

2011-01-01

Gender Differences In Food Habits, Beliefs, And Fast Food Consumption Among A Predominantly Hispanic College Student Population

Alma Xochitl Ortega Gomez

University of Texas at El Paso, axortega@miners.utep.edu

Follow this and additional works at: https://digitalcommons.utep.edu/open_etd



Part of the [Public Health Education and Promotion Commons](#)

Recommended Citation

Ortega Gomez, Alma Xochitl, "Gender Differences In Food Habits, Beliefs, And Fast Food Consumption Among A Predominantly Hispanic College Student Population" (2011). *Open Access Theses & Dissertations*. 2353.

https://digitalcommons.utep.edu/open_etd/2353

This is brought to you for free and open access by DigitalCommons@UTEP. It has been accepted for inclusion in Open Access Theses & Dissertations by an authorized administrator of DigitalCommons@UTEP. For more information, please contact lweber@utep.edu.

GENDER DIFFERENCES IN FOOD HABITS, BELIEFS, AND FAST FOOD
CONSUMPTION AMONG A PREDOMINANTLY HISPANIC COLLEGE
STUDENT POPULATION

ALMA XOCHITL ORTEGA GOMEZ

Department of Public Health Sciences

APPROVED:

Maria Duarte-Gardea, Ph.D., R.D., Chair

Mary-Margaret Weigel, Ph.D.

Christina Sobin, Ph.D.

Benjamin C. Flores, Ph.D.
Acting Dean of the Graduate School

Copyright ©

by

Alma Xochitl Ortega Gomez

2011

Dedication

First of all I would like to dedicate my thesis to God for giving me the strength to complete it successfully. Secondly, I dedicate this document to my family and friends for their unconditional support in all times. And finally, but not less important, I want to dedicate my thesis project to my thesis mentors, Dr. Maria Duarte-Gardea, Dr. Mary-Margaret Weigel and Dr. Christina Sobin, for being a role model and for giving me the feedback and guidance I needed.

Special thanks to the professors and students who voluntarily agreed to participate in this study. Without you, none of this could have been possible. I also thank Dr. Julia Bader for providing statistical expertise and for helping me with the data analysis of this study.

GENDER DIFFERENCES IN FOOD HABITS, BELIEFS, AND FAST FOOD
CONSUMPTION AMONG A PREDOMINANTLY HISPANIC COLLEGE
STUDENTS POPULATION

by

ALMA XOCHITL ORTEGA GOMEZ M.D.

THESIS

Presented to the Faculty of the Graduate School of

The University of Texas at El Paso

in Partial Fulfillment

of the Requirements

for the Degree of

MASTER OF PUBLIC HEALTH

Department of Public Health Sciences

THE UNIVERSITY OF TEXAS AT EL PASO

December 2011

Abstract

Fast food consumption in the United States (U.S.) has been increasing steadily during the last decades. This trend has been linked to the increased prevalence of overweight and obesity among the population (Barnard, 2010; Currie, Della Vigna, Moretti & Pathania, 2009). Several sociodemographic characteristics that have been associated with the likelihood of frequent fast food consumption include income, ethnicity, gender and age (Block, Scribner, DeSalvo, 2004; Bowman & Vinyard, 2004; Drewnoski & Darmon, 2005; Driskell et al., 2006; Morse & Diskell, 2009; Paeratakul et al., 2003). Most studies related to fast food consumption have been conducted in adult population, only a few have involved younger groups, such as college students. None of those studies have considered this important issue in Hispanics of college age. The objective of this study was to assess food habits, beliefs and dietary patterns of fast food consumption among a predominantly Hispanic college student population living on the U.S-Mexico border. A 21-item survey questionnaire was administered to 191 college students. One hundred and fifty eight students met the inclusion criteria for age (<25 years). Statistical analyses were conducted to determine gender differences in food habits, beliefs, and frequency of fast food consumption. Participants were predominantly Hispanic (84.81%), single (86.08%) and living with parents/family (79.75%). The mean weekly frequency of fast food consumption was 2.661 with no significant difference found between males and females. Compared to females, males considered price a more important factor when buying fast food ($P=0.04$). Females bought smaller sized items more frequently than males ($P=<0.001$) while males bought larger sized items more frequently than females ($P=0.02$). Family was the most common nutrition knowledge source (75.9 %) with a significantly higher percentage ($P=0.001$) of females than males considering family as a source to obtain nutrition knowledge (87.6 % vs. 60.9%). Findings from this study need to be taken into consideration when developing programs, strategies, interventions or policies intended to improve nutrition knowledge among students and as well to provide healthier food choices in the college environment.

Table of Contents

Abstract.....	v
Table of Contents.....	vi
List of Tables	vii
List of Figures.....	viii
Introduction.....	1
Hypotheses and objectives.....	9
Hypotheses and specific objectives	9
Methods	12
Sample	12
Sample size considerations	12
Subject selection procedure	12
Inclusion and exclusion criteria	12
Participant survey	13
Statistical analyses	15
Results.....	16
Discussion.....	20
Conclusions.....	26
References.....	34
Appendix A.....	40
Appendix B.....	45
Vita.....	50

List of Tables

Table 1: Demographic characteristics of participants (college students 17-25 years)...	27
Table 2: Most typical places to eat meals reported by college students (17-25 years).....	28
Table 3: Most typical people to eat meals reported by college students (17-25 years).	29
Table 4: Times in a week that students eat at fast food restaurants (17-25 years)	30

List of Figures

Figure 1: Living situation of participants (college students 17-25 years).....	31
Figure 2: Nutrition knowledge sources reported by college students (17-25 years)	32
Figure 3: Reasons for eating at fast food restaurants reported by college students (17-25 years)	33

Introduction

The consumption of food away from home, including that of fast food, has increased during the last decades in the U.S. This pattern has been identified not only among adults but also among youth (Kant & Graubard, 2004; Nielsen, Siega-Riz & Popkin, 2002; Paeratakul, Ferdinand, Champagne, Ryan, & Bray, 2003; Stewart, Blisard, Bhuyan & Nayga, 2004). According to the National Restaurant Association (2011), restaurant food expenditure in the U.S. nearly doubled from 1955 to 2010. Specifically, for every dollar spent on food in 1955, 25% was spent in restaurants compared to 49% in 2010. Approximately 960,000 full-service and fast food restaurant locations are currently operating in the U.S. It is projected that by the end of 2011 these facilities will generate approximately 604 billion dollars in sales. Fast food restaurants are projected to have slightly greater sales growth for 2011 than full service restaurants. Fast food restaurants, also known as quick service restaurants, are defined as places where food can be purchased and served in approximately 10 minutes without waiter service (French et al., 2001; Morse & Driskell, 2009). An increase of 3.3% over 2010 sales is projected for fast food restaurants in 2011, while full-service restaurants are expected to have an increase of 3.1% (NRA, 2011). The United States Department of Agriculture (USDA) has projected that the number of full-service and fast food restaurants will continue to increase (USDA, 2003).

Previous studies have linked fast food consumption with poorer diet quality and weight gain (Kant & Graubard, 2004; Ma, Bertone, Stanek, Reed, Hebert, Cohen, Merriam & Ockene, 2003; Schroder, Fito & Covas, 2007). Several authors have shown that consumption of food away from home, especially fast food, is associated with an increase of energy intake, fat and saturated fat which may increase the risk for overweight and obesity (Barnard, 2010; Bowman &

Vinyard, 2004; Currie, Della Vigna, Moretti & Pathania, 2009; Jeffery & French, 1998; Paeratakul, Ferdinand, Champagne, Ryan, & Bray, 2003). Previous research has revealed that fast food contains approximately 65% more energy than the average meal prepared at home. One reason for this may be because food portion sizes have increased over the years (Cummins & Macintyre, 2006). Portions of meals eaten away from home are substantially larger compared to the portion sizes of food prepared at home (Cummins & Macintyre, 2006; Nielsen & Popkin, 2003).

Several sociodemographic characteristics including socioeconomic status, ethnicity, gender, and age have been linked to frequent consumption of fast food. One of the characteristics of fast food is that it is inexpensive. This characteristic has been capitalized upon by fast food restaurant chains as a strategy to increase market share by offering affordable prices. Because of its low cost, persons of lower socioeconomic status may disproportionately rely on fast food as a significant food source (Jekanowski, 1999). In this case, some groups, especially those of lower socioeconomic status may be more likely to eat fast food than others (Rydell, Harnack, Oakes, Story, Jeffery & French, 2008). In fact, it has been found that energy-dense and nutrition-poor foods (such those served at many fast food restaurants) are more frequently consumed by people of lower socioeconomic status (Darmon & Drewnosky, 2008). Prior studies indicate that lower income urban consumers are more likely to live in areas with restricted physical access to healthy food (Drewnoski & Darmon, 2005). In addition, many lower income neighborhoods have a larger number of fast food restaurants compared to higher income neighborhoods (Powell, Chaloupka & Bao, 2007).

Certain U.S. ethnic minority groups such as Afro-Americans and Hispanics have lower average income compared to the majority population (US Census Bureau, 2010). It has been

reported that lower income minority groups appear to have a higher consumption of fast food compared to the U.S. majority population. (Block, Scribner, DeSalvo, 2004; Mazur, Marquis & Jensen, 2003). According to the U.S Consumer Expenditure Survey, in 2009 Hispanic households spent an average of 4.7% of annual income on food-away-from home while non-Hispanic households spent 4.1% of annual income on food-away-from-home (U.S. Bureau of Labor Statistics, 2010).

Gender also has been linked to fast food consumption patterns. A number of studies have shown that compared to women, men consume fast food more frequently (Driskell et al., 2006; Huang et al., 1994; Morse & Diskell, 2009; Paeratakul et al., 2003). Findings from the Continuing Survey of Food Intakes by Individuals (CSFII) 1994-1996, confirmed that a higher percentage of males reported fast food consumption (during any of the two survey days) compared to females (30% vs. 23.5%) (Bowman & Vinyard, 2004). Similar results were reported in another study in which lower income men had a higher weekly average frequency of fast food consumption compared to lower income women (males=2.3 times per week vs. females=1.7 times per week) (Jeffery & French, 1998). Some researchers have described what could be the reasons for fast food preference by males. In a study of Del Parigi (2002) it was found that different brain areas were activated in men and women during hunger and satiation. Additionally, other researchers such as Levi have described that differences in food selection are due primarily to the effect of masculinity (2006).

As for the difference in fast food consumption with respect to age some studies have described what appears to be a preference for fast food by the youth. Using data from the U.S Bureau of Labor Statistics' Consumer Expenditure Survey, Fan and colleagues (2007) analyzed food expenditure patterns in American households. Investigators classified households into

different categories according to expenditure. One of the categories referred to as "fast food group" identified households that allocated more than half of their food budget to fast food. Results showed that 18.4% of the sample was in that category. In addition, it was found that households headed by persons under the age of 25 years were more likely to be in the "fast food group" as compared to persons of 65 years and older (Fan, Brown, Kowaleski-Jones, Smith & Zick, 2007). This finding is consistent with Bowman and Vinyard (2004) who also reported that adults in the 20-29 years old age group were four times more likely to consume fast food as compared to adults 55 years or older.

Besides the association of some sociodemographic characteristics to fast food consumption, only a few studies have reported the reasons why people prefer to eat fast food. For example, a study of 605 predominantly non-Hispanic white adolescents and adults who ate regularly at fast food restaurants analyzed the reasons for eating fast food. The study evaluated 11 statements related to fast food consumption. Ninety-two percent of the participants reported agreement with the statement "fast food is quick", and 80% agreed with "restaurants are easy to get to." Compared to participants reporting eating fast food two times per week or less, those who reported eating fast food five times per week or more were more likely to agree with the statement that they ate at fast food restaurants because "it is food that it is easy to get to" and that they eat fast food because "they are too busy to cook" (Rydell, Harnack, Oakes, Story, Jeffery & French, 2008).

Prior studies have shown that child and adolescent populations are more likely to consume fast food than other age groups (Bowman et al., 2004; Davis et al., 2009; French et al., 2001; Paeratakul et al., 2003; Unger et al., 2004). However, only a few studies have specifically investigated fast food consumption patterns among college students. According to Nelson and

colleagues (2008), college students are an age group that requires close investigation because they are in a period characterized by increased autonomy and independence. Thus, younger adults, including college students, may be more likely to establish unhealthy behaviors that will persist through adulthood (Nelson, Story, Larson, Neumark-Sztainer & Lytle, 2008; Nelson, Larson, Neumark-Sztainer & Story, 2009). National College Health Risk Behavior Survey data suggests that as many as 35% of college students may be overweight or obese (Huang, Kempf, Strother, Li, Lee, Harris & Kaur, 2004). One possible reason for this could be the adoption of unhealthy eating behaviors in addition to low levels of physical activity.

Some studies of college students have focused on factors influencing decisions to consume fast food. For example, one study of 1912 college students enrolled in an introductory nutrition class examined their dietary practices. In this sample approximately 1 in 4 - 5 students skipped breakfast. The proportion of breakfast skippers was equally distributed between men and women (20.3% vs. 21.5%). However, during summer, women skipped breakfast (27%) more frequently than men (11%). Men consumed fast food combination dishes such as pizza and hamburger more frequently than women ($p < 0.05$). Even though no gender differences in the frequency of snacking were identified, the snack items consumed differed by gender. Men more frequently snacked on chips, candy bars, pizza, regular soft drink and beer. In contrast, crackers, popcorn, frozen yogurt and diet soft drink were the snacks items more frequently consumed by women (Huang, Song, Schemmel & Hoerr, 1994).

Driskell, Meckna and Scales (2006) evaluated Midwestern college students to determine if men differed from women in their fast food habits. One hundred and thirteen men and 113 women completed a questionnaire. The results revealed that a higher proportion of men than women consumed fast food for lunch at least once a week (84% vs. 58%). Also, only 37% of

men reported choosing a healthier menu options in a fast food restaurant, as compared to 51% of women (Driskell, Meckna & Scales, 2006). Another study of 259 white non-Hispanic students assessed patterns of food consumption and ten nutrition beliefs. Findings indicated that 5% and 7% of the students typically ate lunch or dinner, respectively, at a fast food restaurant. The most frequent reasons given by the students for eating fast food were, “limited time,” followed by, “enjoy the taste”. The majority of the students reported eating fast food from one to three times per week, with a higher proportion of men than women (74% vs. 60%). In addition, as compared to men, a higher percentage of women reported not typically eating at a fast food restaurant (10% vs. 5%). It was also reported that a larger percentage of females than males obtained their nutrition knowledge from friends, magazines, newspapers and family (Morse & Driskell, 2009).

Levi, Chan and Pence (2006) surveyed food decision making among 358 predominantly white college students. Their results suggested that females considered food decisions of greater personal importance and personal relevance than males. The investigators designed a scale to categorize the sample based on level of personal involvement regarding food decisions. Results showed that a greater proportion of females (49%) reported a high level of personal involvement as compared to males (27.9%). The authors concluded that masculinity plays an important role in food decision making. Some of the comments provided by male participants were, “I don’t care what I eat as long as there’s a lot of it and it’s cheap”, “I eat what I want where I want”, and “I don’t eat diet food. I’m hungry in 30 minutes, and it tastes like crap.” On the other hand, female respondents provided comments such as, “I never eat without considering what’s in it”, “I simply do not snack. There’s too much fat in processed food,” and, “I usually wonder what I’ll look like after eating this.”

Although the previously mentioned studies included college students, none of those studies appeared to include Hispanic college students. Hispanics are the fastest growing minority group in the United States. According to the U.S Census Bureau, Hispanics comprise the 15% of the total population, with a projected increase to 24.4% by 2050 (U.S. Census Bureau, 2004). For this reason Hispanic groups deserve special attention.

Due to the lack of information on fast food consumption among Hispanic college students, the proposed study was conducted in a predominantly Hispanic college student population from El Paso Texas and Ciudad Juarez, Chihuahua in the US-Mexico border largest region. According to the US Census Bureau, El Paso, Texas is considered to have approximately twice the national percentage of families living under federal poverty levels (23.3% vs. 9.9%) (U.S. Census Bureau, 2011). The poverty level in El Paso is twice compared to the one reported nationwide (26.6% vs 13.5%) and the median household income nationwide is \$51,424 vs. \$35,249 in El Paso, Texas. Therefore the region of El Paso is considered low income, which is a factor associated with increased fast food consumption.

The college population in U.S. is composed of approximately 55% females and 43% males. Nationwide 76% of the college population includes non-Hispanic white, 12% Hispanics, and 14 % African Americans (U.S. Census Bureau, 2009). The profile of the college student population at The University of Texas at El Paso, includes 54% females and 45% males. In addition 76% of the college student population is Hispanic, 9.9% are non-Hispanic whites, and 2.8% are black non-Hispanics (UTEP, 2011).

The goal of this study was to investigate differences between males and females in food behaviors, beliefs and frequency of fast consumption reported by predominantly Hispanic

college students. The results of this study are expected to help to a better understanding of fast food consumption in a predominantly Hispanic college population.

Hypotheses and Objectives

The objective of this study was to assess food habits, beliefs and dietary patterns of fast food consumption among a predominantly Hispanic group of college students living in one U.S.-Mexico border area.

Hypotheses and specific objectives

Hypothesis #1: As compared to females male college students consume fast food more frequently.

Studies have shown that male college students appear to consume fast food more frequently (Driskell, Meckna & Scales, 2006; Morse & Driskell, 2009). Also, this tendency has also been observed among other adult populations (Paeratakul et al., 2003; Bowman & Vinyard, 2004; Jeffery & French, 1998). Researchers have indicated that masculinity plays an important role in food selection and may be a reason for the preference of fast food by males (Levi, Chan & Pence, 2006). In addition, Del Parigi (2002) found that males and females have different brain areas activated during hunger and satiation making different food choices in response to such impulses. Therefore, it is expected that in this predominantly college student population, male college students would consume fast food more frequently than their female counterparts.

Objective #1: To compare frequency of fast food consumption between male and female college students.

Hypothesis #2: As compared to males, female college students consider nutrient value an important factor when buying food.

In a study of Levi (2006), it was found that females considered food decisions of greater importance than males. In the same study it was stated that males see healthier food choices as not masculine and tend to eat what they want without considering food content. In Hispanic culture, “machismo” might lead males to take healthier food choices and for that reason it is expected to find gender differences in nutrient value evaluation.

Objective #2: To compare evaluation of nutrient value between male and female college students.

Hypothesis #3: As compared to males, female college students more frequently buy smaller portion sizes of fast food.

It is known that fast food is energy dense (Cummins & Macintyre, 2006) and therefore larger portion sizes of fast food contain higher energy content resulting in a higher consumption of fat and saturated fat. A study showed that when offered females ordered healthier menu options more often than males (Driskell, Meckna & Scales, 2006). Another study showed that females ordered lower calorie items than males (Gerend, 2008). Finally, in another study it was found that more females than males considered small portion sizes when ordering (Diskell, Meckna & Scales, 2006). Therefore it is expected that females would pick smaller portion sizes more often than males. Also, Levi (2006) found that male participants reported that they order what they want in order to satisfy hunger and that might predispose them to order larger portion sizes.

Objective #3: To compare frequency of preference of smaller sized items at fast food restaurants between male and female college students.

Hypothesis #4: As compared to males, female college students more frequently refer to the Nutrition Fact Panel when making food consumption decisions.

In a study among college students it was found that when information was provided females ordered meals with fewer calories than males (Gerend, 2008). In another study, females reported to use nutritional information more often than males when ordering fast food (Driskell, Meckna & Scales, 2006). A limited number of fast food places offer nutritional information available at the point of purchase. For that reason it is expected that if a difference is found in the use of Nutrition Fact Panel in packaged food a similar phenomenon would be observed if nutritional information is provided by fast food places.

Objective #4: To compare the frequency of use of Nutrition Fact Panel in packaged food with respect to decision making between male and female college students.

Methods

Sample

This research protocol was approved by The University of Texas at El Paso Institutional Review Board (IRB). A total of 191 undergraduate students (83 males and 108 females) from The University of Texas at El Paso that were enrolled in university core courses during the academic year 2011 and in which instructors agreed to participate were part of the study. All participants signed a consent form after agreeing to answer a questionnaire. To protect the privacy and identity of all participants in the study, each questionnaire was given a unique code. To be in compliance with ethical issues all completed questionnaires were stored in a locked cabinet at The University of Texas at El Paso, College of Health Sciences.

Sample size considerations

Based on prior similar studies conducted among non-Hispanic college students (Morse & Driskell, 2009), an expected effect size of 30% was expected in this study. The power of detecting a difference between groups was set at 0.80. The present study required a minimum of 144 students (72 females and 72 males) to detect a difference on fast food preference among groups at $\alpha = 0.05$.

Subject selection procedure

Students enrolled in university core courses were invited to participate in the study during a regular class session. Permission from Instructors of each course was requested through electronic mail and obtained in advance. Prior to obtaining a signed consent form from each participant, all students attending each course received an oral explanation of the purpose of the

study, and as well as instructions on how to proceed to answer the questionnaire. Questionnaires were administered and completed in approximately the last 20 minutes of the selected courses. Participants were notified that a Spanish version of the questionnaire was also available (Appendix B).

Inclusion and exclusion criteria

Participants were freshman, sophomore and juniors college students aged 25 years or under, enrolled in university core courses. From the original sample of 191 students that agreed to participate in the study, 158 (69 males and 89 females) were in the target age range of 25 years and under. Participants older than 25 years (n=33) were excluded.

Participant survey

A questionnaire was used to test the proposed hypotheses related to food habits, beliefs, and fast food consumption patterns of participants. The questionnaire was developed by combining two different questionnaires previously used in two similar published studies. One questionnaire was provided by researcher Kristin L. Morse from the University of Nebraska, and the other by researcher Sarah A. Rydell from the Division of Epidemiology & Community Health, University of Minnesota, School of Public Health Minneapolis. One of the questionnaires was used in a study of college students that compared gender differences in fast food and other food consumption among students (Morse & Driskell, 2009). The second

questionnaire was used in a study that analyzed reasons for fast food consumption by those who consume fast food regularly (Rydell, Harnack, Oakes, Story, Jeffery & French, 2008).

Specific questions from the previous mentioned questionnaires were selected and used to construct a customized questionnaire for the purpose of this study. The combined questionnaire contained a total of 21 items (Appendix A). The questionnaire gathered sociodemographic characteristics of the study population including age, gender, ethnicity, marital status, income and living situation (Questions 1 – 8). Dietary behaviors were assessed with the questions “where do you typically eat?” and “with whom do you typically eat?” (Questions 9 & 10 respectively). When referring to sources from where participants obtained their nutrition knowledge, participants were instructed to select all choices that applied to them e.g., family, friends, books, TV, etc. (Question 11). Frequency of fast food consumption was assessed with the question “how many times per week do you usually eat breakfast, lunch, and dinner at a fast food restaurant?” (Question 12). The same question was supplemented with a subsequent question inquiring for the exact number of times that the person ate fast food in the past 7 days (Question 13). Those questions were followed by a question asking the participants to calculate the approximate percentage of food money spent monthly on fast food (Question 14).

Fast food beliefs such as importance of fast food characteristics (e.g. price, taste, nutrition and convenience) and reasons to eat at a fast food restaurant (e.g. “I eat at fast food restaurants because I’m too busy to cook” and “I eat at fast food restaurants because they are easy to get to”) were assessed with 5 points *Likert* scales in questions 15, 17 and 18. Food patterns of fast food were assessed in question 16 which evaluated how often the participants bought large, medium or small sizes of drinks in a fast food restaurant. An open-ended question (Question 19) asked the participants to provide any other reason for eating fast food. Food beliefs such as importance

of food attributes (price, taste, nutrition and convenience) were assessed with question 21, general food preparation habits was assessed with question 20.

Statistical analyses

For all variables of the study, descriptive statistics were used to examine data before statistical test were performed. For hypothesis 1, the mean frequency of fast food consumption between males and females were compared with the one-sided t-test, using questions 12 and 13.

For hypotheses 2 to 4, the Kruskal-Wallis test (exact p-value) one-sided was used. Questions 15 and 21 were used to examine the nutrient value evaluation (hypothesis 2). Question 16 was used to examine the purchase frequency of smaller sized items (hypothesis 3) and question 20 was used to examine the use frequency of the Nutrition Fact Panel in packaged food (hypothesis 4). It is important to note that the responses on *Likert*-type scale were analyzed as ordinal data and contingency tables were used (e.g. gender by question) (Ritcher & Higgings, 2006). SAS® software version 9.2 was used to perform all statistical analyses. All tests were conducted at the 0.05 level of significance.

Results

A total of 191 students (83 males and 108 females) enrolled in university core courses completed the questionnaire. From this initial sample of 191, 158 met the inclusion criteria for age (25 years and under) and this sample was used for the statistical analyses.

Demographic characteristics are displayed in *Table 1*. The sample was composed by 56.3% females and 43.7% males. The percentage of males and females was similar to the statistics of enrollment reported by the University for the academic year 2010-2011 (54.7% females and 45.3% males) resulting in a representative sample (The University of Texas at El Paso, 2011). The mean age was 20.5 years ($SD = \pm 2.006$) and 84.8% of the sample was self-identified as Hispanic. The most common marital status was single/never married (86.1%) followed by married with 7.0%. The majority of the students were not self-identified as household head (90.5%). Most of the participants lived off campus with parents and/or family (79.7%) followed by off campus housing with friends (8.9%) (*Figure 1*).

Table 2 shows preferences of students with regard to places for eating their meals. Most of the students (82.3%) selected home or dormitory room as their first option for eating breakfast, while fast food restaurants outside campus and on campus represented only 1.3% and 2.5% respectively. Forty point four percent of the students reported skipping breakfast. For lunch, home or dormitory room was the most common option for students to have their meal with 43.7%, but fast food restaurants outside campus and on campus represented the second and third most common option (20.9% and 7.6% respectively). Lastly, for dinner the most frequent option selected by the students was home or dormitory room with 73.4%. The second most common place to eat dinner was at full-service restaurants (6.3%) followed by fast food restaurant outside campus with (5.1%).

Table 3 shows the preferences of participants with regard to people with whom they usually eat their meals. During breakfast 59.0% of the participants usually eat alone; the second most common persons with whom participants eat breakfast were family members (26.6%). For lunch, the pattern was different. The most common persons to eat lunch with for students were friends (27.9%), followed by family members (25.3%). Finally, it was shown that the people with whom the students mostly ate their dinner were family members (55.1%) followed by significant other (10.8%).

The sources from where participants reported typically getting their nutrition knowledge are shown on *Figure 2*. Students considered family as the most common source from where they obtain their nutrition knowledge (75.9%). Results from Fisher's exact test indicated that a significantly higher percentage ($P=0.001$) of females than males considered family as a source to obtain nutrition knowledge (87.6% vs. 60.9%). A marginal result showed more females than males ($P=0.066$) considered a physician as a source to obtain nutrition knowledge (30.3% vs. 17.4%). Eighteen students (11.40%) chose the option "other" and among them, the most common source provided was "internet" with 10 (55.5%) students selecting it. Other sources mentioned by the students were "research" (3 people) (16.6%), "exercise trainer" (2 people) (11.1%), "school", "marines" and "nutrition places" (1 person each) (5.5%).

T-test was used to compare means of weekly fast food consumption frequencies between males and females (Hypothesis 1). The mean number of times in a week that the students usually eat at a fast food restaurant was 2.66. No significant differences were found between males and females. The mean number of times during the week before the day of the study that the students ate at a fast food restaurant was 2.35 with no significant differences between males and females. *Table 4* shows the number of times students ate at fast food restaurant indicating weekly

consumption and consumption during the week prior to the study. Ten point seven percent of students reported no fast food consumption in regular basis while most students reported to consume fast food usually once or twice a week (45.6%).

Participants were asked to approximate the percentage of food budget spent on fast food and the mean was 18.1% with a mode of 10%. Also, almost 9.5% of the participants reported spending more than half of their food budget on fast food.

Students were queried about the importance of taste, nutrition and convenience when buying fast food. A high percentage of participants reported that taste was the most important factor (94.73%) when selecting foods followed by convenience and nutrition as the least important (83.54% and 73.42% respectively). Participants were also asked about their agreement with certain reasons for eating at fast food restaurants. A higher percentage of students agreed that they eat at fast food restaurants because “they are easy to get to” (79.1%), followed by “I eat at fast food restaurants because they are quick” (78.5%) and “I eat at fast food restaurants because they are inexpensive” (51.9 %). Other reasons are shown in *Figure 3*.

To examine whether females consider nutrient value a more important factor when buying food, test if females buy smaller portion sizes of fast food more frequently and finally examine if females use the Nutrition Fact Panel in packaged food with respect to decision making more frequently than males (hypotheses 2, 3 and 4) a non parametric test (Kruskall-Wallis) was used. No significant differences were found between males and females with regards to the importance of nutritional value when buying fast food as well as for groceries (hypothesis 2). However, when compared to females, males considered price a more important factor when buying fast food ($P=0.04$). On the other hand females buy smaller fast food sized items more frequently than males ($P=<0.001$) (hypothesis 3). It was also found that males buy larger fast

food items more frequently than females ($P=0.02$). When comparing the frequency of use of Nutrition Fact Panel to make decisions no significant difference was found between males and females (hypothesis 4). However, 34.8% of the students reported frequent and 28.5% reported occasional use of the Nutrition Fact Panel.

Students were asked to state any other reasons for eating fast food. Only 69 students provided reasons. Responses were classified into six categories: “fast food is quick,” “fast food is convenient,” “I don’t have good cooking skills,” “I don’t eat fast food,” “I like the taste of fast food,” “I eat fast food because friends/family like it”. One response could not be classified (“to support business”). Categories in where more responses were obtained included: “fast food is quick,” and “fast food is convenient” with 26 (37.7%) and 15 (21.7%) matches respectively. Examples of responses that stated fast food was quick, were: “It’s an easy way to grab something on the go,” “It is the easy way to get out of a rush when you don't have time to eat healthy,” and “because I am running late and cooking is time consuming.” In the “convenience” category responses included: “convenient to schedule not enough time for a sit-down,” “fewer distractions when trying to study at home and am hungry” and “I have a very busy schedule and fast food restaurants are everywhere, therefore it’s easy access to everything and when going to work it’s the only thing that's around.”

Discussion

Some studies of college students have focused on factors influencing decisions to consume fast food. However, to the author's knowledge this is the first study of college students assessing fast food consumption patterns among a predominantly Hispanic college student population. With regard to demographic information, this sample of students was composed predominantly by Hispanics (84.8%); the majority of them were identified as single (86.1%), not being the household head of their families (90.5%) and living off campus with parents/family (79.7%). Unlike other similar studies conducted among different college student populations, few significant differences between males and females were found.

Nelson and colleagues (2008) suggested that racial/minority groups were more likely to live with their parents and in this sample of predominantly Hispanic student population, the majority of participants lived in off campus housing with their parents/family. Some studies have proposed reasons for that phenomenon. Haurin, Hendershott and Kim (1993) have observed that Hispanic young adults tend to live with their parents for longer time than Whites, because is customary in the culture and the high prices of rents. Other authors have pointed out that for Hispanic college students it is important to stay at their parents home while studying college, due to the high familism that prevails among them (Desmond & Lopez, 2009).

As for the hypotheses that were proposed in this study, in hypothesis 1 it was hypothesized that male college students consume fast food more frequently than their female counterparts. Findings from the present study did not show any significant difference between male and female college students in weekly fast food consumption, rejecting hypothesis 1. In hypothesis 2, it was hypothesized that among college students, in comparison with males, females would consider the nutrition value a more important factor when buying food. Results

showed that both male and female college students consider nutrition value of meals at the same level of importance when buying food. Thus hypothesis 2 was also rejected. In hypothesis 3 it was hypothesized that female college students buy smaller portion sizes of fast food more often than male college students. According to results from the present study, females buy smaller sized items of fast food more often than males ($P=<0.001$) and hypothesis 3 was accepted. Finally, hypothesis 4 stated that female students refer to the Nutrition Fact Panel more often than male students. Findings showed no differences between Nutrition Fact panel use between female and male college students. Therefore, hypothesis 4 was rejected.

With respect to fast food consumption, in the study of Davy and colleagues (2006) (among predominantly Caucasian college students) 15% and 9% of students reported eating lunch and dinner respectively, at fast food restaurants. A later study revealed different results, showing that for lunch and dinner 5% and 7% of students usually eat at fast food restaurants (Morse & Driskell, 2009). Interestingly, in the present study a higher percentage (28.5%) of students reported eating at fast food restaurants for lunch. However, the percentage of students who reported eating fast food for dinner is not much different from those reported by Davy and Morse (5.1%).

Regarding places where students prefer eating their meals, home was preferred by students for breakfast (82.3%), lunch (43.7%) and dinner (73.4%). These results might be related to the fact that the majority of students reported living at home with their families. Furthermore, family members were the most usual people with whom students ate dinner (55.0%). For breakfast, students reported eating alone most of the times (58.9%), while for lunch, friends occupied the first place (27.8%). These results can provide an idea of how to target students when offering them healthier meal options, especially during lunch when fast food is most

frequently consumed. Morse and Driskell (2009) described that home was also the most preferred place selected by students to eat breakfast (44%), while University cafeteria occupied the second place with 43%. For lunch and dinner, home was the second most common choice with 32% and 39% respectively. For Morse's study, University cafeteria was the most common place to eat lunch and dinner (50% and 47% respectively). On the other hand, Davy and colleagues (2006) reported that home was the most common place to eat meals possibly because the majority of students lived off-campus.

Also, in the present study it was found that a 4.4 % of surveyed students skipped breakfast, which is lower than what other studies have reported (approximately 20% of students skipping breakfast) (Huang et al. 1994). In another study conducted among Japanese female college students during 5 years, it was found that students who skipped breakfast for at least 6 days a week (less than 10% of the sample) were more likely to have menstrual disorders such as dysmenorrhea and irregular menstrual cycles (Fujiwara & Nakata, 2010). This is relevant because 71.4 % of breakfast skippers in the present study were women. However, the purpose of the study was not to investigate breakfast skippers and no conclusions can be drawn from present findings.

According to national data from the Consumer Expenditure Survey 2007, approximately 18.4% of surveyed American households spend more than half of their food budgets on fast food. That study also showed that households in the fast food category were more likely to be young. On the other hand, in this study it was shown that only 9.4% of students reported spending more than half of their food budgets on fast food. However, food budget was self-reported by the students and accuracy can't be assured.

Regarding sources of nutrition knowledge, Morse and Driskell (2009) identified university classes as the most important source among a predominantly Caucasian college student population. In contrast, college students from this study identified family as the most important source of nutrition knowledge. Another similar study carried out among Caucasian college students found that a higher percentage of females ($P=0.003$) than males indicated family as a nutrition knowledge source (58% vs. 40 %) (Davy, Bene and Driskell, 2006). Results from this study also showed a significant higher percentage of females indicating family as nutrition knowledge source, but even in a higher percentage (87.6% vs. 60.9%) ($P=0.001$). These findings might suggest that Hispanic college students have greater attachment to their families may result in their giving greater importance to the knowledge that they provide. Studies have shown that family plays an important role for Hispanic youth, especially females, in adherence to treatment, decision making, and self-care, among others. (Desmond & Lopez, 2009; Galanti, 2003; Gross, Davenport, & Braun, 2010; Hsin, La Greca, Valenzuela, Taylor, & Delamater, 2010; Rodríguez, Mira, Páez, & Myers, 2007).

Other results from this study showed that females tend to order smaller sized items more frequently than males ($P=<0.001$) and that males tend to order larger sized items more frequently than females ($P=0.02$). These findings are consistent with results from Driskell and colleagues (2006) that showed a higher percentage (53%) of female participants considering smaller portion sizes more often than male participants.

Concerning reasons for eating fast food, studies have indicated that the most predominant reasons for eating fast food are mainly convenience, limited time and that people enjoy the taste of fast food (Bryant & Dundes, 2006; Driskell et al., 2006; Morse & Driskell, 2009; Rydell et al., 2008). In the study conducted by Bryant and Dundes (2006), it was found that for Spaniards

and American college students, taste/flavor was the most important characteristic for eating fast food. In the present study, taste was the aspect that a higher percentage of students considered when buying fast food (94.7%). However, a lower percentage of students agreed that the taste of food was the reason for eating at fast food restaurants (43.0%). While on the other hand, easy access to fast food restaurants was the most popular reason in which students agreed (79.1%). In addition, Bryant's study suggests that American males considered the price of fast food of more importance than women. In the current study, price was more important for males than for females when buying fast food ($P=0.04$). Among the reasons to eat fast food expressed by the students, the most common was that "fast food is quick" followed by "fast food is convenient" which is consistent with findings from other studies.

In another recent study among a predominantly Caucasian student population, it was found that females tend to order fewer calories per meal when information was provided (Gerend, 2008). Also, Driskell (2006) showed that more females than males were frequently influenced by nutrition information when choosing fast food. In the present study no gender differences were found in the use of Nutrition Facts Panel, however, more than half of students reported use of it at least occasionally (63.3%). This information becomes of great importance when creating interventions to promote awareness of healthy food choices among students. Use of nutritional information in fast food could not be assessed because currently, very few fast food places offer nutritional content visible to costumers.

Some of the limitations of the study include that collected information was subjective self-reported data and might lack accuracy. Findings could not be generalized to the general college student population of U.S. because the racial composition varies greatly from this sample. Results are useful for understanding fast food consumption patterns of predominantly

Hispanic young adult college students. Further studies focusing on the same population could add other variables that were not investigated in this study. Examples of characteristics that have been associated with fast food consumption and that were not assessed in this study are overweight and obesity, proximity of fast food restaurants to the university and frequency of snacking (Block, Scribner, DeSalvo, 2004; Drewnoski & Darmon, 2005; Driskell et al., 2006; Morse & Diskell, 2009; Paeratakul et al., 2003).

Conclusions

Findings indicate that in this sample of predominantly Hispanic college students living in US-Mexico border, fast food is consumed regularly, especially during lunch time. Females tended to order smaller sized fast food items while males tended to order larger sized items. Also, males considered price a more important factor when buying fast food. This information becomes important when designing interventions targeting college students. An interesting finding for this population is that family appeared to be the most important source of nutrition knowledge. This should be taken into consideration by investigators when developing nutrition education programs. One approach might be to teach reliable nutrition information to parents in the community that they can pass to other family members. The results also suggested that students usually eat at fast food restaurants mostly because of the convenient access and quick service that they offer and because they enjoy the taste of the food. Interventions aimed to promote healthier food choices should focus on such characteristics to be able to compete with fast food establishments.

Table 1. Demographic characteristics of participants (college students 17-25 years)

<i>Age (years)</i>	<i>n</i>	<i>%</i>
17-19	65	41.1
20-22	68	43.0
23-25	25	15.8
Sex		
Male	69	43.7
Female	89	56.3
Hispanic		
Yes	134	84.8
No	24	15.2
Marital status		
Married	11	7.0
Cohabiting	9	5.7
Separated	1	0.6
Divorced	1	0.6
Single/never married	136	86.1
Household income (USD per year)		
Under \$9,000	18	11.4
\$10,000-\$14,999	15	9.5
\$15,000-\$24,999	17	10.8
\$25,000-\$34,999	18	11.4
\$35,000-\$49,999	19	12.0
\$50,000-\$74,999	12	7.6
\$75,000-\$99,999	8	5.1
\$100,000 or more	9	5.7
I don't know	24	15.2
I prefer not to answer	13	8.2
Missing	5	3.2
Household head		
Yes	14	8.9
No	143	90.5

Table 2. Most typical places to eat meals reported by college students (17-25 years)

<i>Places</i>	<i>Breakfast</i>		<i>Lunch</i>		<i>Dinner</i>	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Fast Food restaurant (outside campus)	2	1.3	33	20.9	8	5.1
Fast Food restaurant (on campus)	4	2.5	12	7.6	0	0.0
Work	1	0.6	9	5.7	7	4.4
Home or dormitory room	130	82.3	69	43.7	116	73.4
Full-service Restaurant (outside campus)	1	0.6	9	5.7	10	6.3
Other	8	5.1	3	1.9	1	0.6
Missing	12	7.6	23	14.6	16	10.1

Table 3. Most typical people to eat meals reported by college students (17-25 years)

<i>Places</i>	<i>Breakfast</i>		<i>Lunch</i>		<i>Dinner</i>	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Family Member(s)	42	26.6	40	25.3	87	55.1
Friend(s)	4	2.5	44	27.8	8	5.1
Roommate(s)	2	1.3	2	1.3	4	2.5
Co-Worker(s)	1	0.6	11	7.0	6	3.8
Significant Other	6	3.8	9	5.7	17	10.8
Alone	93	58.9	28	17.7	15	9.5
Other	2	1.3	0	0.0	0	0.0
Missing	8	5.1	24	15.2	21	13.3

Table 4. Times in a week that students eat at fast food restaurants (17-25 years)

<i>Range of days</i>	<i>Average fast food consumption per week</i>		<i>Consumption of fast food during the week before the study</i>	
	Frequency	Percent	Frequency	Percent
0	17	10.7	28	17.7
1-2	72	45.6	75	47.5
3-4	44	27.8	31	19.6
5-6	13	8.2	17	10.7
7-8	6	3.8	3	1.9
9 or more	5	3.2	4	2.5
Missing	1	0.6	0	0.0

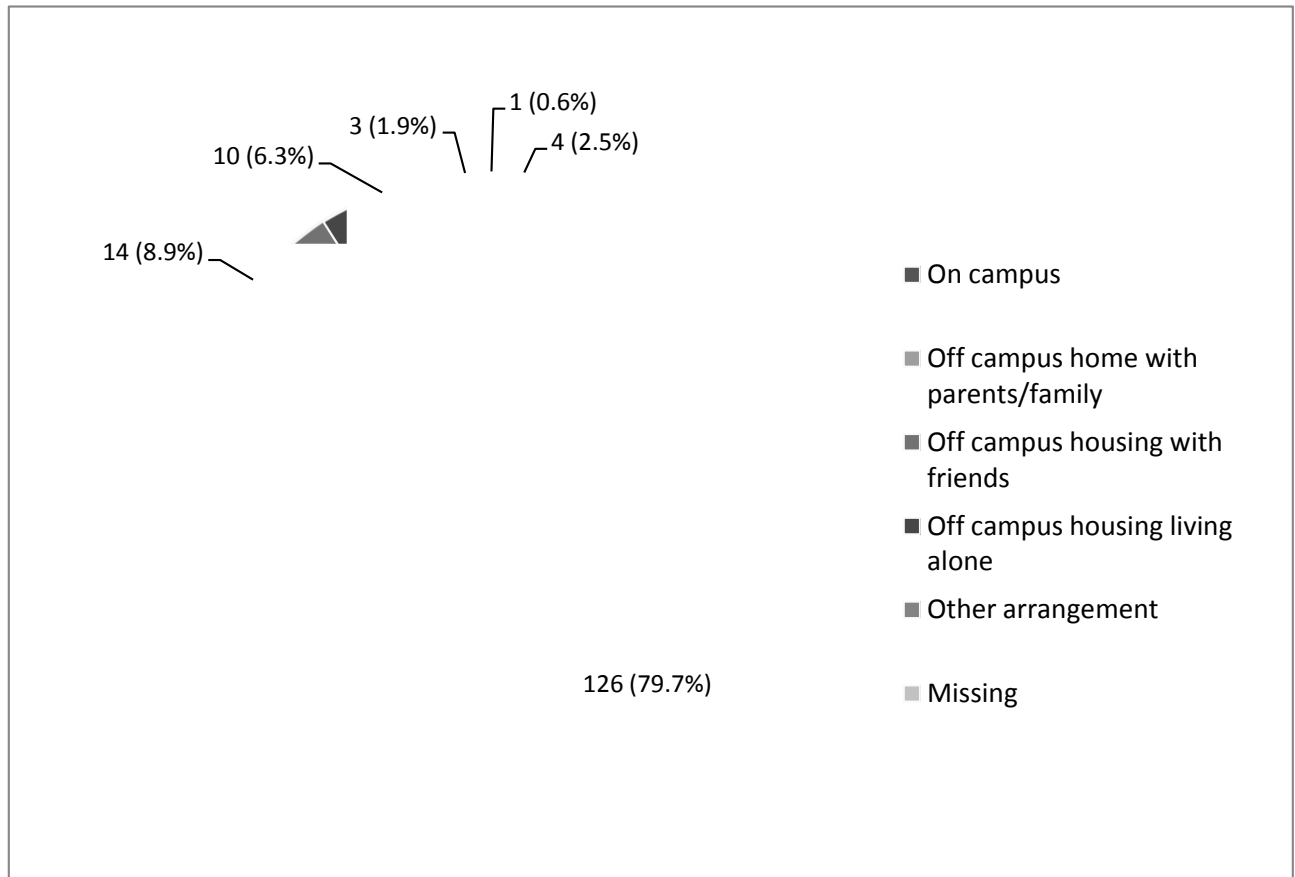


Figure 1. Living situation of participants (college students 17-25 years)

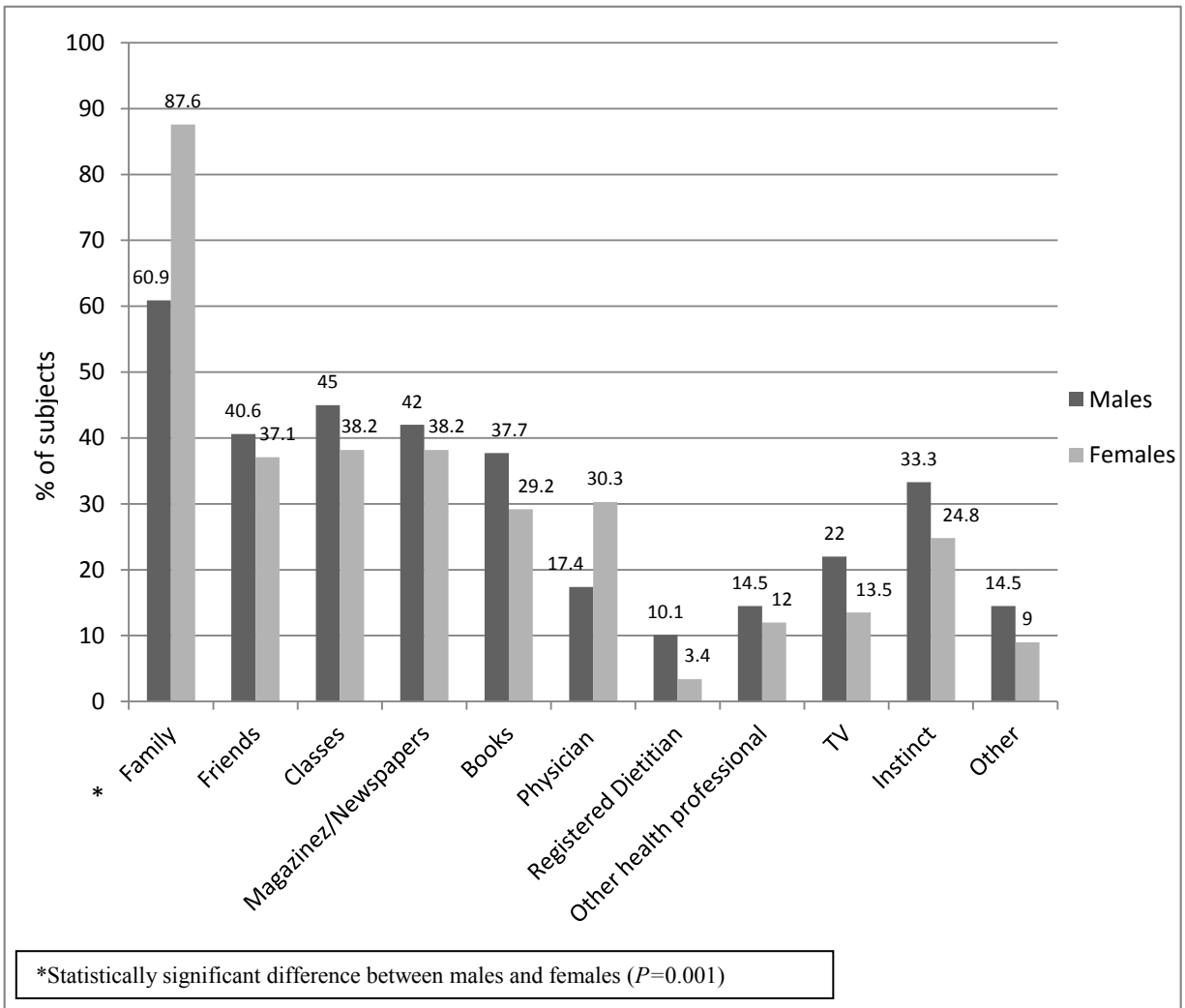
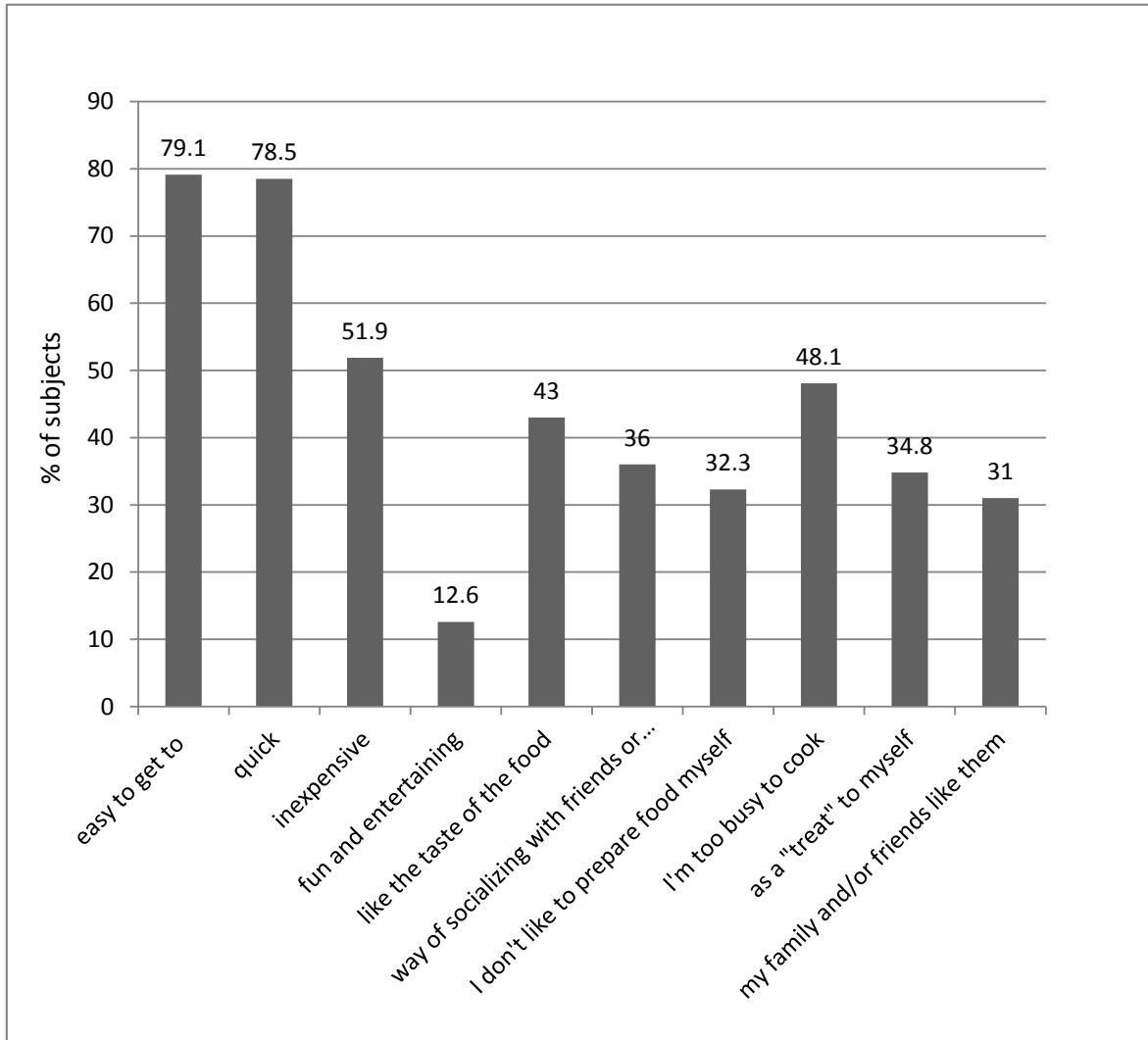


Figure 2. Nutrition knowledge sources reported by college students (17-25 years)



**Figure 3. Reasons for eating at fast food restaurants reported by college students
(17-25 years)**

References

- Barnard, N.D. (2010). Trends in food availability, 1909-2007. *Clinical Nutrition*, 91 (Suppl), 1530S-1536S
- Bowman, S.A., Gortmaker, S.L., Ebbeling, C.B., Pereira, M.A., & Ludwig, D.S. (2004). Effects of fast food consumption on energy intake and diet quality among children in a national household survey, *Pediatrics*, 13(1), 112-118
- Bowman, S.A., & Vinyard, B.T. (2004). Fast food consumption of U.S. adults: impact on energy and nutrient intakes and overweight status. *Journal of the American College of Nutrition*, 23 (2), 163-168
- Block, J.P., Scribner, R.A., DeSalvo, K.B. (2004). Fast food, race/ethnicity, and income: A geographic analysis. *American Journal of Preventive Medicine*, 27 (3), 211-217
- Centers for Disease Control and Prevention. (2008). Nutrition and the Health of Young People (Factsheet), 2008. Retrieved October 12, 2010, from: <http://www.cdc.gov/HealthyYouth/nutrition/pdf/facts.pdf>
- Currie, H., Della Vigna, S., Moretti, E., & Pathania, V. (2009). The effect of fast-food restaurants on obesity and weight gain. *NBER working paper series*. W14721
- Cummins, S., & Macintyre, S. (2006). Food environments and obesity-neighborhood or nation? *International Journal of Epidemiology*, 35, 100-104
- Darmon, N., Drewnosky, A. (2008). Does social class predict diet quality? *The American Journal of Clinical Nutrition*, 87, 1107-1117
- Davis, J.N., Nelson, M.C., Ventura, E.E., Lytle, L.A., & Goran, M.I. (2009). A brief dietary screener: Appropriate for overweight Latino adolescents? *Journal of the American Dietetic Association*, 109 (4), 725-729

- Del Parigi, A., Chen, K., Gautier, J., Salbe, A.D., Pratley, R.E., Ravussin, E., Reiman, E.M., & Tataranni, P.A. (2002). Sex differences in the human brain's response to hunger and satiation. *American Journal of Clinical Nutrition*, 75, 1017-1022
- Desmond, M., & Lopez, R.N. (2009). The role of familism in explaining the Hispanic-White college application gap. *Social problems*, 56(2), 311-334
- Drewnoski, A., & Darmon, N. (2005). The economics of obesity: dietary energy density and energy cost. *The American Journal of Clinical Nutrition*, 82 (suppl) 265S-273S
- Driskell, J.A., Meckna, B.R., & Scales, N.E. (2006). Differences exist in the eating habits of university men and women at fast food restaurants. *Nutrition Research*, 26, 524-530
- Engeland A., Bjorge, T., Tverdal, D., & Sogaard, A.,J. (2004). Obesity in adolescence and adulthood and the risk of adult mortality. *Epidemiology*, 15, 79-85
- Fan, J.X., Brown, B.B., Kowaleski-Jones, L., Smith, K.R., & Zick, C.D. (2007). Household food expenditure patterns: a cluster analysis. *Monthly Labor Review*, 130 (4), 38-51
- French, S.A., Story, M., Neumark-Sztainer, D., Fulkerson, J.A., & Hannan, P. (2001). Fast food restaurant use among adolescents: associations with nutrient intake, food choices and behavioral and psychosocial variables. *International Journal of Obesity*, 25, 1823-1833
- Fujiwara, T., & Nakata, R. (2010). Skipping breakfast is associated with reproductive dysfunction in post-adolescent female college students. *Appetite*, 55, 714-717
- Galanti, G.A. (2003). The Hispanic family and male-female relationships: An overview. *Journal of Transcultural Nursing*, 14 (3), 180-185
- Gross, S.M., Davenport, E., & Braun, B. (2010). Family influence: Key to fruit and vegetable consumption among fourth- and fifth-grade students. *Journal of Nutrition Education and Behavior*, 42, (4), 235-241

- Haurin, D.R., Hendershott, P.H., & Kim, D. (1993). The impact of real rent and wages on household formation. *The Review of Economics and Statistics*, 75 (2), 284-293
- Hsin, O., La Greca, A.M., Valenzuela, J., Taylor, C., & Delamater, A. (2010). Adherence and glycemic control among Hispanic youth with type 1 diabetes: role of family involvement and acculturation. *Journal of Pediatric Psychology*, 35, (2), 156-166
- Huang, T.K., Kempf, A.M., Strother, M.L., Li, C., Lee, R.E., Harris, K.J., & Kaur, H. (2004). Overweight and components of the metabolic syndrome in college students. *Diabetes Care*, 27, (12), 3000-3001
- Jekanowski, M.D. (1999). Causes and consequences of fast food sales growth. *United States Department of Agriculture (Food Review)*
- Jeffery, R.W., & French, S.A. (1998). Epidemic obesity in the United States: Are fast foods and television viewing contributing? *American Journal of Public Health*, 88, 277-280
- Kant, A.K., & Graubard, B.I. (2003). Eating out in America, 1987-2000: Trends and nutritional correlates. *Preventive Medicine*, 38, (2), 243-249
- Levi, A., Chan, K.K., & Pence, D. (2006). Real men do not read labels: The effects of masculinity and involvement on college students' food decisions. *Journal of American College Health*. 55, (2), 91-98
- Ma, Y., Bertone, E.R., Stanek, E.J., Reed, G.W., Hebert, J.R., Cohen, N.L., Merriam, P.A., & Ockene, I.S. (2003). Association between eating patterns and obesity in a free-living US adult population. *American Journal of Epidemiology*, 158, 85-92
- Mazur, R.E., Marquis, G.S. & Jensen, H.H. (2003). Diet and food insufficiency among Hispanic youths: acculturation and socioeconomic factors in the third National Health and Nutrition Examination Survey. *American Journal of Clinical Nutrition*, 78, 1120-1127

- Morse, K.L., & Driskell J.A. (2009). Observed sex differences in fast-food consumption and nutrition self-assessments and beliefs of college students. *Nutrition Research*, 29, (3), 173-179
- National Restaurant Association. (2011). Restaurant Industry Pocket Factbook. Retrieved February 21, 2011, from: http://www.restaurant.org/pdfs/research/2011forecast_pfb.pdf
- Nelson, M.C., Story, M., Larson, N.I., Neumark-Sztainer, D., & Lytle, L.A. (2008). Emerging adulthood and college aged youth: an overlooked age for weight-related behavior change. *Obesity*, 16, 2205-2211
- Nelson, M., Larson, N.I., Neumark-Sztainer D.N., & Story, M. (2009). Dietary patterns and home food availability during emerging adulthood: do they differ by living situation? *Public Health Nutrition*, 13(2), 222-228
- Nielsen, S.J., & Popkin, B.M. (2003). Patterns and trends in food portion sizes, 1977-1998. *The Journal of the American Medical Association*, 289, 450-453
- Nielsen, S.J., Siega-Riz, A.M., Popkin, B.M. (2002). Trends in energy intake in U.S. between 1977 and 1996: similar shifts seen across age groups. *Obesity Research*, 10 (5), 370-378
- Paeratakul, S., Ferdinand, D.P., Champagne, R.M., Ryan, D.H., & Bray, G.A. (2003). Fast-food consumption among US adults and children: Dietary and nutrient intake profile. *Journal of the American Dietetic Association*, 103 (10), 1332-1338
- Perez, V., & Senf, JH. (2006). Food cravings, ethnicity and other factors related to eating out. *Journal of the American College of Nutrition*, 25 (5), 382-388
- Powell, L.M., Chaloupka, F.J., Bao, Y. (2007). The availability of fast-food and full-service restaurants in the United States. *American Journal of Preventive Medicine*. 33 (4S) 240S-245S

- Richter, S.J., & Higgins, J.J., (2006). *A SAS Companion for Nonparametric Statistics*. Belmont, CA: Duxbury Press.
- Rodríguez, N., Mira, C.B., Páez, N.D., & Myers, H.F. (2007). Exploring the complexities of familism and acculturation: central constructs for people of Mexican origin. *American Journal of Community Psychology*, 39, 61-77
- Rydell, S.A., Harnack, L.J., Oakes, J.M., Story, M., Jeffery, R.W., & French, S.A. (2008). Why eat at fast-food restaurants: reported reasons among frequent consumers. *Journal of the American Dietetic Association*, 108, (12), 2066-2070
- Schroder, H., Fito, M., & Covas, M.I. (2007). Association of fast food consumption with energy intake, diet quality, body mass index and the risk of obesity in a representative Mediterranean population. *British Journal of Nutrition*, 98, 1274-1280
- Spanos, D., & Hankey, C.R. (2010) The habitual meal and snacking patterns of university students in two countries and their use of vending machines. *Journal of Human Nutrition and Dietetics*, 23, (1), 102-107
- Stewart, H., Blisard, N., Bhuyan, S., & Nayga, R.M., (2004). The demand for food away from home: Full service or fast food? *United States Department of Agriculture*, Report 829
- Unger, J.B., Reynolds, H., Shakib, S., Spruijt-Metz, D., Sun, P., Johnson, A. (2004). Acculturation, physical activity and fast-food consumption among Asian-American and Hispanic Adolescents. *Journal of Community Health*, 29 (6), 467-481
- United States Bureau of Labor Statistics. (2010). *Consumer Expenditure Survey, 2009 (table 2200)*. Retrieved February, 21, 2011 from: <http://www.bls.gov/cex/2009/Standard/hispanic.pdf>

- United States Census Bureau. (2004). *U.S. Interim projections by age, sex, race, and Hispanic origin: 2000-2050*. Retrieved March, 23, 2011 from:
<http://www.census.gov/population/www/projections/usinterimproj/>
- United States Census Bureau. (2009). *School Enrollment: 20009*. Retrieved April, 13, 2011 from: <http://www.census.gov/population/www/socdemo/school.html>
- United States Census Bureau. (2010). *Income, poverty, and health insurance coverage in the United States: 2009*. Retrieved April, 13, 2011 from:
<http://www.census.gov/prod/2010pubs/p60-238.pdf>
- United States Census Bureau. (2011). *El Paso county 2005-2009 American Community Survey 5-year estimates data profile highlights*. Retrieved March, 14, 2011, from:
<http://factfinder.census.gov>
- United States Department of Agriculture. (2003). *Agriculture Fact Book 2001-2002*. Retrieved February, 21, 2011 from: <http://www.usda.gov/factbook/2002factbook.pdf>
- University of Texas at El Paso, (2011). *UTEP 2010-2011 Facts*. Retrieved April 13, 2011 from:
<http://universitycommunications.utep.edu/facts/index.html>

Appendix A

Fast Food Consumption Patterns Study

Please check the appropriate response for the following questions.

PART 1 - GENERAL INFORMATION

1. How old are you?

_____ years

2. What is your gender?

☐ Male

☐ Female

3. Which of the following best describes you? (Check one)

☐ Hispanic or Latino/Latina

☐ Not Hispanic or Latino/Latina

4. Which of the following best describes you? (Check as many answers as apply)

☐ American Indian or Alaskan Native

☐ Asian

☐ Black or African American

☐ Native Hawaiian or Pacific Islander

☐ White

☐ Other: (specify) _____

5. What is your current marital status? (Check one answer)

☐ Married

☐ Living with someone in a marriage-like relationship

☐ Separated

☐ Divorced

☐ Widowed

☐ Single/Never Married

6. Adults only (18 years & older): What was your household income before taxes last year? (By "household," we mean that you should report the combined income of everyone in your home).

☐ Under \$9,999

☐ \$50,000 - \$74,999

☐ \$10,000 - \$14,999

☐ \$75,000 - \$99,999

☐ \$15,000 - \$24,999

☐ \$100,000 or more

☐ \$25,000 - \$34,999

☐ I don't know

☐ \$35,000 - \$49,999

☐ I prefer not to answer

7. Are you the household head?

☐ Yes

☐ No

8. Where are you currently living?

☐ On campus

- ☐ Off campus home with parents/family
- ☐ Off campus housing with friend(s)
- ☐ Off campus housing living alone
- ☐ Other arrangement

Specify _____

9. Where do you typically eat your meals? (Check only one for each meal)

	Breakfast	Lunch	Dinner
Fast Food restaurant (outside campus)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fast Food restaurant (in campus)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home or dormitory room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Full-service Restaurant (outside campus)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____ (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. With whom do you typically eat? (Check only one for each meal)

	Breakfast	Lunch	Dinner
Family Member(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friend(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roommate(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Co-Worker(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Significant Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eat alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____ (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Where has most of your nutrition knowledge come from? (Check all that apply)

- ☐ Family
- ☐ Friends
- ☐ Classes
- ☐ Magazines/Newspapers
- ☐ Books
- ☐ Physician
- ☐ Registered Dietitian
- ☐ Other health professional
- ☐ Television
- ☐ Instinct
- ☐ Other _____ (specify)

12. Thinking about how often you usually eat out, how many times in a week do you eat breakfast, lunch, or dinner out in a place such as McDonald's, Burger King, Wendy's, Arby's, Taco Bell, Pizza Hut, or KFC?

Times per week

13. Thinking about how often you ate out in the past 7 days, how many times did you eat breakfast, lunch, or dinner out in a place such as McDonald's, Burger King, Wendy's, Arby's, Taco Bell, Pizza Hut, or KFC?

Times in the past 7 days

14. What percentage of your food budget is spent on fast food monthly?

%

PART 2 – Your Opinions about Fast Food Restaurants

15. When you buy food from a fast food restaurant, how important is:	Very Important	Somewhat Important	Not very Important	Not at all Important	Don't Know
a Price?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 8
b Taste?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 8
c Nutrition?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 8
d Convenience?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 8

16. When you eat or drink something from a fast food restaurant, how often do you buy the:	Always	Usually	Sometimes	Rarely	Never
a Large or largest-sized items?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
b Medium or mid-sized items?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
c Small or smallest-sized items?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5

17. How much do you agree or disagree with the following statements?	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I eat at fast food restaurants because they are easy to get to.	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
I eat at fast food restaurants because they are quick.	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
I eat at fast food restaurants because they are inexpensive.	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
I eat at fast food restaurants because they are fun and entertaining.	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
I eat at fast food restaurants because I like the taste of fast food.	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5

18. How much do you agree or disagree with the following statements?	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I eat at fast food restaurants because it is a way of socializing with friends or family.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I eat at fast food restaurants because I don't like to prepare food myself.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I eat at fast food restaurants because I'm too busy to cook.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I think fast food restaurants have many nutritious food items to offer.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I eat at fast food restaurants as a "treat" to myself.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
I eat at fast food restaurants because my family and/or friends like them.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

19. DO YOU HAVE ANY OTHER REASON FOR EATING FAST FOOD?

PART 3 – GENERAL FOOD SHOPPING & PREPARATION HABITS

20. When you buy foods at the grocery store, how often do you use:	Often	Some-times	Rarely	Never	Never Seen	Don't Know
a The nutrition panel that lists the amount of calories, protein, fat, etc. in a serving of the food?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 8
b The list of ingredients that is printed on the package?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 8
c The short phrases printed on the package like “low-fat” or “light?”	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 8
d Statements on the package that describe health benefits of nutrients of foods, like “lowers cholesterol?”	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 8

21. When you buy groceries, how important is:	Very Important	Somewhat Important	Not very Important	Not at all Important	Don't Know
a Price?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 8
b Taste?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 8
c Nutrition?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 8
d Convenience?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 8

Appendix B

Estudio de patrones de consumo de comida rápida

Por favor seleccione la respuesta apropiada para las siguientes preguntas.

PARTE 1 – INFORMACIÓN GENERAL

1. ¿Cuántos años tiene?

_____ años

2. ¿Cuál es su género?

☐ Masculino

☐ Femenino

3. ¿Cuál de los siguientes lo describe mejor a usted? (Seleccione solo uno)

☐ Hispano o Latino/Latina

☐ No hispano o Latino/Latina

4. ¿Cuál de los siguientes lo describe mejor a usted? (Seleccione tantas respuestas como sean necesarias)

☐ Indio Americano o Nativo de Alaska

☐ Asiático

☐ Negro o Afroamericano

☐ Nativo de Hawái o de las islas del pacifico

☐ Blanco

☐ Otro: (por favor especifique) _____

5. ¿Cuál es su estado civil actual? (Seleccione una respuesta)

☐ Casado

☐ Unión libre

☐ Separado

☐ Divorciado

☐ Viudo

☐ Soltero/Nunca se ha casado

6. Solo adultos (mayores de 18 años): ¿Cual fue el ingreso en su hogar el año pasado antes de los impuestos?

(Entiéndase por “hogar” a los ingresos combinados de todos los que habitan su casa)

☐ Menos de \$9,999

☐ \$50,000 - \$74,999

☐ \$10,000 - \$14,999

☐ \$75,000 - \$99,999

☐ \$15,000 - \$24,999

☐ \$100,000 o mas

☐ \$25,000 - \$34,999

☐ No lo se

☐ \$35,000 - \$49,999

☐ Prefiero no responder

7. ¿Es usted el jefe del hogar?

☐ Si

☐ No

8. ¿En donde vive actualmente?

☐ Dentro del campus

☐ Fuera del campus con mis padres/familia

☐ Fuera del campus con amigo(s)

☐ Fuera del campus viviendo solo

9. ¿En donde come típicamente sus comidas? (Seleccione solo una respuesta por cada comida)

	Desayuno	Comida	Cena
Restaurante de comida rápida (Fuera del campus)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restaurante de comida rápida (Dentro del campus)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
En el trabajo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Casa o dormitorio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restaurante de servicio completo (Fuera del campus)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Otro: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. ¿Con quién come típicamente? (Seleccione una respuesta por cada comida)

	Desayuno	Comida	Cena
Miembro (s) de la familia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amigo(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compañero(s) de habitación	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Compañero de trabajo(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pareja	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Otro: _____(especifique)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. ¿De dónde proviene la mayor parte de su conocimiento en nutrición? (Seleccione todas las respuestas que apliquen)

- ☐ Familia
- ☐ Amigos
- ☐ Clases
- ☐ Revistas/Periódico
- ☐ Libros
- ☐ Medico
- ☐ Nutriólogo registrado
- ☐ Otro profesional de la salud
- ☐ Televisión
- ☐ Instinto
- ☐ Otro _____

12. Pensando acerca de que tan seguido come usted fuera, cuantas veces en una semana come usted su desayuno, comida o cena fuera en lugares como: McDonald's, Burger King, Wendy's, Arby's, Taco Bell, Pizza Hut, o KFC?

Veces por semana

13. Pensando acerca de que tan seguido usted comió fuera en los últimos 7 días, cuantas veces comió su desayuno, comida o cena fuera en lugares como: McDonald's, Burger King, Wendy's, Arby's, Taco Bell, Pizza Hut, o KFC?

Veces en los últimos 7 días

14. ¿Qué porcentaje de su dinero destinado a comprar comida lo gasta en comida rápida al mes?

%

PARTE 2 – Sus opiniones acerca de los restaurantes de comida rápida

15. Cuando usted compra comida de un restaurant de comida rápida, que tan importante es:	Muy importante	Algo importante	No muy importante	Para nada importante	No se
a ¿Precio?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 8
b ¿Sabor?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 8
c ¿Nutrición?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 8
d ¿Conveniencia?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 8

16. Cuando usted come o bebe algo de un restaurant de comida rápida, que tan seguido compra:	Siempre	Usualmente	A veces	Raramente	Nunca
a ¿Productos de tamaño grande?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
b ¿Productos de tamaño mediano?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
c ¿Productos de tamaño pequeño?	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5

17. ¿Qué tanto esta en acuerdo o desacuerdo con las siguientes frases?	Completamente de acuerdo	De acuerdo	Neutral	En desacuerdo	Completamente en desacuerdo
Yo como en restaurantes de comida rápida porque es fácil llegar a ellos	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
Yo como en restaurantes de comida rápida porque son rápidos.	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
Yo como en restaurantes de comida rápida porque son baratos.	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
Yo como en restaurantes de comida rápida porque son divertidos y entretenidos.	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5
Yo como en restaurantes de comida rápida porque me gusta el sabor de la comida rápida.	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4	<input type="text"/> 5

18. ¿Qué tanto esta en acuerdo o desacuerdo con las siguientes frases?	Completa mente de acuerdo	De acuerdo	Neutral	En desacuerd o	Completa mente en desacuerd o
Yo como en restaurantes de comida rápida porque es una manera de socializar con amigos o familia.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Yo como en restaurantes de comida rápida porque no me gusta preparar comida.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Yo como en restaurantes de comida rápida porque estoy muy ocupado(a) para cocinar.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Yo creo que los restaurantes de comida rápida tienen muchos productos nutritivos que ofrecer.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Yo como en restaurantes de comida rápida como una manera de premiarme.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Yo como en restaurantes de comida rápida porque mi familia y/o amigos les gustan.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

19. ¿TIENE ALGUNA OTRA RAZÓN PARA COMER COMIDA RÁPIDA?

PARTE 3 – COMPRA DE ALIMENTOS EN GENERAL Y HÁBITOS DE PREPARACIÓN

20.	Cuando usted compra comestibles, que tan seguido usa:	Muy seguido	Algunas veces	Raramente	Nunca	Nunca lo he visto	No se
a	¿El panel de nutrición que enlista la cantidad de calorías, proteína, grasa, etc. en una porción de comida?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 8
b	¿La lista de ingredientes que está impresa en el paquete?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 8
c	¿Las frases cortas impresas en el paquete como: “bajo en grasa” o “light”?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 8
d	¿Frases en el paquete que describen los beneficios para la salud de algunos los nutrientes en los alimentos, como “disminuye el colesterol”?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 8

21.	Cuando usted compra comestibles que tan importante es:	Muy importante	Algo importante	No muy importante	Para nada importante	No se
A	¿Precio?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 8
b	¿Sabor?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 8
c	¿Nutrición?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 8
d	¿Conveniencia?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 8

Vita

Alma X. Ortega was born in Cuernavaca, Morelos, México. She was raised in the border city of Ciudad Juarez, Chihuahua, Mexico where she attended the University of Ciudad Juarez in the Mexican State of Chihuahua to obtain her medical degree in July 2008. She started graduate school at The University of Texas at El Paso in August 2008 and was admitted to the Master in Public Health Program. Alma was awarded with a grant from the Hispanic Health Disparities Research Center for two consecutive years to conduct research. During graduate school she worked as Research Assistant for Dr. Christina Sobin at the Laboratory of Developmental Neurocognition and later for Dr. Oralia Loza in the Department of Public Health Sciences both Departments at The University of Texas at El Paso. Since 2009 she also collaborated as instructor for medical Spanish classes at Paul Foster, School of Medicine in El Paso Texas. Alma X. Ortega's e-mail: axortega@miners.utep.edu

Permanent address: 7711 Mazatlan Dr
El Paso, TX, 79915

This thesis/dissertation was typed by Alma X. Ortega.