening tools which have been validated for Hispanic populations [26]. Similar tools which offer a numerical diet quality score--the 29-item My Nutrition Profile [27], the American Institute for Cancer Research's 5-item questionnaire [28], the American Heart Association electronic 10-item Healthy Eating Quiz generates a score out of 10 [29]—have not been validated, and they do not include ethnic foods.

There is an unmet need for brief, validated tools which include ethnic foods and which offer numerical diet quality scores for the largest multiethnic non-White populations. Since each ethnic group has its unique ethnic foods and superfoods, validated brief ethnic screeners which quantify diet quality are urgently needed for the largest populations of multiethnic Blacks (African Americans, Caribbean Americans, Africans from Africa) [6], multiethnic Hispanics (Mexican, Puerto Rican, Salvadoran, Dominican, Cuban Americans) [7], multiethnic Asians (Chinese, Indian, Filipino Americans) [30], and multiethnic Arab Americans (Lebanese, Egyptian, Syrian) [31]. To be culturally sensitive, these screeners also need to be written at fifth grade reading level (to be understood), and they need to include visuals (to minimize respondent burden). One advantage of a culturally sensitive brief screener on diet quality is that with immediate feedback, respondents may be empowered to make informed decisions on the importance of making dietary changes. For example, an individual who scores 60% may be surprised at the low score and become motivated to make dietary changes.

Food frequency questionnaires have been modified to include ethnic foods, and validated with Hispanic, Black American, Asian and Native American populations. However, they are problematic because they are too long and they do not offer a numerical score on diet quality. The USDA Healthy Eating Index generated a diet quality score which has been shown to vary by race with Mexican Americans having the highest HEI

score—an average of 64.5 during 1999-2000, non-Hispanic Whites 64.2, non-Hispanic Blacks 61.1 [32]. However the instrument is 40 pages long—way beyond the literacy skills and willingness of many non-White Americans.

In the absence of existing brief, validated, culturally sensitive diet quality tools for multiethnic Black Americans, Hispanic Americans, nutrition educators may need to adopt a three-step approach to meet their need for a numerical score of diet quality. First, a traditional brief diet quality tool can be used to provide a numerical score of diet quality. Second, there is a need to assess ethnic food intake for breakfast, lunch, dinner, beverages, and snacks. Third, the nutrition educator needs to offer a numerical score of the appropriateness of the client's ethnic food intake. Despite its subjective nature, this assessment of the numerical score does meet the preference for a numerical score of diet quality.

There are no published reports in the literature on the extent to which the red/yellow/green light classification of foods may be particularly helpful among low-literacy persons. Non-English speakers may find it easier to understand than words. Additional research is needed to determine how the red/yellow/green light labeling system assists short-term and long-term dietary decision-making among non-White persons, especially since they suffer from disproportionately from nutrition-sensitive diseases, and since they are less likely to have health insurance. Although 12% of Whites have no health insurance, 35% of Alaska Natives/Native Americans and Hispanics, and 18% Blacks do not have health insurance [33].

These data indicate that more than 90% of multiethnic Blacks and Hispanics consider it to be very crucial or crucial to know how ethnic foods can be used to solve nutrition problems. Consequently, nutrition educators need to emphasize 1) how ethnic foods can be classified as red/yellow/green light foods, 2) how to neutralize the harmful effects of red-light ethnic foods, and 3) which ethnic foods can reverse disease. Addressing these three topics may increase client satisfaction, facilitate repeat visits, and ultimately improve health outcomes. Conversely, if the nutrition educator does not inquire about ethnic food intake, the client's diet quality score may underestimate nutrient intake from ethnic foods; and the nutrition educator would not be able to make ethnic dietary recommendations which are important to the client. For individuals who consume mostly ethnic foods, the error would be higher compared to those who consume ethnic foods minimally. Furthermore, the client would leave the nutrition session without knowing how to incorporate ethnic foods into the dietary changes.

Limitations

There are several limitations of the generalizability of these findings. First, the multiethnic Black and Hispanic weight loss participants who were motivated enough to pay for a university-based weight loss program may be different in specific ways to individuals who are not willing to pay for a weight loss program. Students paid $175, faculty and staff members $200 to participate in the semester-long program. This is particularly important because non-Whites are less likely to accurately perceive actual weight status and less likely to attempt weight loss than Whites [34]. Misperception of weight status is the discrepancy between an individual's actual weight status and personal perception of weight status. It occurs as underestimation of weight status. After viewing BMI silhouettes, obese persons generally perceive themselves as overweight, and overweight persons describe themselves as normal weight. Prevalence of weight misperception varies from 55.4% in non-Hispanic Blacks to 49.1% in Mexican Americans [34], to 62.0% among Haitian American outpatients [35], compared to 33.9% among non-Hispanic Whites [34].

Second, these data describe the preferences of participants who enrolled in a weight loss program. Multi-ethnic Blacks and Hispanics who have enrolled and paid for a weight loss program may be different in specific ways to individuals who are attempting to resolve other nutrition conditions such as: diabetes, hypertension, hypercholesterolemia, osteoporosis, anemia or cancer.

Third, this survey instrument indicated that 58.4% of multiethnic Black and Hispanic weight loss participants reported that it was very crucial or crucial that health care practitioners inquire about their accent. None of these respondents in this sample wore dreadlocks, African attire, a Sikh turban, an Arab gutra, an Indian sari, or a female Muslim hijab. Additional research is needed to determine the extent to which members of these groups would prefer nutrition educators to respond to ethnic attire. It would also be important to quantify clients' preference for phrases regarding headgear and attire. Personal communication with men and women who have locks indicate a preference for the term locks (not dreadlocks), African attire (not costume). Informal conversations with persons who wear locks or African attire; Sikh-Americans, Arab Americans, Indian Americans and Muslim Americans--universally indicate that each group welcomes questions about their ethnic attire and their ethnicity. Ethnic attire is considered to be a symbol of pride--similar to the use of the American flag on a jacket lapel, car or when displayed on a home. When asked if they would be offended if a nutrition educator asked about their headgear or attire, every individual of multiple ethnicities expressed surprise and insisted that they welcomed questions about their headgear or attire. The general consensus is that the headgear and attire were invitations to questions about their culture. Quantification of client preferences for these terms is important because the use of the wrong term may alienate clients.

Future research may need to determine how preferences about ethnic food consumption varies by gender, age, university status, planned weight loss. Additional research is also needed to determine if clients whose communication preferences about ethnic food consumption are met are more likely to return for future consultations than clients whose preferences are not honored.

Conclusions

These preference data indicate that more than 75% of multiethnic Blacks and Hispanics who were enrolled in a weight loss program indicated that it is very crucial or crucial for nutrition educators to inquire about frequency of ethnic food consumption and favorite ethnic foods. More than 90% wanted to leave a nutrition consultation or a weight loss group meeting with four specific information bits: a numerical diet quality score; how their ethnic foods are classified as red/yellow/green-light ethnic foods; how to neutralize the harmful effects of ethnic red-light foods; and which ethnic super foods can reverse their nutrition problems. Nutrition sessions which focus on these topics meet the stated preferences of these population groups. On the other hand, nutrition consultations and weight loss group meetings which do not include these four components are not meeting the information needs of culturally different clients, and this may decrease the likelihood of repeat business. The Cross-Cultural Checklist for Dietary Weight Loss Recommendations (Table 4) may be used by nutrition educators to ensure that they meet the information needs of multiethnic Blacks and Hispanics who intend to lose weight.

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Appendix

Questions	*p*-value	Rank of p-value	BH Critical Value (rank/28*0.01)
How crucial would it be for you to hear about what you could do to neutralize the harmful effects of high-fat, high-sugar ethnic foods? - I am hearing an accent, where are you from?	0.0000000000*	1	0.00179
How crucial would it be for you to hear about your ethnic superfoods--foods which reverse disease? - I am hearing an accent, where are you from?	0.0000000000*	2	0.00357
I'm not as familiar with your ethnic foods as I'd like to be. Tell me about your favorite ethnic breakfast food, lunch, dinner, and snack food. - I am hearing an accent, where are you from?	0.0000000000*	3	0.00536
How crucial would it be for you to hear about which ethnic foods are red-light disease-causing, yellow-light or nutritious green-light foods? - I am hearing an accent, where are you from?	0.0000000000*	4	0.00714
How crucial would it be for you to hear about what you could do to neutralize the harmful effects of high-fat, high-sugar ethnic foods? - What is your favorite ethnic drink, how is it prepared?	0.0000000000*	5	0.00893
How often do you get to eat your ethnic foods? - I am hearing an accent, where are you from?	0.0000000000*	6	0.01071
How crucial would it be for you to hear about your ethnic superfoods--foods which reverse disease? - What is your favorite ethnic drink, how is it prepared?	0.0000000000*	7	0.01250
How crucial would it be for you to hear about your numerical diet quality score 70 out of 100 (instead of a rating--very good, good, or not-so-good)? - I am hearing an accent, where are you from?	0.0000000000*	8	0.01429
What is your favorite ethnic drink, how is it prepared? - I'm not as familiar with your ethnic foods as I'd like to be. Tell me about your favorite ethnic breakfast food, lunch, dinner, and snack food.	0.0000000000*	9	0.01607
How crucial would it be for you to hear about which ethnic foods are red-light disease-causing, yellow-light or nutritious green-light foods? - What is your favorite ethnic drink, how is it prepared?	0.0000000000*	10	0.01786
How crucial would it be for you to hear about your numerical diet quality score 70 out of 100 (instead of a rating--very good, good, or not-so-good)? - How crucial would it be for you to hear about what you could do to neutralize the harmful effects of high-fat, high-sugar ethnic foods?	0.0000000085*	11	0.01964
How crucial would it be for you to hear about what you could do to neutralize the harmful effects of high-fat, high-sugar ethnic foods? - How often do you get to eat your ethnic foods?	0.0000000169*	12	0.02143
What is your favorite ethnic drink, how is it prepared? - How often do you get to eat your ethnic foods?	0.0000000794*	13	0.02321
How crucial would it be for you to hear about your ethnic superfoods--foods which reverse disease? - How often do you get to eat your ethnic foods?	0.0000015320*	14	0.02500
How crucial would it be for you to hear about your numerical diet quality score 70 out of 100 (instead of a rating--very good, good, or not-so-good)? - How crucial would it be for you to hear about your ethnic superfoods--foods which reverse disease?	0.0000015750*	15	0.02679
How crucial would it be for you to hear about your numerical diet quality score 70 out of 100 (instead of a rating--very good, good, or not-so-good)? - What is your favorite ethnic drink, how is it prepared?	0.0000016220*	16	0.02857
What is your favorite ethnic drink, how is it prepared? - I am hearing an accent, where are you from?	0.0000077625*	17	0.03036
How crucial would it be for you to hear about your numerical diet quality score 70 out of 100 (instead of a rating--very good, good, or not-so-good)? - How crucial would it be for you to hear about which ethnic foods are red-light disease-causing, yellow-light or nutritious green-light foods?	0.0000360185*	18	0.03214
How crucial would it be for you to hear about which ethnic foods are red-light disease-causing, yellow-light or nutritious green-light foods? - How often do you get to eat your ethnic foods?	0.0000376894*	19	0.03393
I'm not as familiar with your ethnic foods as I'd like to be. Tell me about your favorite ethnic breakfast food, lunch, dinner, and snack food. - How often do you get to eat your ethnic foods?	0.0000457318*	20	0.03571

How crucial would it be for you to hear about what you could do to neutralize the harmful effects of high-fat, high-sugar ethnic foods? - I'm not as familiar with your ethnic foods as I'd like to be. Tell me about your favorite ethnic breakfast food, lunch, dinner, and snack food.	0.0066567216*	21	0.03750
How crucial would it be for you to hear about your numerical diet quality score 70 out of 100 (instead of a rating--very good, good, or not-so-good)? - I'm not as familiar with your ethnic foods as I'd like to be. Tell me about your favorite ethnic breakfast food, lunch, dinner, and snack food.	0.0194444960*	22	0.03929
How crucial would it be for you to hear about what you could do to neutralize the harmful effects of high-fat, high-sugar ethnic foods? - How crucial would it be for you to hear about which ethnic foods are red-light disease-causing, yellow-light or nutritious green-light foods?	0.0473931411	23	0.04107
How crucial would it be for you to hear about your ethnic superfoods--foods which reverse disease? - I'm not as familiar with your ethnic foods as I'd like to be. Tell me about your favorite ethnic breakfast food, lunch, dinner, and snack food.	0.0660751568	24	0.04286
How crucial would it be for you to hear about your ethnic superfoods--foods which reverse disease? - How crucial would it be for you to hear about what you could do to neutralize the harmful effects of high-fat, high-sugar ethnic foods?	0.1797124949	25	0.04464
How crucial would it be for you to hear about which ethnic foods are red-light disease-causing, yellow-light or nutritious green-light foods? - I'm not as familiar with your ethnic foods as I'd like to be. Tell me about your favorite ethnic breakfast food, lunch, dinner, and snack food.	0.2396222583	26	0.04643
How crucial would it be for you to hear about your ethnic superfoods--foods which reverse disease? - How crucial would it be for you to hear about which ethnic foods are red-light disease-causing, yellow-light or nutritious green-light foods?	0.4124834220	27	0.04821
How crucial would it be for you to hear about your numerical diet quality score 70 out of 100 (instead of a rating--very good, good, or not-so-good)? - How often do you get to eat your ethnic foods?	0.7231533034	28	0.05000

Appendix A: Results for the Benjamini–Hochberg procedure with a False Discovery Rate of 0.05.
1. P-values were from Wilcoxon signed rank test.
2. * The first 22 are significant based on BH (p value< BH critical value), and the remaining 6 are not significant (can be used to decide the tied ranks).