

Impact Assessment of Culturally Competent Nutrition Trainings on Diabetes Type II Control to Male Latinos/Hispanics

Marcia Almuina Guemes, Yuliette Gonzalez* and Yanelis Gonzalez

Nutricion y Salud LLC, Doraville, Georgia, USA

Abstract

Culturally competent health education can potentially save lives and overall improve quality of life. Health conditions such as diabetes, heart disease and blood pressure, if identified early, can possibly be controlled and less likely to become a major health problem. The present study was conducted to assess the impact of culturally competent health and nutrition education trainings on diabetes type II control directed to male Latinos/Hispanics living in Atlanta, Georgia, United States. The five-week long education trainings were offered weekly to 50 volunteer participants that had been diagnosed with diabetes type II by their primary physician for over a year. Other than receiving diabetes prescription medication, the participants were not engaging in any other specific health activity intended to support diabetes type II control. Three other health factors were taken in consideration: height, weight, and Body Mass Index (BMI), which were measured at the beginning of each session. After each session, the participants were asked to implement the lessons learned at home, individually monitor blood glucose levels and record results in a tracking sheet provided. Results of the study include a stabilization and/or decline in glucose levels for the participants who reported to have continued their prescribed medications and implemented the knowledge learned in the education trainings. Weight loss was also noted the participants who were intentionally interested in losing weight as a result of the program. The results of the study thus conclude that culturally competent health and nutrition education trainings on diabetes type II control can make a significant impact in the health and nutritional status of male Latino/Hispanics.

Keywords: Nutrition; Culturally competent health education; Male Latinos/Hispanics; Diabetes type II control; Health and nutrition trainings

Introduction

Latinos/Hispanics in the U.S. constitute a racially and culturally heterogeneous ethnic group that historically has temporarily stayed or permanently migrated for different reasons, including economic opportunity and/or political persecution [1]. Consequently, Latinos/Hispanics have become the largest ethnic minority group in the U.S., comprising more than 15% of its population (U.S. Census Bureau) and as the fastest growing ethnic minority population projected to more than double between 2000 and 2050 [1,2].

Regarding health status, Latinos living in the U.S. have a higher incidence of chronic diseases, including diabetes, hypertension, heart disease, and obesity and have fewer physician visits in 12 months when compared to non-Hispanic Whites [3-5]. The Latino/Hispanic population appears to use health care services differently when compared to other ethnic groups. Although access health care is the most frequently mentioned barrier to good health for Latinos, it is not the only influential factor, nor is it the only determinant of good health. A national trend analysis found that among individuals 50 years and older, Latinos self-ranked their health as the worst, when compared with their non-Latino White and African American counterparts [1,2]. Latinos in the U.S. as a group have the lowest rate of health insurance coverage—29% uninsured as compared to a 10.4% for the White population group and also lower household income compared to non-Hispanic Whites households (\$39,000 vs. \$50,000) [6,7].

Latino Men Health Decision Making and use of Health Care Services

Although the Latino/Hispanic population is constantly increasing and its health concerns are being studied, there is little research about the Latino men health status and decision-making. Concerning Latino/

Hispanic males in particular, adequate access to health education can be lifesaving and recent studies show that this group is more likely to die from diabetes, chronic liver disease, liver cancer [3,8] and human immunodeficiency virus/acquired immunodeficiency syndrome [1].

The concept of fatalism, as related to the reliance on fatalistic beliefs and lack of faith in preventive medicine have been studied in Latino/Hispanic men as affecting the use of health education and screenings that target disease prevention [6]. Moreover, the status of Latino/Hispanic men's health decision-making is potentially affected by cultural values such as *machismo*, which is defined as the cultural value that Latino/Hispanic men are expected to behave in a masculine way and masculine identity in which males are self-reliant, strong, robust, and should never reveal vulnerability [8,9]. There is the assumption that Latino immigrants that have lived for longer periods in the U.S., are members of a later immigrant generation, and are fluent English-speakers, represent higher levels of acculturation and lower levels of *machismo* [10]. However, even after becoming acculturated to an American way of life, *machismo* can affect how Latino men understand and respond to health decision making and health care access [2].

Contradicting with *machismo* is the concept of *caballerismo* also present in the literature as a significant factor for Latino/Hispanic men

*Corresponding author: Yuliette Gonzalez, MPH, Nutricion y Salud LLC, Doraville, 5382 Lanford Springs Ct Lilburn, Georgia 30047, USA, Tel: 4045511777; E-mail: ygonzalez2277@gmail.com

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decision making and healthcare use. *Caballerismo* is the prosocial view of masculinity and is centered on the idea that manhood can be rooted in family centeredness, social responsibility, and emotional connectedness [6]. For example, a recent study by Garcia, Valdez, and Hooker concluded that the Latino/Hispanic men perceived responsibility of the future of their families as an influential factor to better health decision making and use of healthcare services. The increased vulnerability that comes with disease and its potential complications, such as being unable to fulfill their traditional responsibilities serves as motivation to change behaviors [8]. Apparently, for Latino/Hispanic men it would be easier to follow a healthy diet regimen if the whole family is doing the same and Latina/Hispanic spouses have a large influence on diet and physical activity-related behaviors.

A Culturally Competent Health Education

Culture is an important societal factor determining the values, beliefs, and behaviors of an individual or group [11]. *Cultural competence* is a complex know-act affecting the cognitive, emotional, behavioral, and environmental dimensions of a person; involving knowledge, skills, and that leads to a culturally effective action [12]. Cultural competence is necessary for providing quality care and is an ongoing process that involves accepting and respecting differences, while not letting personal beliefs have undue influence on those whose worldview is different [13].

The Latino/Hispanic community is potentially a complex group due to its significant variations in racial and ethnic heritages. Structural factors such as the lack of culturally and linguistically competent health programs and services have been identified as barriers to Latino/Hispanic health decision making and healthcare use [9]. Thus the importance of a culturally competent health education that increases the extent to which individuals are well informed about health care matters such as nutrition, sanitation, and the availability of health care resources [4] integrating cultural safety, considering the perception of the recipient and taking in consideration the outcome of cultural competence.

Methodology

Recruitment: Culturally competent flyers were used as advertising targeting Latino/Hispanic men and distributed in three Catholic churches located in the city of Atlanta, which have Spanish mass services and high Latino/Hispanic attendance. The advertising also targeted women to recruit their male spouses/partners.

Sample characteristics: Out of the 64 participants that volunteered, 50 participants were selected to attend he five-week long education training, based on the following criteria:

1. Male Latino/Hispanic
2. Age range 40-65
3. Resident of the city of Atlanta
4. Diabetes type II diagnosis by their primary physician for more than one year
5. Receiving diabetes prescription medication
6. Not engaging in any other specific health activity intended to support diabetes type II control (ex. Exercise, diet)

The study sample was composed of 50 Hispanic males, primarily of Mexican descent (62%), living in the city of Atlanta. The majority of the participants were in the 56-60 years old age range (30%) with a high school degree or below (88%) and not proficient in English (94%).

Moreover, the large majority of the participants (82%) had an annual household income of \$25,000 or less. The demographic characteristics of the study participants are listed below in Table 1.

Literature research: For this concept study, and for the preparation of the training sessions, nutrition literature, literature connected with medicine, and sociology was used as reference sources. Sample articles were derived from different online databases selecting the most appropriate for the purpose of this study.

Education training: Participants were asked to attend a Nutrition education training every week. The sessions took place Saturday mornings and lasted 1 to 2 hours, depending on the topic discussed. Participants were sent reminders via text message of the date and time of the upcoming session.

Latino /Hispanic health professionals with culturally competent skills presented the education-training sessions in Spanish. All handouts and presentation materials were translated to Spanish. All sessions included a formal presentation followed by an interactive activity. As family involvement is a crucial, the participants were allowed to bring their spouses and family members to the sessions as guest participants. Participants were allowed enough time to ask questions and engage in group discussions.

Participants were asked to implement the knowledge learned at home and to measure glucose levels daily. A tracking sheet was provided for participants to enter blood glucose levels after measurement. Participants were asked to bring the tracking sheet to each session, for staff to enter data into the statistical software.

Evaluation

Evaluation forms were provided for the participants to complete by the end of each session and participants were asked to rate the sessions 0-10 points based on the professionalism of the presenters, relevancy of the information presented and overall quality of the presentation.

Demographic Characteristics		
Variable	Frequency N=50	Percent N=50
Age		
40-45	6	12%
46-50	12	24%
51-55	9	18%
56-60	15	30%
61-65	8	16%
Education		
High School graduation or below	44	88%
Some college, no degree	5	10%
College degree or above	1	2%
Country		
Mexico	31	62%
Guatemala	10	20%
El Salvador	7	14%
Honduras	2	4%
English Proficient		
Yes	3	6%
No	47	94%
Household Income		
<\$25,000	41	82%
\$25,000 - \$49,999	9	18%
>\$49,999	0	0%

Table 1: Demographic characteristics of study participants.

A summary of the session topics, description, duration, attendees and rating of the five-week education training is provided below in Table 2.

Data Analysis

Data obtained from the participants was entered weekly and analyzed using statistical software. Additional data was collected regarding three other health factors:

1. Height- measured upon entrance to the program
2. Weight- measured weekly
3. Body Mass Index (BMI) - calculated weekly as well.

BMI calculates the healthy weight based on height. The following criteria were used to analyze BMI results.

- Underweight: BMI is less than 18.5
- Normal weight: BMI is 18.5 to 24.9
- Overweight: BMI is 25 to 29.9
- Obese: BMI is 30 or more

Results

Results of the study revealed a decline and stabilization in glucose levels for the participants with high glucose levels who reported to have taken the diabetes medication as prescribed by their primary physician and have implemented the knowledge learned. Weight loss was also noted for 38 participants who were intentionally interested in losing weight as a result of the program.

Participants highlighted the benefit of the presence of the family members as motivators for behavior change and the social support provided during the sessions. Participants commented that after hearing from people in similar situations, they were able to better relate and understand the information that was being presented and mentioned a preference for group sessions rather than individual consultations. Moreover, participants emphasized on the benefit of learning how to integrate healthy food choices to culturally bound dietary norms and to work with their family structure to promoted healthy behaviors. Participants also demonstrated interest in the integration of technologies such as phone apps, and other innovative approaches to assist with blood sugar control and healthy diet habits. Glucose, Weight and BMI results are provided below in Tables 3 and 4.

Education Training Summary and Participant Rating					
Week	Topic	Description	Duration	Attendees	Rating
1	What is Diabetes Type II and How to Measure Blood Sugar at Home	Presentation provided an overview of the condition and encouraged to measure glucose levels as directed by their physician. Examples of blood sugar measuring devices were used for demonstrational purposes.	2hr	47	9.5
2	What is Sugar and How Much Should we Consume	Presentation provided information on the maximum amount of added sugars a person should eat in a day. Spoons of different sizes, and measuring cups were used in the presentation and available for participants to practice measuring sugar.	1hr	50	10
3	How to Read a Food Label	Presentation demonstrated how to read a food label correctly. Enlarged printed FDA food label examples were provided as visual materials. Varieties of products were available for the participants to test and practice their knowledge on reading food labels.	1hr	44	9.8
4	How Choose the Right Ingredients and Prepare Food in a Healthy Way	Presentation demonstrated how to properly choose ingredients and prepare healthy meals. The presentation was followed by a 30 minutes cooking class provided by a professional chef, demonstrating adequate use sugar, salt, fats and appropriate serving size.	2hr	47	10
5	Physical Exercise	Presentation highlighted the importance of physical activity to control Diabetes Type II, followed by a 30 minutes Zumba class delivered by a professional trainer.	1hr	49	10

Table 2: Five-week education training summary and participant rating.

Glucose Results								
Age	Frequency N=50	Percent N=50	Statistics	Week 1	Week 2	Week 3	Week 4	Week 5
40-45	6	12%	Mean	245	229	205	174	152
			SD	65	60	49	34	18
46-50	12	24%	Mean	250	218	197	191	158
			SD	68	54	50	58	23
51-55	9	18%	Mean	244	231	209	220	174
			SD	56	67	60	96	50
56-60	15	30%	Mean	264	260	204	206	180
			SD	65	56	58	65	67
61-65	8	16%	Mean	258	230	192	170	176
			SD	62	58	51	63	67

Table 3: Glucose results of study participants.

Weight and BMI Results								
Age Range	Frequency N=38	Percent N=38	Statistics	Week 1	Week 2	Week 3	Week 4	Week 5
40-45	6	12%	Weight					
			Mean	227	223	218	213	206
			SD	33	33	32	31	31
			BMI					
			Mean	35	34	33	33	32
			SD	5	5	5	5	5
46-50	12	24%	Weight					
			Mean	216	210	206	201	198
			SD	29	28	29	28	28
			BMI					
			Mean	32	31	31	30	29
			SD	4	4	4	4	4
51-55	9	18%	Weight					
			Mean	229	225	221	215	200
			SD	46	46	46	47	42
			BMI					
			Mean	35	32	31	30	33
			SD	4	5	5	5	6
56-60	15	30%	Weight					
			Mean	198	190	182	181	175
			SD	13	14	12	17	13
			BMI					
			Mean	27	25	22	21	20
			SD	1	3	5	1	4
61-65	8	16%	Weight					
			Mean	227	220	216	199	185
			SD	37	35	33	32	36
			BMI					
			Mean	32	30	26	24	22
			SD	3	2	3	4	2

Table 4: Weight and BMI results of study participants.

Conclusion

In order to decrease health disparities in the Latino/Hispanic men population, sociocultural factors need to be addressed. A culturally competent system instructing professionals on how culture and gender influence the health behaviors of Latino/Hispanic men should be taken in consideration when planning and implementing health related programs in the community. As the results of this study conclude, culturally competent health and nutrition education trainings on diabetes type II control can make a significant impact in the health and nutritional status of male Latino/Hispanics.

Limitations

This study had limitations that should be acknowledged. The study sample was composed of Hispanic males, primarily of Mexican descent, living in the city of Atlanta, which may limit the generalizability of the findings to Hispanics in other regions of the United States. Furthermore, the study sample was predominantly foreign-born, and Spanish-speaking. Lack of supplies, and forgetfulness, were reasons for some patients not measuring glucose levels and entering data. Missing glucose level data could have slightly altered the results of the study.

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