

CULTURAL IDENTITY AND HEALTH BEHAVIORS ON ASIAN AMERICAN
RISK PERCEPTION OF TYPE 2 DIABETES

BY

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Abstract

Poor diet, exercise and unhealthy lifestyle habits can all contribute to the onset of Type 2 diabetes. For some people, a change in daily activity can be due to a change in lifestyle. Although the lifestyle does change, the precautions to be taken for a disease, as susceptible to people, as type 2 diabetes may not alone be sufficient. Groups such as Asian Americans are more vulnerable to developing type 2 diabetes. A poor risk perception of how vulnerable they are to developing type 2 diabetes increases the rates at which Asian Americans are contracting the disease. Asian Americans also have varying degrees of identification towards their Asian culture which could account for differences in risk perception. Identification plays a defining role in what health behaviors people choose to exhibit, and follow when it comes to their health. However, data from this study indicated that there is not a significant relationship between variables of cultural identity, risk perception and health behaviors. In the case of Asian Americans, differences in sex, income and age make an impact on associated variables of cultural identity, health behaviors and risk perception. Current studies in the field do not specifically target growing Asian American minority group, and should be taken into account the Asian American minority group in health care and disparity studies as their demographics can play a role in their overall well-being.

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Chapter 1:

Introduction

Cultural Identity and Health Behaviors on Asian American Risk Perception of Type 2 Diabetes

The prevalence of type 2 diabetes continues to grow, affecting over 15 million adults in the United States (Mokdad et al., 2001). Globally, there is an epidemic of type 2 diabetes cases and the numbers continue to increase (Zimmet, Alberti, & Shaw, 2002). Parts of the world that do not normally have high prevalence of type 2 diabetes are indicating its rapid growth, in particular, Asia (Amos, McCarty, & Zimmet, 1997). Increased globalization has created a melting pot of lifestyles all over the world; however, in the United States, there is an understood cultural center for these lifestyles (Gaan, 2006). Asian Americans are one of the largest groups of people that immigrated to the United States. The percentage of Asian Americans coming into the United States has increased significantly over the course of the last 50 years (Lopez et al., 2017). With immigration comes not only the physical bodies, but also their culture, lifestyle and habits. Asian cultures tend to adopt healthy behaviors as part of their lifestyle. For example, in Chinese culture, there is a focus on food as a way of health and medicine (McLean, 2015). While Asian countries have a larger population of people with diabetes, the percentages overall are less (Nanditha, Ma, Ramachandran et al., 2016). The way American culture promotes and advertises food and lifestyle may influence lifestyle habits for Asians living in the United States. American health, diet, and activity behaviors can contribute to the development of unhealthy lifestyles and illness (Swierad, Vartainian and King, 2017). American lifestyle and daily habits tend to be low in activity, and high in caloric consumption,

which leads to increased rates of cardiovascular disease, obesity and low metabolism, and in turn to diseases like diabetes. Culture in general can affect the way people eat and exercise (Iwelunmor, Newsome and Airhihenbuwa, 2014). The average American consume more calories than what is recommended in a day, and less than 5% get 30 minutes of exercise daily (Dietary Guidelines for Americans, 2010). It is quite likely that Asian Americans who come to the United States with healthy lifestyle habits are influenced by these American practices. According to a study conducted by Airhihenbuwa (1999), “culture shapes health related values, norms, beliefs, and behaviors through people’s connection to their social and physical environments”. It is possible that the risk perception that Asians have towards developing type 2 diabetes are rooted in poor acquired health behaviors. Health behaviors are based on cultural habits, and the change in these habits could cause a change in health. It is important to explore possible relationships between risk perception of type 2 diabetes with health behavior and the strength of Asian cultural identity. In this study, the relationships between cultural identity, health behaviors and risk perception of type 2 diabetes were explored.

Chapter 2:

Literature Review

Asian Immigration to the United States

Nearly 20 million Americans trace their roots to Asia, from over 20 different countries. Between the years of 2000 and 2015, Asian immigration to the United States grew 72%. Since 1965, Asians account for about 25% of the total immigration population. Asians are projected to become the fastest growing ethnic group, eventually surpassing the Latinx community (Lopez et al., 2017). 66% of immigrants that come to the United States are from Asian countries as per recent census statistics (US Census, 2010).

Asians have a strong presence on United States culture, cultivating and assimilating their own identity. Culture can be largely defined to include food, exercise, beliefs and family roles, all having a significant impact on the risk of type 2 diabetes (Kulkarni, 2004). Previously held cultural beliefs and subsequent lifestyle habits may change as a result to assimilation to the new American lifestyle with new cultural norms. There is cause to show those cultural changes increase risk to individuals for exercise and obesity related diseases (Clough et al., 2013). People may not be aware of those lifestyle changes that are happening or the impact of those changes when they are living in the United States.

Asian lifestyle. When looking at the Asian lifestyle and diet, we can see drastic differences in food and activity. Typically, many traditional Asian diets are overall healthier due to the amount of food, types of food and preparation of food that they have. Another component of diet that is similar among native Asian diets is portion sizes. Often times, Asian portion sizes are generally much smaller and are designed

to make the consumer full but not stuffed. In terms of physical activity, the more walking intensive lifestyle that is present in the countries in Asia leads to a healthier body and a strong heart (Lim and van Dam, 2019). Asian Americans who continue to follow their ethnic country's diet and activity regime while living in the United States may be less vulnerable to developing exercise and obesity related diseases.

American lifestyle. What forms the premise of this argument is that the American lifestyle is typically unhealthy and contributes to the development of type 2 diabetes. Diabetes is an obesity related disorder, meaning that when a person is considered obese, they have a higher chance of developing the disease (Zimmet et al., 2001). Diabetes is a disease that occurs when beta cells do not respond to insulin resistors, and this develops due to weight gain (National Institute of Diabetes and Digestive and Kidney Diseases, 2019). American lifestyle has become increasingly conducive to a high caloric input of foods and beverages, while also promoting a sedentary way of living (Kulkarni, 2004). People who do not fully identify with this aspect of American culture, and do not follow this high caloric, low activity lifestyle, are less vulnerable to developing type 2 diabetes. Asian Americans have the unique dilemma in whether or not to follow a predominantly American diet or continue to follow a far healthier Asian diet and lifestyle.

Diabetes

According to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), type 2 diabetes occurs when a person's glucose level (or blood sugar) is too high. This glucose comes from food a person eats. A hormone made in the pancreas known as insulin is what takes glucose and transports it to the rest of the cells in the body. When a person has type 2 diabetes, their bodies are not producing enough insulin to allow the glucose to be transported throughout the body. The acquired

glucose from the food stays in the bloodstream, and is not dispersed throughout the cells in the body. While diabetes can be a hereditary disease, there are lifestyle factors that contribute to its development. Being overweight, high cholesterol, physically inactive and insulin resistant are ways that a person could develop type 2 diabetes. Some of the symptoms of type 2 diabetes include: increased thirst and urination, increased hunger, feeling tired, blurred vision, numbness or tingling in the feet or hands, sores that do not heal, unexplained weight loss. While there is no definitive treatment for type 2 diabetes, there are ways to manage it through diet, exercise, quitting unhealthy habits (like smoking) and monitoring cholesterol and sugar intake.

Asian Immigration and Health Disparities

Shifts in cultural lifestyle can have implications for people's health. According to the Center for Disease Control, "Health disparities are preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations." The term 'health inequalities' can also be used to describe this concept (Braveman and Gruskin, 2003). The original concept comes from Margaret Whitehead, who noted the variety of health disparities "as equal access to available care for equal need, equal utilization for equal need, equal quality of care for all." This original definition can still be applied to cases even today. This extends to Asian patients and population as they are considered a minority in the United States. If patients and population of Asian origin are not understanding what they could develop, then their risk perception decreases. The cultural norms of behavior and attitudes as outlined above affect risk perceptions towards health.

Risk Perception. Risk perception, is an individual's idea of susceptibility towards a health-related threat (Ferrer and Klein, 2015). In addition, Rimal identifies through Witte's previous work, how the severity of a health-related threat can affect

risk perception. That information could include family history, which would alter risk perception (Chen and Kaphingst, 2011; Slovic, 1987). Risk perception has a connection with optimism in an individual. When patients are more optimistic, they are more likely to perceive a threat to be lower in risk (Fowler & Geers, 2014).

Risk perception can be split into three types: probability, susceptibility, and severity. Probability asks how likely a patient will develop a disease. Susceptibility asks in comparison to others, how likely are they to contract a disease. Lastly, severity asks patients to what extent would a disease harm them (Brewer et al., 2004). Each of these types of risk perception is affected by environmental and behavioral factors, including cultural norms around food, exercise and healthcare communication, language and health literacy.

Cultural Identity. Culture refers to ‘The collective programming of the mind which distinguishes one group or category of people from another’ (Hofstede, 1993). What is unique about this definition is that it considers the mindset of the people it refers to. Culture provides an insight into social context, that in turn could influence behavior (Maxwell, 2002). Cultural identity refers to how each individual identifies with a specific cultural group. The greater amount of clarity that exists with a person’s cultural identity is associated with a greater comprehension of the identity’s social norms, cultural values and behaviors (Usborne and Taylor, 2012). This would in turn mean that when a person has a higher level of cultural identity, they would tend to share similar cultural values with those also belonging to that group (Niu and Zhaomeng, 2018).

Health Behaviors. Diabetes can be developed through an array of unhealthy behaviors, mostly through lack of physical exercise and poor diet. These health behaviors can help predict whether or not a person is at risk to develop type 2 diabetes. A lack in physical activity and poor diet contributes to the risk of developing diabetes.

The health behaviors people choose to exhibit stem from their cultural norms and lifestyle choices. If a culture's lifestyle emphasizes physical wellbeing, then people of that culture, who identify strongly with their culture, are thought to also exhibit that healthy behavior. Healthy behaviors that are associated with the prevention of type 2 diabetes include: exercising for at least 30 minutes daily, avoiding fatty foods, avoiding processed food, avoiding processed sugar, and reduce alcohol intake (Center for Disease Control, 2019). If an individual makes it a point to follow these behaviors, then they are considered to be healthy.

Asian Immigration and the Case of Diabetes

Current diabetes statistics. According to statistics presented by the American Diabetes Association, 34.2 million Americans had type 2 diabetes in 2018, which is about 10.5% of the total population. Of this number, about one third of the people who have type 2 diabetes were undiagnosed. While looking at race specific statistics, 9.2% of Asian Americans are diagnosed with diabetes. Breaking down Asian Americans further, 5.6% of Chinese Americans, 10.4% of Filipino Americans, 12.6% of Indian Americans, and 9.9% of all other Asian Americans are diagnosed with type 2 diabetes. It is also important to note that being Asian American puts one at a higher risk of type 2 diabetes, with their increased assimilation and societal integration.

Asians in the US have a higher risk of developing type 2 diabetes. When immigrants move to a new place, they are affected by a myriad of health disparities and are exposed to a new culture (Osypuk & Avededo - Garcia, 2010). In the diabetes context specifically, the risk perception of developing the disease is rooted in Asian cultural norms. Diabetes may not be on the radar of some Asians, as some research has shown that health perception norms change with assimilation to the US lifestyle (McGee et

al., 1999). Research has discovered that health deteriorates with immigration status in the United States. This is identified with cultural assimilation, as this new Asian group is being constantly exposed to American culture (Guarnaccia and Hausmann - Stabile, 2016). Since diabetes falls under the category of health in immigrants, it can be deduced that perception norms about diabetes would have also changed for Asian immigrants after assimilating into the United States.

Communication Theory of Identity

The Communication Theory of Identity helps to explain the rationale for this thesis. This theory was developed by scholar Michael Hecht and theorizes identity as layered and experienced differently at each of those layers. There are two components of this theory that apply. The first proposition of the theory is that identities are hierarchally ordered meanings attributed to self as an object in a social situation. This part can explain why people feel that they might not develop diabetes due to their identity, as they do not consider them as a high-risk group. The second part is that identities are a source of expectations and motivations. The proposition explains why people feel motivation to behave a certain way when it comes to their health and well-being. Using this theory, I can hypothesize about the relationships between cultural identity and health behaviors.

Theory of Reasoned Action

The Theory of Reasoned Action was first developed in 1975 by Fishbein and Azjen. Overall, this theory suggests that a person's healthy behavior is based on their intention to perform the required activities for the associated behavior. This intent is determined through two ideas: First, if we take a person's attitude towards the behavior, and second, the subjective norms surrounding the person. Figure 2.1

clarifies the theory and how it flows.

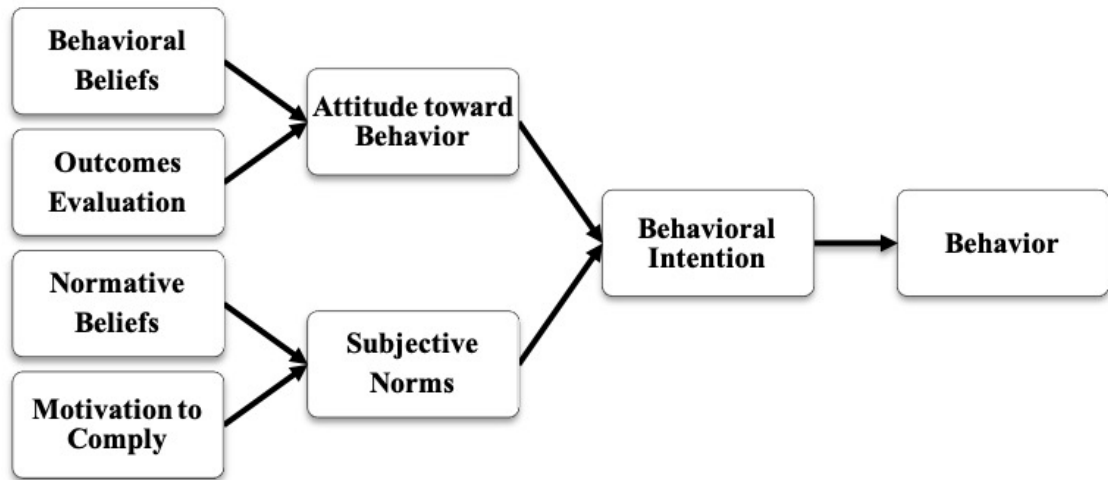


Figure 2.1: Flow in Theory of Reasoned Action.

This theory can be applied to explain why health behaviors stem from risk perception. Following this flow chart, we can place identity under behavioral beliefs, which then leads attitude towards behaviors, which would be the person health behaviors towards type 2 diabetes. Last, this leads to risk perception under the behavior block. In the current study, I am using risk perception as the behavior that can be explained, as I am looking at risk perception as a response.

Through the outlined theories and prior research, I have developed three hypotheses on how each of my variables relate with one another for the present work.

H1: Asian Americans will exhibit a positive relationship between cultural identity and health behavior.

H2: Healthy behaviors are positively related to level of risk perception towards type 2 diabetes in Asian American communities.

H3: The relationship between cultural identity and risk perception will be different for participants that report lower health behavior.

Chapter 3:

Materials and Methods

A quantitative approach was used for this study due to its ability to demonstrate concrete relationships between variables. These variables all have scales associated with them that are highly reliable. A quantitative approach will result in concrete data that can be widely applied to a mass population.

Recruitment

A nonrandom convenience sample was drawn from a population group residing in the U.S. Any adult aged 18 or older who identified with being Asian was eligible to complete the survey. This study uses data from willing participants that identify ethnically or racially as being Asian. This includes those of ethnic origin associated with countries such as China, Japan, Korea, India, Pakistan, or any other countries that are geographically in the region of Asia. Individuals who did not identify with being Asian, or that were less than 18 years of age were not eligible to participate in this study. These participants were found through an anonymous distribution on Facebook, other forms of social media and anonymous email links. A link to the survey was sent out to various cultural organizations in US associated with the Asian countries for them to post it on their respective webpages and group communications. These organization were encouraged to share the link to others who fit the criteria. Participants were made aware of any risks that could potentially deter them from taking this survey.

Sampling

Data from willing participants who had identified as Asians racially and ethnically was used for this study. Such participants included those from countries such as China, Japan, Korea, India, Pakistan or other countries in geographical regions of Asia and South East Asia. Sampled participants were adults over 18 years of age. The questions ask about health topics and family value that only apply to adults; therefore, it would not be appropriate for children. This questionnaire asks the participant background questions pertaining to their age, sex, and income level. For the age question, participants were asked to check off a range in which their age fell under, which consisted of following selection ranges: '18-24', '25-31', '32-38', '39-45', '46-52', '53-59', '60-66', '67+'. Next, the questionnaire asked for the sex of the participant, with options to choose 'Female' or 'Male'. The participant was additionally asked for their income level, with options to choose from including: '\$0 - \$19,999', '\$20,000 - \$39,999', '\$40,000 - \$59,999', '\$60,000 - \$79,999', '\$80,000 - \$99,999', '\$100,000 - \$119,999', and '\$120,000 +'. They were then asked how long they have been living in the United States. Clear instructions were given to the participants on how to choose one choice per question and to fill out the questionnaire to the best of their ability.

Measures

Each of the variables accounted for in this study has a scale of measurement. These measures include content specific questions for the participant on a Likert-style scale or a free response option for participants to note the frequency in which they did a certain activity. Participants were asked to select how they felt about each statement on a scale from "strongly disagree" to "strongly agree" or a "Not at all" to "Very Much" for appropriate questions using a Likert-style scale.

Personal Risk Perception

The first measure used was for the variable of personal risk perception to type 2 diabetes. This scale is called the Risk Perception Survey for Developing Diabetes (RPS- DD). This scale was created by Walker at The University of Michigan, and is used to determine risk perception in type 2 diabetes. A study using the same scale found a reliability of 0.88. The questions include some specifically pertaining to personal risk as well as overall perception of risk for a general population. Statements are all measured on a four item Likert-type scale. Example statements included:

- I think that my personal efforts will help control my risks of getting diabetes
- People who make a good effort to control the risks of getting diabetes are much less likely to get diabetes
- Doing regular exercise and following a diet take a lot of effort
- Regular exercise and diet may prevent diabetes from developing

These questions gauge the levels a participant feels they have a risk of developing diabetes. It also can indicate what people feel are the most important factors in the prevention of developing type 2 diabetes.

Health Behavior

The next variable that was measured is for health behaviors specific to diabetes care. This scale was adapted from the Center for Disease Controls Behavioral Risk Factor Surveillance System. Questions were taken and adapted to fit this study's needs, which means questions from the sections of Overall Health, Exercise, Alcohol Consumption and Diet (fruits and vegetables) were used. Questions included:

- During the past 30 days, how many days per week did you have at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor?
- During the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?
- How often per week did you eat a green leafy or lettuce salad, with or without other vegetables?

These questions using this adapted scale can create data about what participants behaviors are as they relate to health. These numbers can indicate what they value and focus on as part of their overall health, and for this scale in particular, the behaviors directly related to the development of type 2 diabetes.

Cultural Identity

Cultural identity measures were used to determine one's strength and connection with their culture and their association. A modified scale created by Cortes, Rogler and Malgady (1994) was used to determine a participant's cultural identity strength as outlined in the hypotheses. A study using the same scale found a Cronbach's alpha of 0.78 (Mezzich et al., 2009). The questions were all scored on a 4-item Likert style scale. These questions generally asked about lifestyle behaviors and values and its relation to Asian ethnicity. Questions included:

- How proud are you of being (Your Asian Ethnicity)?
- How much do you like to eat (Your Asian Ethnicity) food?
- How much are mainstream American values a part of your life?

These questions, as part of the scale for cultural identity, can indicate how strong the participant feels connected to their Asian culture. The statements in this scale all pertain to lifestyle values and how in touch their Asian culture makes them feel about those values. These questions also ask about diet and its relation to Asian culture, which is appropriate for a study that focuses on how various diets affects the development of type two diabetes.

Analysis Plan

The main focus of this study was to determine the relationship between cultural identity, health behaviors, risk perceptions related to type 2 diabetes among Asian populations in US. To do this, various statistical tests were conducted. First, descriptive statistics were run for each of the sets of data, and means were computed for each variable. A reliability statistical test was conducted to determine the Cronbach's alpha for the different measures. For H1, a correlation test was done to determine the relationship between cultural identity and health behaviors. For H2, a correlation test was conducted to determine the relationship between health behaviors and risk perception towards type 2 diabetes in Asian populations. For H3, an Analysis of Variations (ANOVA) was conducted in order to determine the relationship between cultural identity and risk perception moderated by health behaviors. In addition to these main tests, I conducted demographic testing to find relationships between my outlined variables and sociodemographic components, including sex, age group, and socioeconomic status.

Chapter 4:

Results

Primary Results

Ninety- nine participants completed the survey, with 34 (34.3%) identifying as male and 63 (62.6%) identifying as female. Three participants did not specify their sex (3.0%). Age groups in this survey consisted of 13.1%, 18-24; 5.1%, 25-31; 8.1%, 32-38; 21.2%, 39-45; 41.4%, 46-52; 8.1%, 53-59; 1.0%, 60-66; and 2.0%, 67+. Majority of the participants income were above \$100,000, accounting for 68.7% of the sample. Reliability analysis Cronbach's alpha was conducted for each of the variables. For the variable of cultural identity, $\alpha = .76$; for the variable health behaviors over a month, $\alpha = .46$; for the variable of health behaviors over a week, $\alpha = .51$; for the variable of risk perception, $\alpha = .04$.

To determine if there is a relationship between variables, a Pearson correlation was performed. The main relationships that I was focusing on were the ones outlined in the hypotheses: H1 and H2. H1 hypothesized the relationship between cultural identity (V2) and health behaviors (V3, V4). H2 hypothesized the relationship between health behaviors (V3, V4) and risk perception (V1). Table 1 displays the results of multiple Pearson correlations calculated with all the variables. The main focus is on the correlations that are a result of the comparisons outlined by the hypotheses.

Table 4.1: *Correlation amongst study variables*

	V1	V2	V3	V4
V1:Risk Perception	–			
V2:Cultural Identity	0.028	–		
V3:Health Behaviors (Month)	-0.074	-0.107	–	
V4:Health Behaviors (Week)	0.087	-0.068	0.188	–
<i>*p < .05 **p < .01</i>				

For the correlations that are significant indicated in Table 1, note that when $p < .05$ or $p < .01$, the variables have a significant relationship. Due to the nature of the scale for the variable of health behavior, I had to split the data, as each question corresponded to a different time scale. Some of the questions asked for a number value corresponding to a time period of a month, while others asked for a number value corresponding to a time period of a week. For the relationship between V2 and V3, $N(95) = -0.107$, $p = 0.30$, meaning there was not a significant correlation between cultural identity and health behaviors for a month's time. For V2 and V4, $N(96) = -0.068$, $p = 0.51$, meaning there was not a significant correlation between cultural identity and health behaviors for a week's time. For the relationship between V1 and V3, $N(97) = -0.074$, $p = 0.47$, meaning there was not a significant correlation between risk perception and health behaviors for a month's time. For the relationship between V1 and V4, $N(98) = 0.087$, $p = 0.39$, meaning there was not a significant correlation between risk perception and health behaviors for a week's time. None of the correlations are significant or strong, meaning there is no close relationship.

To test H3, a one-way between subject's ANOVA was conducted to compare the effect of cultural identity on risk perception moderated by health behaviors. There was not a significant effect of health behaviors on cultural identity at the $p < 0.05$ level [$F(15, 37) = 1.646$, $p = 0.108$], and not a significant effect of health behaviors on risk perception at the $p < 0.05$ level [$F(15, 38) = 1.673$, $p = 0.100$]. Table 2 displays

the results of the ANOVA analysis of data.

Table 4.2: *ANOVA analysis of data*

		Sum of Squares	df	Mean Square	F	Sig.
Cultural Identity	Between Groups	13.291	15	0.886	1.646	0.108
	Within Groups	19.917	37	0.538		
	Total	33.208	52			
Risk Perception	Between Groups	2.044	15	0.136	1.673	0.100
	Within Groups	3.095	38	0.081		
	Total	5.139	53			

Taken together, these results demonstrate that health behaviors by Asian participants do not have an effect on correlation to either cultural identity or risk perception. This would mean that the level of health behaviors that are exhibited do not affect the strength of cultural identity or the risk perception level in the sample population.

Post Hoc Results

Since none of the research hypotheses were supported, post-hoc tests were conducted to determine whether sociodemographic variables influenced the study variables. An independent samples t-test was conducted to determine if there were significant differences in the variables between sex. The variable of health behavior was split due to the scale for two sets of questions. Table 3 displays the result for the conducted independent t-test.

Table 4.3: *Independent Samples t-test results for sex*

	N	t	p	M (Male)	SD (Male)	M (Female)	SD (Female)
V1:Risk	96.00	0.93	.12	2.59	0.26	2.54	0.31
V2:Cult	94.00	1.15	.66	1.41	0.91	1.64	0.97
V3:HlthMonth	94.00	0.22	.85	9.00	5.55	8.72	6.13
V4:HlthWeek	95.00	0.75	.45	5.12	3.07	5.71	3.91

Through the independent t- test, there was no significant difference between sex, $t(96) = 0.93$, $p = 0.12$, with men ($M = 2.59$, $SD = 0.26$) and women ($M = 2.54$, $SD = 0.31$), for the variable of risk perception. For the variable of cultural identity, there is not a significant difference between sex, $t(94) = -1.15$, $p = 0.66$, with men ($M = 1.41$, $SD = 0.91$) and women ($M = 1.64$, $SD = 0.97$). For the variable of health behaviors scaled for a month, there is not a significant difference between sex, $t(94) = 0.22$, $p = 0.85$, with men ($M = 9.00$, $SD = 5.55$) and women ($M = 8.72$, $SD = 6.13$). For the variable of health behaviors scaled for a week, there is not a significant difference between sex, $t(94) = -0.75$, $p = 0.45$, with men ($M = 5.12$, $SD = 3.07$) and women ($M = 5.71$, $SD = 3.91$).

The next demographic variable accounted for was age. As there were multiple age ranges for participants to select from, an ANOVA study was performed to test for significant differences. There was a significant effect of age on cultural identity at the $p < .05$ level [$F(7, 96) = 3.132$, $p = 0.005$] and a significant effect of age on risk perception at the $p < .05$ level [$F(7, 98) = 2.170$, $p = 0.044$]. There was not a significant effect of age on health behaviors, for both a month's time interval and a week's time at the $p < 0.05$ level [$F(7, 96) = 29.643$, $p = 0.188$] and [$F(7, 97) = 15.470$, $p = 0.192$] respectively. Table 4 displays the results of the ANOVA analysis of age.

Table 4.4: ANOVA for Age

		Sum of Squares	df	Mean Square	F	Sig.
Cultural Identity	Between Groups	13.188	7	1.884	3.132	0.005
	Within Groups	53.533	89	0.601		
	Total	66.722	96			
Risk Perception	Between Groups	1.152	7	0.165	2.170	0.044
	Within Groups	6.902	91	0.076		
	Total	8.055	98			
Health Behaviors Month	Between Groups	207.500	7	29.643	1.470	0.188
	Within Groups	1794.500	89	20.163		
	Total	2002.000	96			
Health Behaviors Week	Between Groups	108.292	7	15.470	1.459	0.192
	Within Groups	954.188	90	10.602		
	Total	1062.480	97			

Post hoc tests were conducted to determine exactly which groups had a significant difference; however, this cannot be reported as there are less than two cases in which there was a significant difference between groups. What we can determine is that age has an impact on the strength of cultural identity, and the level of risk perception towards type 2 diabetes.

For the last demographic of income, an ANOVA study was also conducted to determine whether there are significant differences between the variables and groups of income levels. There was not a significant effect of income on cultural identity at the $p < .05$ level [$F(5, 90) = 0.814, p = 0.543$], and for income on risk perception at the $p < .05$ level [$F(5, 92) = 0.296, p = 0.914$]. Additionally, there was not a significant effect of income on health behaviors, for both a month's time interval and a week's time at the $p < .05$ level [$F(5, 91) = 2.072, p = 0.077$] and [$F(5, 91) = 2.210, p = 0.061$] respectively. Table 5 shows the results for the ANOVA analysis for income.

Table 4.5: *ANOVA for Income*

		Sum of Squares	df	Mean Square	F	Sig.
Cultural Identity	Between Groups	2.970	5	0.594	0.814	0.543
	Within Groups	3.263	85	0.730		
	Total	64.989	90			
Risk Perception	Between Groups	0.122	5	0.024	0.296	0.914
	Within Groups	7.164	87	0.082		
	Total	7.286	92			
Health Behaviors Month	Between Groups	206.512	5	41.302	2.072	0.077
	Within Groups	1714.248	86	19.933		
	Total	1920.760	91			
Health Behaviors Week	Between Groups	118.214	5	23.643	2.210	0.061
	Within Groups	920.043	86	10.698		
	Total	1038.257	91			

Post hoc tests were not conducted for this ANOVA analysis as there were not significant results. What this tells us is that there was not a significant difference based on income for each of the variables accounted for in this study.

Chapter 5:

Discussion

The goal of this study was to determine relationships for cultural identity, health behaviors and risk perception for type 2 diabetes among Asian Americans in US. Accordingly, participants answered a questionnaire to determine their levels for each of the variables. There were components in this study that could be improved to better answer the questions asked. In addition, a restructuring of a hypothesis could better ask and obtain the data in this study.

Theoretical Implications

In this study, the theoretical implications could not be clearly connected. This could be due to the reliability of the measures and the lack of coherence between constructs. In addition, theories in this study could have been improved to better fit the variables of study. Future directions for this study can explore a variety of options in how to improve the outcomes of the analysis.

Hypothesis 1 predicted the relationship between cultural identity and health behaviors, noting that as the levels of cultural identity increased, healthy behavior habits would increase as well. A correlation analysis was used to determine whether this hypothesis could be supported. Results obtained and presented earlier indicate that there is no significant correlation between two variables of cultural identity and health behaviors based on present data. This is inconsistent with the research in the connections between strength of cultural identity and the behaviors associated with health. From this study, it seems that there is no connection between the two variables, whereas previous studies indicate a relationship. What this current study

demonstrates is that how in touch a person is with their ethnic culture has no effect to whether they practice healthy behaviors including eating fruits and vegetables, exercising and limiting alcoholic beverages, which are all indicators on whether a person could develop type 2 diabetes. From prior research, healthy behaviors were associated with Asian cultures, therefore the hypothesis created a relationship between the variables of cultural identity and health behaviors (Kalra et al., 2004). Current data and results may indicate that such cultural correlations could potentially have changed in the past decade. Prior research has also shown that gender can play a role in how these health behaviors are influenced by cultural identity (Patel, Phillips-Caeser & Boutin-Foster, 2011). Traditional gender roles are often still utilized in Asian households, where females are cooking and serving what their husbands prefer. Females are also less likely to modify their cooking if it is them who has a health issue, whereas if it's the male in the household who requires the modification, it is expected that changes are made (Astin, Atkin & Darr, 2008). This could explain a possible difference between sexes in health behaviors noticed in the present study. However, as will be discussed in further detail in the following section, there was not a significant difference between sex.

Hypothesis 2 predicted that as healthy behaviors increased (indicative of good behavior), risk perception towards type 2 diabetes also increased (awareness of the risk). A correlation analysis was also conducted to determine the relationship between the variables. From the analysis of the data for these variables, there was, however, not a significant correlation found. This is abnormal from the prior research, as it was indicated that those who engaged with healthy behaviors, especially the ones associated with type 2 diabetes, would be more cognizant of their choices and therefore have a higher risk perception. What this indicates is that those who engaged in healthy behaviors may not always be cognizant of risks associated with a certain

disease. They may be engaging in these healthy behaviors for other reasons, and not necessarily for the reason of reducing risk of developing type 2 diabetes. In this same idea, those who had a higher risk perception may not have exhibited healthy behaviors. From prior research, there has been indications that age plays a role in how frequent people engage in healthy behaviors in its relation to type 2 diabetes (de Groot & Wessel, 2014). Those in different age groups may have various restrictions on the food that they eat, the lifestyle they can live, and the amount of exercise that they can do (Hill, Edmonds & Hampson, 2017). For this reason, the hypothesis could not indicate whether this relationship predicted is the case.

Hypothesis 3 looked at how cultural identity and risk perception were moderated by health behaviors. For this analysis, a one-way analysis of variation (ANOVA) was conducted to see the effect that health behaviors had on the relationship between cultural identity and risk perception towards type 2 diabetes. From the data collected and the test runs, present data and analysis results indicate that there is no significant effect of health behaviors on cultural identity and risk perception. The implications of these results could be due to similar reasons as the previous hypotheses: healthy behaviors are not necessarily indicative of either cultural identity or risk perceptions towards type 2 diabetes. As revealed in the previous hypotheses, whether or not a person exhibits healthy behaviors does not have a defining relationship with their strength of cultural identity or their level of risk perception for type 2 diabetes. Earlier research has shown that there are significant differences in risk perception of type 2 diabetes based on income. In a study conducted by Walker et al, they found that income played a significant role in how a person perceives their risk to type 2 diabetes. As income was a demographic that was measured in this study, it can be used for further analysis to determine if that relationship exists in this study for the variable of risk perception, or for any of the other variables in this study.

Post Hoc Test Implications

Unfortunately, the tests conducted for each hypothesis did not show any significance in results and correlation to considered variables, therefore, a post hoc test was performed using the demographic variables. Based on prior research, these demographic variables of age, sex and income were collected as they are factors that could greatly influence responses to this survey. Although these demographic variables were not originally part of the goals of the study, I sought to determine whether any of the demographic data I collected demonstrated relationships between the variables. In order to test this, I conducted an independent samples t-test to see if there were any significant differences between sexes for each of the variables. Additionally, I conducted two ANOVA tests to see if there were differences in age and income for each of the variables. These tests were chosen due to prior research indicating that there have been significant differences for those variables. I decided to conduct each test for the variables in case there were significant findings for any combination of variables for the data collected in present study.

The first post hoc test that I ran was to determine differences in any of the test variables for the demographic variable of sex. As mentioned earlier, an independent samples t – test was conducted to determine this. From the results in the previous section, there were no significant difference found between sexes as identified by participants for any of the variables. Although prior observations indicated that there were differences in sex for health behaviors, the tests for this study showed that not to be the case. What could be a cause for this inconsistency is the difficulty with self-reported data. Social desirability bias can happen with self-reported data structured in the way that the questions for the variable of health behaviors was presented. Participants may feel pressured to report numbers that are higher or lower than what is actually true in order to feel that they are conforming to the norm (Raza et al.,

2017). This could explain why there was no significant difference in health behaviors between sexes. Participants could feel inclined to say that they are healthier than they actually are, and both sexes had similar inclination.

The next post hoc test run was an ANOVA for differences in variables between age groups. This test was mostly done to see differences in health behaviors between ages as prior observation has indicated that there exists a relationship. Through this analysis, I discovered that there is actually a significant difference in age for cultural identity and risk perception, but not for health behaviors. This difference can be explained through a bit of immigration history. In 1965, the Immigration and Nationalization Act was passed, allowing for Asians to freely immigrate into the United States (Maker, Mittal & Rastogi, 2005). However, Asian cultures value ties with family, so those who immigrated to the United States sought to maintain those ties with the family they are leaving behind (Segal, 1991). This older generation has a stronger cultural identity than the younger one, explaining the difference in cultural identity in regard to age. The younger group in the present study could also be second generation Asian Americans and children of earlier immigrants. Further, globalization has led to American culture, diet and practices influence into Asian countries than it was several decades ago. For example, fast food giant McDonalds had its first store in 1996 in India, and there are currently 300 stores. First McDonald's in China started in 1992, and now there are nearly 2,300. Traditional cultural identity can also be influenced by increased and faster access communication, shrinking world, social media, instant access to world-wide events, globalization, and higher level of travel. This coupled with increase in immigration of students, and younger workforce could also contribute to the level of difference in cultural identity with age.

For the variable of risk perception, prior research has indicated that age also plays a factor in those levels. Younger age is significantly positively related to a

higher risk perception (Chopra & Chopra, 2016). This is supported by the ANOVA study showing significant differences between age groups for risk perception. Overall this demonstrates that the age of a person can affect how close their ties are with their Asian culture, as well as affect their perceived risk towards developing type 2 diabetes.

The last post hoc test run was an ANOVA study, targeting income as a scope for significant differences in each of the variables used in the study. From prior research, I had found that income plays a significant role in the differences in risk perception for type two diabetes. There has been many studies determining how income status affects health and its related subsections. The amount of income that a family has affects the family's lifestyle overall (United States Department of Health and Human Services, 2019). The food that a person has access to depends on the amount of money they are able to spend (U.S. Department of Agriculture, Food and Nutrition Service, 2008). Organic and healthier options tend to cost more than fast and unhealthy foods, making the better options more accessible for those in a higher income group. Exercise options also become more accessible for higher income people (Yichen, 2015). Gym and fitness classes become an option for higher income people, whereas those who cannot afford them do not have access to these resources. In addition, some who may be on the lower end of the income scale may be forced to work multiple jobs to make ends meet, thus limiting the amount of time they can spend focusing on fostering a healthier diet and exercising regularly. The ANOVA study was conducted due to the indication that income could pose significant differences in the test variables in this study. What I found was, although there was an inclination for income to affect multiple of the test variables, there were no significant differences in income for the test variables in this study. When I looked closer into the study, I noticed that for the variables of health behaviors, the p value was very close to being significant.

What that indicates is that there could have been a random error due to chance that skewed the results. Further, raw collected data indicated that more than two-third of respondents had an annual income greater than \$100K, which could also be a factor in the present statistical analysis.

Limitations and Future Directions

This study posed limitations, mostly through the channel of data collection. The first limitation is how the survey had to be conducted. All of these questions asked about a participant's feelings towards various statements and how it applies to their life. In cases like this, these participants may feel that they fall in between categories, and had to go one side or the other. This can skew results to go in different directions without a clear trend. This can also make it more difficult to make generalized claims about study populations. The next limitation has a connection with Social Desirability Bias. As mentioned previously, self-reported data could pave way to participants reporting numbers that are different than what they actually are. This can also provide data that is inconsistent to prior research. In future studies, it is imperative to keep this in mind, and perhaps create a scale that can encompass more opinions.

In regard to this study, the results found do not seem to necessarily answer the original questions and hypotheses. There were some unexpected observations from demographic variables in relation to the test variables that are important to note. In order to further answer the questions originally presented, one must take a different approach. To help answer those questions, a more personal study might need to be conducted. A qualitative approach could provide a rational for an in-depth study, which might be necessary to answer the questions presented. By interviewing with participants about their specific experiences related to cultural identity, health be-

haviors and risk perception, there could be good potential for better relationships to be established. The other avenue that could be taken to expand upon this study would be to look further into demographic variables. While the three demographic variables in this particular study did give valuable insight, we could consider further into those variables as well as others to determine if there are relationships. Possible demographic variables that we could consider for relationships between test variables could include education level, sexual orientation or locations within the United States. This study into demographic variables effect on Asian American viewpoints is not one that is greatly studied, although there have been several looking at those variables for Latino and African American communities. The Asian community is one of the fastest growing populations to develop type 2 diabetes, and further research should be done to help inform these populations on their risk and how they are affected.

In the current rationale of the study, immigration and health disparities were discussed in detail. However, when creating the hypotheses, these constructs were not used. In future renditions of this study, a stronger connection could be formed, tying in these constructs with the theory used. For example, the idea of immigration can be applied towards a hypothesis by utilizing time residing in the United States. This is because immigrants face a myriad of health issues when migrating to a new country. Some of those factors include cultural and linguistic barriers, living conditions, working conditions, community factors, and governmental conditions (World Health Organization, 2017). These factors could all force migrants to be excluded from accessing treatment, health information or primary care. This study did not take into consideration immigration and the health disparities that are associated with it. The current design of this study falls a little short in these areas and does not directly fall in line with the principles of the theories used. For future studies, a hypothesis that includes the factor of immigration and the disparities associated with migrations

should be included. This connection is crucial to the understanding of Asian American perspectives, as they could differ based on their specific migration experience. In addition, risk perception was measured in the study, but not to the extent of which was needed. Future studies that are measuring risk perception should have a scale that is more widely applicable. It should include question that incorporate all parts of the rationale, including immigration, health disparities, behaviors and culture. This would give us a more accurate measure of risk as it pertains to this study. In future studies, it would be imperative to address all constructs, measure all the constructs, and how they relate to the theories used. The lack of coherence in this study poses as a limitation, as many of the issues discussed in the rationale are not directly measured in the study.

Another component of this study that could be improved is the construction of hypothesis 3. Currently, this hypothesis is based on the Theory of Reasoned Action, and has each variable associated with a component of the theory. Currently, the hypothesis attributes identity under behavioral beliefs, health behaviors under attitude towards behaviors, and risk perception under the behavior. A new proposed hypothesis would rearrange the relationship to better fit a related model. The Theory of Planned Behavior would be better suited to determine a theoretical relationship between the variables of health behaviors, cultural identity, and risk perception. This theory can help explain behavior which the levels of control is less. The components that are part of this theory include *perceived behavioral control*, *control beliefs* and *behavior*. In this theory, control beliefs will refer to cultural identity, as it is a factor that could impede behavior. Perceived behavioral control refers to variable of risk perception, as it is the extent to which the behavior is enacted. Lastly, behavior will refer to health behaviors, as it is the behavior that is being exhibited. The model using these components flow as follows: Control Beliefs → Perceived Behavioral Con-

trol → Behavior. When using this model, a new hypothesis 3 can be formed, based on the better fitting model of the Theory of Planned Behavior. A new proposed H3 would be:

H3 (New): The relationship between cultural identity and health behaviors will be moderated by the risk perception towards type 2 diabetes.

This new hypothesis would be tested using a regression analysis, to see if the relationship between cultural identity and health behaviors depends on the third variable of risk perception. This hypothesis would be better in truly finding out the information that would answer the questions at hand.

Conclusion

Studies about Asian American health are only starting to be explored. We know a lot of information about various diseases, and how they affect minority populations in the United States, however, many of these studies focus primarily on Latino and African American communities. As Asian are a fast-growing immigrant population in the United States, it is crucial to understand their narrative and how they are affected by these diseases. Several aspects of health communication could differ for those in Asian minority groups, and in order to grant better access to health care for all, it is important to understand how these minority groups think and understand new and established diseases. The constant fear and evolution of new diseases can create opportunities for more research on how they can affect every single person, based on their unique narrative, which in turn can narrow health disparities for all. Further, global factors are now increasingly influencing health and wellness and provides avenues for new opportunities to understand and provide effective solutions. Factors related to globalization, social media, instant communication, and access across both

sides of the globe can also be considered in the future studies that impact health behavior and perspectives, and are becoming increasingly important in the current world, health, economic conditions, and global demographics.

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Appendix: Survey

Q1.1

Study Description

You are invited to participate in a research study conducted at Wake Forest University. This study aims to determine how risk perception of type 2 diabetes is affected by various components of health communication for Asian Americans. You will be asked to answer a series of questions that pertain to your health behavior, cultural identity and risk perceptions towards type 2 diabetes. In addition, demographic questions will be asked. You do not have to answer any questions you do not want to answer.

Participation Description

Your participation in this research is completely voluntary. If you do not wish to participate, please close your browser window. You may discontinue your participation at any time without penalty by closing your browser window. Any responses entered to that point will be deleted. Completing the survey should take no longer than 15 minutes.

Risks and Benefits

Some of the questions are personal and might cause discomfort. While we cannot promise you any direct benefit from your participation in this study, we hope it will provide you with more information on how health behaviors and cultural identity play a role in risk perception of type 2 diabetes.

Confidentiality

The researchers have taken the following precautions to protect the confidentiality of your information. The survey does not ask for any information that would identify you as an individual. In the event of any publication or presentation resulting from the research, no personally identifiable information

will be shared because your identity is not linked to your responses. Please note that while in transmission on the internet, your responses may not be entirely secure. When completing the survey, please choose a location with adequate privacy and internet security. We encourage you to print or save a copy of this page for your records or future reference.

Contact

If you have questions about this survey, please contact Laya Mohan, (336) 758-5405. If you have questions about your rights as a research subject, contact the Office of Research and Sponsored Programs, 336-758-5888, irb@wfu.edu. Please reference IRB00023729 in your message.

Agreement

By clicking "I agree", you indicate that you are at least 18 years old and that you agree to participate in this research project. You will advance to the survey. If you do not wish to participate, please close your browser window.

Q2.1 Select the sex you best identify with

- Male (1)
- Female (2)

Q2.2 What age range do you fall under during the time you are taking this survey?

- 18-24 (1)
- 25-31 (2)
- 32-38 (3)
- 39-45 (4)
- 46-52 (5)
- 53-59 (6)
- 60-66 (7)
- 67+ (8)

Q2.3 What is your total household income?

- \$0 - \$19,999 (1)
- \$20,000 - \$39,999 (2)
- \$40,000 - \$59,999 (3)
- \$60,000 - \$79,999 (4)
- \$80,000 - \$99,999 (5)
- \$100,000 - \$119,999 (6)
- \$120,000 + (7)

Q2.4 How long have you been living in the United States?

Years

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

Years living in the United States ()	
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Q2.5 Would you say that in general, your health is:

	<p>1 (1)</p> <p>2 (2)</p> <p>3 (3)</p> <p>4 (4)</p> <p>5 (5)</p>
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Q3.1 Please select the option that best expresses your opinion

	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)
<input checked="" type="checkbox"/> I feel that I have little control over risks to my health (1)	●	●	●	●
<input checked="" type="checkbox"/> If I am going to get diabetes, there is not much I can do about it (2)	●	●	●	●
<input checked="" type="checkbox"/> I think that my personal efforts will help control my risks of getting diabetes (3)	●	●	●	●
<input checked="" type="checkbox"/> People who make a good effort to control the risks of getting diabetes are much less likely to get diabetes (4)	●	●	●	●
<input checked="" type="checkbox"/> Compared to other people of my same age, I am less likely than they are to get diabetes (5)	●	●	●	●
<input checked="" type="checkbox"/> Compared to other people of my same age, I am less likely than they are to get a serious disease (6)	●	●	●	●

Q4.1 During the last 30 days, how many days did you:

	Days you did the statement (1)
Have at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor? (1)	
What is the largest number of drinks you had on any occasion? (2)	
Other than your regular job, how often did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise? (3)	
How many times per month did you take part in physical activity (4)	

Q4.2 How many times per WEEK did you do the following?

	Days you did the statement
How often did you eat fruit per week? (1)	
How often did you eat a green leafy or lettuce salad, with or without other vegetables? (2)	
How often did you eat any kind of fried potatoes, including French fries, home fries, or hash browns? (3)	
Not including lettuce salads and potatoes, how often did you eat other vegetables? (4)	

Q5.1 The questions that follow refer to different ways to experience life in the United States. Please, read them carefully and check the box that best describes your feelings

	Not at all (1)	A little (2)	Quite a Bit (3)	Very Much (4)
How much are (your Asian ethnicity) values part of your life? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How important is it to you to celebrate holidays in the (your Asian ethnicity) way? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How important is it to you to raise your children with (your Asian ethnicity) values? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How comfortable would you be in a group of (your Asian ethnicity) who do not speak English? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How proud are you of being (your Asian ethnicity) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much do you enjoy speaking (your Asian ethnic language)? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much do you enjoy (your Asian ethnicity) TV programs? (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much do you like to eat (your Asian ethnicity) food? (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5.2 The questions that follow refer to different ways to experience life in the United States. Please, read them carefully and check the box that best describes your feelings

	Not at all (1)	A little (2)	Quite a bit (3)	Very much (4)
Do you think (your Asian ethnicity) are kind and generous? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How important would it be to you for your children to have (your Asian ethnicity) friends? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How important is it to you to celebrate holidays in the mainstream American way? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much are mainstream American values a part of your life? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How comfortable would you be in a group of mainstream Americans who don't speak (your Asian ethnic language)? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How important is it to you to raise your children with mainstream American values? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How proud are you of a mainstream American identity? (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you think mainstream Americans are kind and generous? (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much do you enjoy mainstream American TV programs? (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much do you enjoy speaking English? (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much do you like to eat mainstream American food? (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How important would it be to you for your children to have mainstream American friends? (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Laya Mohan

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Accomplished Master's student (graduation date: May 2020) with proven achievements in leadership, organization, management skills, and interpersonal skills.

Key Skills: Effective Communicator (oral and written), Team Player, Analytical Problem Solver, Creative, Planner, Motivated, Dependable, Quick Learner, Organized, Interpersonal, Collaborative

Technical Skills: Microsoft Office Suite; LATEX; SQL; CITI Certified; Hootsuite Certified; Adobe Photoshop; Social Media (Facebook, Twitter, Instagram, Snapchat, LinkedIn); Google Docs; SPSS; WIX

EDUCATION

Wake Forest University, Winston Salem, North Carolina

- **Master of Arts in Communication, Focus on Health Communication and Technology. GPA: 3.8** [May 2020]
- **Bachelor of Arts in Communication with a minor in Biology** [May 2017]

Relevant Coursework: Theory Research Design in Communication Science, Empirical Research Methods, Patient Provider Communication, Family Communication and Health, Communication, Tech and Entrepreneurship, Managing Digital DNA, Communication and Technology

PROFESSIONAL EXPERIENCE

Teaching Assistant

August 2018- Present

Wake Forest University, Winston Salem, NC

- Teaching Assistant for the following courses:
 - **Public Speaking**, an introductory undergraduate communications course (Fall 2018, Spring 2019)
 - **Empirical Research Methods**, a mid-level undergraduate communications course (Fall 2019)
 - **Persuasion**, an upper level undergraduate communications course (Spring 2020)
 - **Technologies of Communication**, a mid-level undergraduate communications course (Spring 2020).
- Created lesson plans and taught skills for public speaking, data analysis and collection, persuasion methods, and scientific methods to undergraduate students
- Graded student assignments throughout the semester and provide feedback for improvement
- Built strong rapport with students

Marketing and Communications Intern**August 2019 – January 2020****CV Remote Solutions, Greensboro, NC**

- Created various marketing deliverables for conferences and other general use
- Designed informational posters for patients on specific medical issues
- Developed website for company, providing information and consultation services
- Analyzed data from medical studies to represent results in a cohesive, easy to understand poster
- Actively administered social media accounts (Twitter, LinkedIn) for the company

Associate Director**August 2017- August 2018****Georgetown Learning Centers, Mclean, VA**

- Tutored Middle and High School students in public and private schools in Fairfax Country, Arlington County and D.C.
- Created and maintained professional relationships with clients (students and parents)
- Taught courses AP Calculus AB/BC, AP Physics, AP Chemistry and AP Biology
- Prepared students for a variety of standardized testing, including SAT, ACT, SSAT, PSAT and HSPT
- Developed social media target strategy (Twitter, Facebook, Instagram) for the company

LEADERSHIP EXPERIENCE

Marketing and Communications Director**January 2019-December 2019****India Association of the Triad, Greensboro, NC**

- Developed and designed advertisements and announcements for community events
- Managed, designed, and maintained website and social media accounts (Facebook, Instagram) for the organization
- Assisted in planning process for community events and actively participating in the event itself
- Communicated with outside organizations for partnerships
- Assisted in carrying out financial transactions for the organization

President, Social Chair of South Asian Student Association**May 2015- May 2017****Wake Forest University, Winston Salem, NC**

- Maintained an organization that seeks to share South Asian culture with students on the Wake Forest University campus
- Attended various leadership conferences, trainings and seminars

- Managed an organizational budget of over \$35,000, including creating budgeting reports, financial report and grant proposals
- Collaborate with students, staff, and administrators to plan and manage events on campus commemorating important holidays such as Holi, Diwali and Eid that had 400+ attendees each
- Worked closely with the Office of Student Engagement to safely and correctly manage events on campus

Senator, Student Government

January 2017- May 2017

Wake Forest University, Winston Salem, NC

- Worked closely with Student Government officials to pass legislature
- Part of a Judiciary Committee, responsible for reading the language used in the bills passed
- Voting member of the senate for the establishment of new organizations
- Voting member of the senate for the implementation of campus wide policies

AWARDS AND ACHIEVEMENTS

Successful defense of Master's level thesis	<i>May 2020</i>
Girl Scout Gold, Silver and Bronze Award	<i>June 2014</i>
Presidential Leadership Award	<i>May 2014</i>
Service Learning Diploma	<i>May 2014</i>
Bharatnatyam Arangetram (Graduation of Indian classical dance)	<i>September 2013</i>