

Perceptions about Cholesterol among a Hispanic Population and Intent to Behavior Change after Intervention

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Background: Studies have shown that people with Hispanic ethnicity have an increased risk of developing high cholesterol (Liao, 2008).

Purpose: This research aimed at studying perceptions about cholesterol in Hispanics, and uncover, if they were willing to make lifestyle changes because of cholesterol and its effects on health.

Methods:Qualitative: Interviews were conducted with five participants from a Northeast Texas community based organization.

Quantitative: Pre and post surveys were given to eighty-three different participants, conveniently chosen from the community based organization. A paired sample t-test was used to compare the responses.

Results: The qualitative study showed that it was hard for people to make the time to exercise due to busy work schedules and majority of them ate greasy food cooked in lard at home.

The quantitative study showed that people were willing to make lifestyle changes after the intervention: They were more likely to consider getting their cholesterol tested at least once a year ($p < .000$), exercise at least three times a week ($p < .000$) and eat a balanced diet consisting of fruits and vegetables ($p < .000$).

Conclusion: Participants weren't clear on the effects of cholesterol on health before the intervention. There was an overwhelming positive response after the intervention where people were willing to make lifestyle changes. These changes included eating a balanced diet, exercising at least three times a week, and getting cholesterol tested at least once a year.

Keywords: Cholesterol, Behavior change, Hispanics, Perceptions, Intent

Introduction

According to the American Heart Association (AHA), 49.9% of Mexican-American men and 50% of Mexican-American women have high or borderline high total cholesterol levels (2010). These figures are slightly higher than those for non-Hispanic Caucasian-American men (47.9%) and women (49.7%). The disparity between Mexican-Americans and Caucasian-Americans widens when it comes to LDL (low-density cholesterol, the "bad" cholesterol) levels. According to the AHA, 39% of Mexican-American men have high LDL levels, compared to 31.7% of white men. LDL cholesterol leaves cholesterol deposits throughout the body, thus LDL and total cholesterol levels are good predictors of heart disease.

Sharma (2001) found that mean cholesterol levels were highest in Whites second to Hispanics, and third to African Americans. This study involved 6450 patients with type 2 diabetes and hypertension from the Harris County Hospital District Community Clinics. Also, Hispanics had higher abnormal triglycerides than African Americans.

While scientists aren't completely sure why some ethnic groups are at higher risk for elevated cholesterol and heart disease, they are certain that both genetics and lifestyle choices play a role. Genes influence how food is metabolized and how much cholesterol the body produces. Cholesterol isn't just found in food; the liver actually creates approximately 75% of the cholesterol found in blood (Whitney & Rofles, 2011). Genetic makeup can influence how much cholesterol is created, as well as the ratio of LDL to HDL (high-density lipoprotein, the "good cholesterol"). Though researchers have not

determined precisely which genes affect cholesterol production, they are making great strides in this area.

The aim of this research was to study the perceptions about cholesterol and diet choices among a Hispanic population, and observe if there will be changes in diet choices and perceptions about cholesterol once they were informed about cholesterol and its effects on health. This is important because Hispanics are culturally used to eating foods that are high in fat content (Neuhouser, 2004). If, in fact, they were able to alter their diet choices they may be able to control their cholesterol levels.

The behavior change model that was applied to this study was the Social Cognitive Theory.

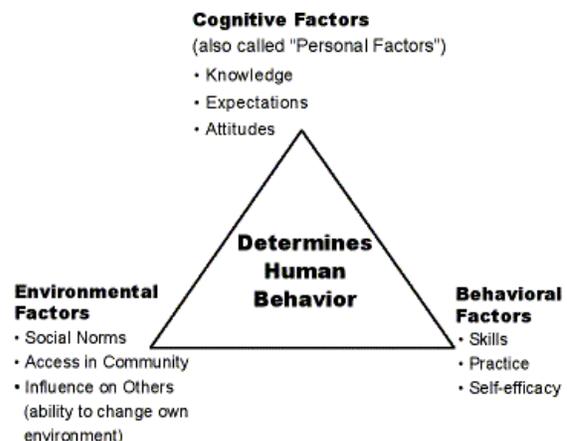


Figure 1: Social Cognitive Theory Model

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This theory highlights three factors: The first factor is individual characteristics which look at the person's sense of self-efficacy about the new behavior, their confidence that they can do it and overcome obstacles to doing it. The second factor is the environmental (external) factors which look at the social/physical environment surrounding the individual, the behavior of others and the consequences of that behavior, which results in *vicarious learning*. The third factor is the interactive process of reciprocal determinism, where a person acts based on individual factors and social/environmental cues, receives a response from that environment, adjusts behavior, acts gain and so on (Edberg, 2007).

Qualitative Methods

Interviews were conducted with five people at the Literacy Council located in Tyler, Texas. The Literacy Council of Tyler, is an incorporated nonprofit 501(c)(3) organization. It has been established since 1990. It helps over 2,500 adults improve their literacy skills each year. The staff consists of 35-40 people and there are 350 volunteers in a year out of which 200 are active. Its mission is to help adults in the community receive help in improving their literacy skills—from beginning reading instruction to GED completion and English as a Second Language instruction. It does this through the use of dedicated staff and an army of volunteer tutors. The services offered by the Literacy Council are in collaboration with Tyler Junior College, Tyler Independent School District, local churches, businesses, and local libraries. All the services offered there are free of charge to the adult learner.

The interviewees were conveniently chosen with the help of the director of the Literacy Council. They belonged to the upper level ESL classes to facilitate the flow of conversation between the interviewer and the interviewee because they could speak English reasonably well. The interviews were tape recorded. The participants were asked to feel comfortable, not to be nervous and ask questions, considering the session to be a discussion session rather than an interview. They were explained that they did not have to answer all questions and they could refuse to answer any question if they felt uncomfortable. In addition, they were told they were free to leave the room at any point of the interview if they wanted to. They were asked not to share this information or talk about it with others. Furthermore, they were told that anything discussed in the interview would be kept confidential and will be used for research purposes only. Lastly, they were told that they did not have to be experts in the topic being discussed and that only their impressions about the topic were being observed.

The interviews were conducted in a classroom of an elementary school and only one participant was interviewed at a time. The people interviewed were of Hispanic origin belonging to different places in Latin America. There were three males and two females. Their mean age was 32.8 years. The average interview time lasted 45 minutes to an hour with each participant. A combination of open ended and close ended questions were used.

The questions asked were as follows: What do you know about cholesterol? What are the dangers of having high cholesterol? How often do you get your blood work done to monitor cholesterol? What is a high-fat diet? Do you look at nutrition labels when you buy and eat food? How many days a week do you exercise? How many home cooked meals do you eat in a week? How many meals do you eat in a day? The data was analyzed using content analysis.

Quantitative Methods

Participants for this study were recruited from the Literacy Council of Tyler, Texas. They were a combination of males and females (28.9% males and 69.9% females). As policy at the Literacy Council, students attending there are placed into different classes by the staff. Class capacity is 20 students per class. Each class is then assigned a 'section number', similar to a special code, as a class identifier by the staff. There are twelve classes in all with an average of 20 students per class.

At first all students were given the pre and the post surveys to answer the questions. Two hundred and twenty questionnaires were processed; no one refused to take the questionnaire. Participants were systematically randomized in the following manner: Twelve small blank pieces of paper were produced signifying the 12 classes at the Literacy Council. Each piece of paper had the Council's corresponding class code or 'section number' written on it. With the help of a random individual 5 pieces of paper were randomly drawn out from a hat. These 5 classes were used in this study.

Four questions asked participants' age, sex, race and place of birth. To address the issue of matching the pre and post survey, a numbering system was used. The student, who numbered their pre-survey with the number 1, had to put the same number on the post survey. All students from all 12 classes were asked to follow this numbering system. Furthermore, the pre-survey consisted of 18 questions using the Likert scale. Questions asked what they knew about cholesterol, what their dietary habits were, whether they got their cholesterol tested, if they knew about the hazards related to cholesterol, would they alter their dietary choices if they were educated on cholesterol, etc.

Once the pre-surveys were administered, a presentation was given to the participants about cholesterol and its hazards, lasting 45 minutes to an hour. After the presentation, the post survey was administered. The post-survey had 8 questions in order not to repeat some of the same questions from the pre-survey. Questions like, I know someone in my family who has diabetes, I have high cholesterol, I am a diabetic, I have borderline BP or high BP etc., were left out on the post survey.

In this study it was hypothesized that cholesterol education would cause significant difference in perceptions about cholesterol and diet choices among a Hispanic population. Eight questions from the pre and 8 questions from the post surveys were used to analyze the effects of the intervention. Their responses were analyzed using SPSS Statistics version 17. Demographic data were examined. To compare the responses of the pre and post surveys a paired

samples t-test was used. The cut off was set at <0.05 for the p-value significance.

None of the qualitative interviewees were involved in the quantitative survey.

Qualitative Results

Table 1: Demographics, Number and (Percentages)

Sex	Male	3(66.7)
	Female	2(33.3)
Age	<30	2(33.3)
	30 or above	3(66.7)
Marital Status	Single & alone	1(16.6)
	Divorce/Separated	1(16.6)
	Married	3(66.7)
Race	White	0
	African-American	0
	Hispanic	5(100)
	Other	0

The interviews were held at the Literacy Council of Tyler Texas. Five participants were interviewed, 3 males and 2 females. All participants were enrolled in ESL classes at the time of the interview. The following themes emerged as a result of the participant’s response: “Stuff you eat”, blood pressure, time, cereal, eating greasy foods, cooking at home, blaming spouses, limited eating choices, family history, laziness, and not threatening.

Participants were asked, “What do you know about cholesterol and where does it come from?”

Subject 1: “I don’t know exactly where it comes from, but it’s a bad thing.”

Subject 2: “I think it comes from the greasy food.”

Subject 3: “I think it is in they (the) mit (meat), and eggs, and other stoff (stuff) you eat every day.”

All of the participants said it was bad. They explained that “stuff you eat” meant whatever people eat in their daily lives.

When asked, “What does cholesterol do to you in the long run?”

Subject 1: “It cause (causes) blood pressure in you (your) body and it raises you (your) blood pressure in you (your) body, I guess.”

Subject 2: “It cause (causes) heart disease, I think.”

Subject 3: “It cause (causes) grease in you veins, maybe, I don’t know.”

They were not aware of the real consequences of cholesterol build up in the body. Rather they were making guesses. There were varied responses and only 20% of the participants said that it deposits grease in blood vessels. The rest did not correlate it with any type of arterial build up.

Responses to “How often do you exercise in a week?” revealed that physical activity was not a major part of the participants’ lives due to time constraints.

Subject 1: “I no (don’t) have time to exercise.”

Subject 2: “I working too much.” (I work long hours).

Subject 3: “I don’t like workout (working out)...ha ha ha....I’m lazy.”

Subject 4: “I go to park (the park) once a week with me familia (my family). Leisure walking I guess, but no exercise.

Only 20% of the participants said that they engaged in exercise of some sorts which included running, walking and cycling.

When asked, “On any given day what does your diet consist of?”

Cereal was a popular choice of all participants for breakfast besides other foods. Everyone expressed their passion for eating “greasy food” cooked in lard.

Subject 1: “I try to eat fruits and vegetables, but not all the time.”

Subject 2: “I eat the fried chicken, flour tortillas, sour cream and cheese.”

Subject 3: “I eat hamburgers, drink sodas and eat lots of other same type of junk food.”

Only 20% of the participants talked about eating all their meals “healthy” which included salad, tuna, wheat bread & grilled chicken.

When asked, “Do you cook your meals at home?” there were mixed responses. Overall, 60% said yes and 40% said they did not cook at home, instead ate out.

Subject 1: “Yes, in my house my wife cooks at home.”

Subject 2: “Sometimes my mom cooks or sometimes I cook.”

Subject 3: “We do very little cooking in the home. We get the chicken from the Walmart and we cook some beans at home and eat with rice.”

Subject 4: “Maybe I eat 2 times at home and rest of the time I eat fast foods or in other restaurants.”

As continuation of the previous question, participants were asked, “Do you consider yourself to be a healthy eater?”

The married participants ended up blaming their spouses for cooking unhealthy meals and the single ones blamed their mothers for doing the same. Eighty percent identified themselves as unhealthy eaters.

Subject 1: “My wife cooks, pero (but), she maketh (makes) lotta (lots of) greasy food.”

Subject 2: “Sometimes my mom cooks, but lots of grease becoz (because) she put the lard in food.”

Subject 3: “We (couple) eat out a lot. Not very healthy food, I guess.”

Twenty percent said they ate a healthy and a well balanced diet comprising of whole grains, fruits and vegetables.

When asked, “Do you feel like you have good choice of healthy eating places in the city?” All participants agreed they are limited on healthy eating choices.

Subject 1: “Its harr (hard) to find something that is healthy and tastes good.”

Subject 2: “In compare (comparing) to my house food and outside food, I don’t like the boiled chicken outside becoz (because) fried chicken in the home tastes so good.”

Subject 3: “Everywhere the grease, grease, grease and oil in the food outside. Very harr (hard) to find healthy foods.”

When asked, “Do you have a family history of any disease?” Eighty percent of them said they knew someone who had diabetes in their family. Some were diabetic themselves.

Subject 1: “My mather (mother) has diavetes (diabetes) and mucho (high) cholesterol.”

Subject 2: “My wife I are diavetico (diabetic).”

Subject 3: “My uncle has high cholesterol.”

Even though they knew someone who had a health condition, 40% of the participants said they may or may not change their diet because they are lazy. They said they don’t perceive it threatening because they don’t have the disease, yet.

Lastly, participants were asked if they would make a dietary change if they were educated about the hazards of cholesterol. Sixty percent of them said yes and 20% said maybe. The remaining 20% answered no because they had heard something about it before but due to their “laziness”, they did not make the change. From the ones who said yes and maybe, they said it was not going to be easy but they can make the change.

Quantitative Results

Table 2: Demographics, Number and (Percentages)

Sex	
Male	24 (28.9)
Female	58 (69.9)
Age	
18-30 years	24 (28.9)
31-40 years	25 (30.1)
41-50 years	17 (20.5)
51-60 years	16 (19.3)
61-70 years	1 (1.2)
Race	
White	0
African-American	0
Hispanic	81 (97.6)
Other	0

**Note: The percentages do not add up to 100 due to missing responses in surveys*

There were a total of 83 questionnaires collected from 5 random classes at the Literacy Council of Tyler. The participant’s demographic breakdown is included in Table 2 and the age and gender percentage is included in Figure 1. The gender breakdown shows that 28.9 % identified themselves as male and 69.9% female. The

participants had a mean age of 38.5 with a standard deviation of 11.8. The ages of the population studied were broken down into groups for easier comparison. Most of the participants were between the ages of 31-40 years which made up 30.1% of the sample. The lowest percentage age group, which represents 61-70 years, was 1.2% of the sample. There seemed to be a distinct Hispanic element when race was analyzed. Without including missing responses, which were 2, one hundred percent of the participants identified themselves as Hispanic.

Six questions on the pre survey asked the participants about family history and medical history of conditions. The responses for ‘agree’ and ‘strongly agree’ are summarized in Table 3. Forty seven percent of the participants said they knew someone in their family who either had borderline or high cholesterol, 51% of them said they knew someone in their family who had diabetes, 31% of them said they knew someone in the family who had heart disease, 11% said they had high cholesterol, 6% said they were diabetic and 22% of them said they had borderline or high BP.

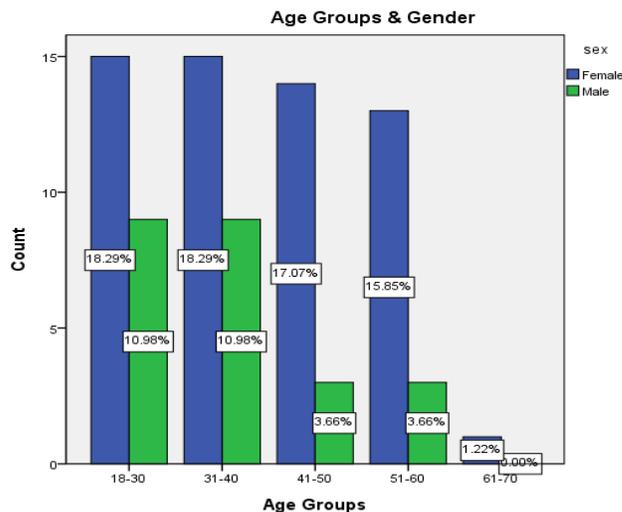


Figure 2: Demographic Percentage

In this study it was hypothesized that cholesterol education would cause significant difference in perceptions about cholesterol and diet choices among a Hispanic population. The .05 level of significance was used in the analysis. Eight questions from the pre and 8 questions from the post surveys were used to analyze the effects of the intervention using the pair sample t-test. Table 4 summarizes the t-tests results of the eight paired questions on the pre and post surveys.

Question 10 and question 25 looked at their awareness levels of the hazards of cholesterol in the pre and post questionnaire. There was a significance difference (p<.000) in their awareness level after the intervention. Question 3 and question 21 tested if they eat a balanced diet in the pre survey and if they will eat a balanced diet after the intervention. There was a significant difference (p<.000) in the post survey on their committing to eat a balanced diet. Question 1 and question 19 on the pre and

the post survey asked if they were familiar with the term cholesterol. There was significance ($p < .034$) found in their familiarity after the intervention. Question 2 and question 20 asked them if they considered themselves to be healthy eaters, there was no significant difference ($p = .538$) found here. Question 4 and question 22 asked if they use and will use nutrition facts label when shopping for food. There was a significant difference ($p < .000$) after the intervention that

Table 3: Percentages on family history and medical history of conditions

Questions	Percentage that responded strongly agree + agree
1. I know someone in my family that has borderline/high-cholesterol	47%
2. I know someone in my family who has diabetes	51%
3. I know someone in my family who has heart disease	31%
4. I have high cholesterol	11%
5. I am a diabetic	6%
6. I have borderline BP or high BP	22%

they will use nutrition facts label when shopping for food. Question 8 and question 23 asked them if they get their cholesterol checked at least once a year and will they get it checked once a year. There was a significant difference ($p < .000$) in their pre and post responses after intervention and people were more willing to get it tested at least once a year. Question 9 and question 24 asked if they exercise at least 3 times a week and if they will exercise at least 3 times a week. There was a significant difference ($p < .000$) in the responses after the intervention and people said they will exercise at least 3 times a week. Question 18 and question 26 asked them if they would consider a dietary change if they are better informed on the pre survey and that if they are confident they can change their diet after the intervention and there was no significant difference ($p = .066$) after the intervention.

Discussion

A major finding of this study was that once people were informed about cholesterol and its effects on health, there was gain in knowledge about cholesterol. Their perceptions changed as they were better informed after the intervention and participants claimed they would make changes in their diet choices. In comparing the pretest and the post test questions that participants answered, it was clear that there was a gain in their knowledge. When asked if they were familiar with the term cholesterol in the pretest (mean 3.29) and the post test (mean 3.65), knowledge about cholesterol increased. The term did have a negative connotation in their minds initially but it was not defined. In one of the interviews with the participants, she said it was found in “stuff you eat”, some said that it caused blood pressure, others associated it with eating greasy foods, and said that is was “fat found in the veins” and overall, from the qualitative investigation, they said it was

“bad”. Most people were not familiar with the technicalities with cholesterol build up.

Since there are so many commercials on television warning people about cholesterol it was an expected response that people would think that it was bad. Then again there are many pharmaceutical companies that are marketing cholesterol lowering drugs. The message conveyed by these companies is that people can take the medication by talking to their doctor, this in turn will lower their cholesterol and they can go about by their regular diet, making fewer changes. It is possible that a combination of knowledge from media messages and social interactions amongst people could cause them to have these initial unclear perceptions about cholesterol.

On the other hand, the intervention did not have an effect on participants’ perceptions about themselves being healthy eaters pretest (mean 3.01) and posttest (3.07). There was no significance difference observed. On a separate question though, they answered that they don’t eat a balanced diet combining fruits and vegetables. To further test their diet patterns they were asked if they eat a balanced diet consisting of fruits and vegetables every day in the pretest (mean 3.01). The post test question added “I will eat” to the same pretest question. The post test had a positive response (mean 3.95). People strongly agreed they would eat a balanced diet incorporating fruits and vegetables in it.

A very interesting finding was discovered in their use of nutritional information. They were asked if they often use nutritional labels when shopping for food (mean 2.66) in the pretest and the posttest added “I will use” to the same pretest question (mean 4.10). There were many people who strongly agreed they will use nutritional information when they shop for food in the future. Studies have shown that proper nutrition information is imperative in a variety of settings because proper nutrition is thought to assist in the prevention of heart disease, cancer and diabetes, and is thought to assist in cognitive development, development of strong bones and maternal and fetal health during pregnancy (Brech, 1996). Without nutrition education, people are left to learn about nutrition on their own and many suffer the consequences of this lack of knowledge. Therefore, nutrition education must include transformative learning experiences (Mezirow, 1995) so that behavior change in food selection occurs.

In addition to knowledge about nutrition, it is generally considered a good practice to get blood tested for glucose levels and cholesterol. Many pharmacies now offer automated blood pressure cuffs for people to check their blood pressure. In a pretest question participants were asked if they get their cholesterol tested at least once a year (mean 2.77) and the posttest added “I will get my cholesterol tested” to the same question mean (4.31). Many people strongly agreed that they will get their cholesterol tested after the intervention. It is important for people to get screened and know their baseline levels of cholesterol as it is a good marker of CHD. According to the CDC, People with high total cholesterol have approximately twice the risk of heart disease as people with optimal levels. A desirable level is lower than 200 mg/dL (CDC, 2010). However, when participants were qualitatively interviewed, they had expressed concerns about affordability of getting

tested for cholesterol, and therefore most of them said that they don't pay attention to getting prescreened like they should.

The intervention had a similar effect to the National Heart, Lung, and Blood Institute (NHLBI) of the National Institutes of Health (NIH) that launched the National Cholesterol Education Program (NCEP) in November 1985. The goal of the NCEP was to contribute to reducing illness and death from coronary heart disease (CHD) in the United States by reducing the percentage of Americans with high blood cholesterol. Their goal was to raise awareness and understanding about high blood cholesterol as a risk factor for CHD and the benefits of lowering cholesterol levels as a means of preventing CHD. The NCEP has made significant strides toward its goal of reducing the prevalence of high blood cholesterol in the United States. Evidence of this progress was clearly visible in the results of national surveys. The Cholesterol Awareness Survey (CAS) of physicians and the public showed that from 1983 to 1995, the percentage of the public who had ever had their blood cholesterol checked rose from 35% to 75%. In comparison, percentages in this

study rose from 30% to 85%. This demonstrates that for most people reinforcement is a good thing. Those who may have had objections and apprehensions about getting their cholesterol tested seemed to be aware of the importance of getting it done and said they would.

In addition to diet, participants were asked if they exercise at least 3 times a week. Participants strongly agreed that they would incorporate exercise into their lifestyle after the intervention (pretest mean 2.73 to post test mean 4.06). However, when participants were qualitatively interviewed most of them said that going to the park on the weekends with the extended family and engaging in play was the closest they considered to a workout. According to them play consisted of running around with their little cousins or an occasional game of soccer or just leisure walking with family members. No one mentioned doing exercise on a regular basis and they blamed their work schedule for this. Some worked all seven days and some worked overtime. Due to this they could not make the time to engage in fitness related activities.

Table 4: Summary of the paired t-tests on the 8 paired questions from pre and post surveys

Comparison of paired questions from the pre and post questionnaire	Compare means		Paired Differences			Sig. (2-tailed)
	Pre-Survey	Post-Survey	Std. Deviation	95% CI of the difference		
				Lower	Upper	
Q10-Q25 I am aware of the hazards of cholesterol	3.40	4.19	1.351	-1.099	-.486	.000
Q3-I eat a balanced diet with fruits and veggies Q21-I will eat a balanced.....	3.01	3.95	1.136	-1.191	-.682	.000
Q1-Q19 I am familiar with the term cholesterol	3.29	3.65	1.477	-.699	-.028	.034
Q2-Q20 I consider myself a healthy eater	3.01	3.07	.899	-.261	.137	.538
Q4-I use nutrition labels when shopping for food Q22-I will use nutrition labels.....	2.66	4.11	1.437	-1.776	-1.119	.000
Q8-I get my cholesterol tested at least once a year Q23-I will get my cholesterol tested.....	2.77	4.31	1.492	-1.884	-1.207	.000
Q9-I exercise at least 3 times a week Q24-I will exercise.....	2.73	4.05	1.251	-1.603	-1.047	.000
Q18-I might consider a dietary change if I am better informed Q26-Im confident I can change my diet now that I am educated on cholesterol	4.49	4.27	1.066	-.015	.454	.066

A question asked the participants if they were aware of the hazards of cholesterol. Participants said they were more aware of the hazards after the intervention (pretest mean 3.40, post test mean 4.19). All the participants who were qualitatively interviewed used the word “bad” when defining cholesterol and the most common misconception among them was that is caused high blood pressure. Fortunately the intervention was very successful in changing their perceptions about the hazards of cholesterol.

Concerning their self-efficacy about making the change, the question on the pretest asked if they might consider a change if they are informed about cholesterol (mean 4.49) and the post test stated “I am confident I can change my diet now that I am educated on cholesterol” (mean 4.27). This was not a significant change. Still, surprisingly, their self-efficacy decreased. It is very possible that they could have not totally understood this question or misinterpreted what it meant by the way they answered. There is a big difference in wanting to make a change versus confidence that one can make the change. Looking at the responses of the participants it was evident that they wanted to make the changes and were very positive about making the change but when their self-efficacy was in question, that was where they performed most poorly. Further studies need to look at ways to increase self-efficacy when planning a similar intervention.

Limitations

A question about the marital status of the participants needs to be included to see if being married vs. unmarried would make a difference in the way participants answer questions, or would that factor affect their level of commitment to making the change. It would be interesting to observe to what extent couples can influence each other’s decision when committing to something.

The intervention needed to be done for a longer time; there were time limitations on the presentation. More details could have been included if there was more time. YouTube videos on clot formation were removed from the presentation due to time constraints.

Participants were able to express themselves in greater detail in the qualitative interviews as compared to the quantitative questionnaire. This allowed for the qualitative portion to better explain why they would or would not be willing to change their behavior after the intervention. Furthermore, it is not clear if everyone really knew how to use the Likert scale. Future studies should test the reliability of the questionnaire.

Strengths

In this sample, 6% of the participants said they were diabetic. This statistic is very consistent with the national average for people living with diabetes which is 7.8% in a recent report according to the National Institute of Health (NIH, 2010).

Also, in this study, 11% of the participants said they had high cholesterol which is close to the national average among Hispanics of 14.9% according to the Centers for Disease Control (CDC, 2008). It is very possible that there may be a few participants who had high cholesterol and did not know it because they didn’t get it

checked. The questionnaire was evaluated by other health studies students and a health studies professor for content validity.

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