THE INFLUENCE OF FAMILISM ON NUTRITION AMONG MEXICAN-AMERICAN FAMILIES

By

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Abstract

Familism is defined as an orientation towards the welfare of one’s immediate and extended family and has been measured to be higher in Latino families as compared to European-American families (Gaines, 1997). Research has found that familism, which often includes positive family communication, social support, and daily interaction, positively affects various external components such as academic performance among Latino children and adolescents (Valenzuela, et al. 1994). However, little research has been developed to understand how familism may affect nutrition in Latino families. Latinos are the second largest obese ethnic group in the United States and there is a need to investigate factors that contribute to healthy eating in order to develop research-driven interventions to reduce obesity (Ogden, et al. 2012). We hypothesize that high familism, will be associated with more fruit and vegetable intake. Also, less acculturation, or speaking more Spanish and less English, will be associated with more fruit and vegetable intake. One-hundred-and-eighty-three parents/caregivers of middle school and high school students participated in a self-report survey that assessed different aspects of the families’ lives. The responses were analyzed according to the main variables, fruit and vegetable intake, familism, and language preference. Results indicated associations between familism and English language preference (r=0.20, p<.01) but even more with bilingual preference (r=0.27, p=0.01). More familism was associated with more vegetable intake (r=0.25, p<.01), however familism was not significant with fruit intake. There were no associations among language preference and fruit or vegetable intake.
The Effects of Familism on Nutrition among Mexican–American Families

Obesity in the United States continues to grow exponentially, especially within the Latino community. Despite attempts to decrease the prevalence and eradicate incidence cases for the past 30 decades, obesity has doubled among adults in the United States while childhood obesity rates have more than tripled from only one generation ago (National Center for Health Statistics, 2009). Numerous research studies indicate that there are prominent disparities in obesity based on categories such as socio-economic status, region, and demographics (Ogden, Carroll, Kit, & Flegal, 2012). However, the most evident disparity is within the minority population as compared to the white American population. Latinos are only second to African-Americans for the most obese ethnic group in the United States. Statistics demonstrate that 38.6% of Latina girls and 40% of Latino boys are overweight or obese and are at higher risk of developing Type II diabetes (Ogden, et al. 2012). Of the Latino population, Mexican-Americans, specifically, have higher odds of being obese as opposed to their other Latino counterparts (Ogden, et al. 2012). Latinos currently constitute 16.7% of the U.S. population making them the largest ethnic minority in the United States (US Census Bureau, 2012). Therefore, since rates of obesity and the Latino population are simultaneously increasing, it is imperative to understand how obesity is associated with modifiable factors that can be used to prevent or reduce obesity amongst Latino families.

The Importance of Fruits and Vegetables
Obese adults and children risk having a decreased quality of life by being susceptible to cardiovascular disease, bone and joint problems, sleep apnea, and other psychological issues such as low self-esteem (Centers for Disease Control and Prevention [CDC], 2014). In addition to these immediate effects, long term effects of obesity may potentially develop into heart disease, stroke, osteoarthritis, and several types of cancer (CDC, 2014). The task of reducing the obesity wave seems to be simple on the surface; with an appropriate balance of diet and exercise, obesity can be substantially lessened. However, interventions on refining obesity and nutrition are not equally effective for all individuals and, thus, finding the best intervention programs for Latino families is continually being researched.

A method of controlling the obesity epidemic is being aware of how fundamental fruit and vegetable intake is for a healthy development (CDC, 2014). Fruits and vegetables, which are naturally low in fat and rich in water and fiber, promote healthy eating habits and can help in managing or losing weight. Parents and children can stay fuller for longer periods of time and consume fewer calories by replacing high-calorie sugary foods and snacks with fruits and vegetables (CDC, 2014). Healthy eating habits in Latino children have been shown to be strongly influenced by parents or caregivers that model healthy choices, make certain foods available or unavailable, and encourage their children to sustain a healthy diet (Evans, Crow Jennings, Dave, Scoblick, Sterba & Loyo, 2011). Parenting methods are explored in a study where the “do as I say” model in fact hindered fruit and vegetable intake in children as opposed to “do as I do” role modeling (Fisher, Mitchell, Smicklas-Wright, & Birch, 2002). The results indicated that young girls’
fruit and vegetable intake was positively related to their parent’s fruit and vegetable intake. However, parents who consumed less fruits and vegetables reported putting higher pressure on their daughters to eat them which in turn led these young girls to consume less fruits and vegetables. The pressure to eat a certain food (fruit or vegetable) by methods of reward, such as playing outside, tended to make children more reluctant to consume that healthy food option. Therefore, the importance of positive parental role modeling is crucial in the nutrition of the child and is simultaneously beneficial to the parent. Latino parents demonstrate a comprehensive understanding on healthy eating and the importance of physical activity (Flores, Maldonado & Duran, 2012). They show a willingness to engage in an increased active lifestyle and demonstrate general knowledge regarding the health concerns obese children possess (Evans et al., 2011). Dietary intake is an important determinant of obesity and positive parental role modeling may greatly influence reducing incidence for the future. Within Latino families however, the social mechanism of acculturation may link poor health practices and obesity (Ayala, Baquer, & Klinger, 2008).

Acculturation: Within-Group Variation

Research has demonstrated that acculturation plays a role in the Latino diet. Acculturation is defined as the phenomenon of cultural change when two cultural groups come into continuous first-hand contact (Ayala, Baquer, & Klinger, 2008). More acculturated Latino families have been found to report less healthy diets (Batis, Hernandez-Barrera, Barquera, Rivera, & Popkin, 2011). Recent research demonstrates that within only one generation in the United States, the influence of
the Mexican diet is almost completely lost, which also means a decrease in consumption of fruits, vegetables, and traditional ingredients (Batis et al., 2011). This may be a consequence of adopting the typical Americanized diet which tends to be heavy on red meat, cheese, and dairy. Additionally, more traditional Latino families tend to consume less sugar and have a higher fruit, vegetable, rice, and bean intake (Ayala, Baquer & Klinger, 2008). Less acculturated families living in Spanish-speaking households are more likely to buy and prepare what they know or grew up with from their native country which in turn is healthier than the American diet and positively influences Latino youth diet (Evans et al., 2011). These families also tend to set rules on sugar intake for their children. For example, soda is only consumed on special occasions or family functions (Evans et al., 2011). Studies demonstrate that Mexicans living in their native country consume less energy, or fewer calories, than Mexican-Americans, who consume less energy than US subpopulations (Batis et al. 2011). This sets a paradox among the Latino population who reportedly consumes less energy than non-Hispanic white Americans, yet have a greater index of obesity. Therefore, there must be a cultural component that drives obesity predominantly within Latinos.

Familism

While language and even diet may change rapidly once immigrants come to the United States, other cultural elements, such as Latino cultural values, do not change drastically among later generations and English speakers. Acculturation may have an effect on the way of life for Latinos, such as food and energy intake and language preference, but cultural values, such as family unity, seem to still be
fundamental to the collectivistic nature. It is these cultural values, such as familism, that may provide insight into why family context is important and how to effectively work with Latino families in developing interventions for obesity. Familism is defined as an orientation towards the welfare of one's immediate and extended family (Gaines et al, 1997). The importance of family welfare has been quantitatively measured in a study performed by Gaines and colleagues which concluded that collectivism and familism is higher in Latino families than Anglo and African-American families (Gaines, 1997). For this reason, familism is a construct that reflects the collectivistic nature of Latino culture (Romero, Robinson, Haydel, Mendoza & Hayden, 2004) that we often tend to attribute to their traditions, practices, and beliefs. Latino families who express a higher degree of familism demonstrate positive interpersonal familial relationships, high family unity, social support, and close proximity with extended family members (Romero et al., 2004). The benefits of high familism in Latino families can be attributed in children’s educational pursuits and academic achievement. For example, parental education combined with high familism promotes academic success in Mexican-American youth, which suggests that familism is of greater social and cultural relevance to schooling experiences (Valenzuela & Dornbusch, 1994). Therefore, if familism is vital for fostering external components such as academic achievement, it may also be significant among internal familial paradigms like nutrition and health.

Families and Eating Behaviors
There are three prominent barriers that hinder Latino parents towards a well-balanced diet: cost, getting children to eat a healthy meal, and easy access to fast food (Slusser, Prelip, Kinsler, Erausquin, Thai & Neumann, 2010). Socioeconomic status and family dynamics play a crucial role in family nutrition. For families that struggle to keep food on the table, cost is mediated by parental priority to provide meals their children will eat even if they are not the healthiest options. The sense of obligation component of familism is especially seen in poor Latino families that would rather see their children happy eating what they want as opposed to forcing them to eat something they do not enjoy (Kaufman & Karpati, 2007). Low income families see feeding as a symbol of nurture and achievement even at the expense of health (Kaufman & Karpati, 2007). These families may set excessive expectations around food which induce skewed patterns of over eating, unhealthy eating, and reduces consumption of fruits and vegetables among children (Kaufman & Karpati, 2007). The scarcity of food in low income Latino families could potentially have a negative effect on children to believe that eating is disproportionately important which could lead to over eating and, eventually, gaining weight.

The complexity of family dynamics is also influential to nutrition in children. In an observational study of various Latina mothers with children of various fathers, the results indicated that fathers used food, mostly sugary treats, as a means for an intimate relationship with their children (Kaufman & Karpati, 2007). Treating children to unhealthy snacks outside of normal meal times was a way for fathers to participate in their lives. The attempt to have a meaningful relationship with their children made the interaction centered on food, increasing the excessive importance of eating. Multiple fathers increase complexity
of family dynamics which can, in turn, aggravate existing childhood obesity issues within the Latino community (Kaufman & Karpati, 2007).

Poor Latino families establish social connections within their communities and, in some places, “take credit” for purchasing food. When a family does not have the means to pay for food right away, a store owner that has established a social connection with a family will give them credit by taking the food and paying it back later (Kaufman & Karpati, 2007). The establishment of social relationships with the community is part of the collectivistic nature of the Latino culture (Gaines et al., 1997). The willingness to help families for the welfare of the group is what familism embodies. In the case of nutrition however, parents’ obligation to nurture their children may be sometimes detrimental to their nutrition and may be aiding the obesity epidemic.

Subsequently, this study poses the investigative question: Under what conditions is familism a help or hindrance to nutrition in Latino families? There is no doubt that families influence the food environment (Ayala et al., 2008). Familism exemplifies a means of support, high family unity, and positive health outcomes (Romero et al., 2004). Latino youth who exhibit higher degree familism preferred to speak both English and Spanish (bilingual preference) or English alone at their homes (Romero et al., 2004). The English language preference or bilingual preference among these children demonstrates their higher level of acculturation to the United States as opposed to their native country. However, as mentioned before, more acculturated Latinos tend to have poor diets that include higher energy meals. Therefore, the following hypotheses link familism, acculturation, and nutrition of Latino families: Less fruit and vegetable intake will be associated with more
acculturation: speaking more English or both English/Spanish and speaking less Spanish, and a lower degree of familism.

Methods

Participants

One-hundred-and-eighty-three Mexican-American parents or caregivers of adolescent students attending various public schools across Tucson, Arizona served as participants (females = 79.8%, males = 20.2%). The parents and caregivers of these students represent various middle school and high school summer programs predominantly located in the South area of Tucson, AZ. The parents and caregivers were recruited to participate in the survey during the summer months at local public schools. The school district was chosen for its lower socioeconomic status profile (most students received free or reduced lunch) and higher levels of Latino enrollment. The area is primarily considered lower-middle to lower-class and the area is populated with a large concentration of people of Hispanic origin. 52% of the surveyed parent/caregivers reported being immigrants, and 90% of Latino decent, mostly of Mexican origin. Most of the surveyed parents/caregivers were mothers (65.6%) and fathers (13.1%) along with grandparent (10.9%), aunt/uncle (4.4%), step-parent (1.6%), and legal guardian (1.6%) and other.

Study Design and Procedures

This study can be considered a cross-sectional design; it is a 1 time point self-report survey. In the summer of 2012, the participants were given the La Zona De Promesa Parent/Caregiver Survey which is an extensive survey questioning various aspects of personal and family life. The survey was administered by bilingual and
bicultural survey administrators that included both local parents and UA students. All survey administrators were trained with high quality human subject training to provide surveys. Their basic demographic information was obtained and the self-response survey continued with questions covering various topics. Parents/Caregivers received $15 for completion of the survey. The responses were collected and entered into a database and filtered to cater to our specific target category, and select questions were analyzed within the following categories: nutrition, familism, acculturation, socio-economic status, and language preference.

**Measures**

*Demographics.* Parents/Caregivers reported their age, gender, and ethnicity.

*Fruit and Vegetable Intake.* Parents/Caregivers reported their family's fruit and vegetable intake by indicating how many times, 1= 0-1 day, 2= 2-3 days, 3= 4-5 days, and 4= 6-7 days, per week they (6b) eat fruit and (6c) eat vegetables not including french fries and potato chips.

*Familism.* A scale of Familism was used to assess Familism, which was developed for collectivistic groups (including Latino) and has been found to be reliable with collectivistic adult populations with an average reliability of $\alpha=0.91$. The scale is composed of fifteen items (11a-o) on a Likert scale with a five-item response range (1= everyday, 2= most days, 3= some days, 4= rarely, 5= never) assessing both values and behaviors. Sample items include questions about eating dinner with family, playing sports together, doing hobbies with family and things that are fun, spend quiet time together and talking with children, say things that make you try harder, show children how to do things, make you feel safe, stand by
you during difficult times, talk to family about feelings, education, and career goals, and tell you things to make you feel good.

**Acculturation/Language Preference.** Acculturation was measured using 8 items (12a-h) assessing language preferred and has been found to be reliable among parents/caregivers $\alpha=0.86$ for English use scale and $\alpha=0.87$ for Spanish use scale. Language preference was assessed with separate questions per language (English and Spanish) about (1) speaking with children, (2) watching TV, (3) listen to music with children, and (4) read with children, These items have a four-item response range (1=always, 2=often, 3=sometimes, 4=never). Article 23 assessed the number of years the survey taker has lived in the United States with options such as (1) my entire life, (2) less than 1 year, (3), 1-2 years, (4) 3-5 years, (5) 6-8 years, (6) 9-10 years, (7) 11-12 years, (8) 13-15 years, (9) 16-17 years, and (10) 18 years or more. Value were given to each item (1 = yes, 0 = no). Article 23 assessed generational living questioning children who in their family was born in another country (NOT in the United States) for with options such as (1) you, (2) your child, (3) your spouse/significant other, (4) your mother, (5) your father, (6) all your grandparents, (7) some of your grandparents, (8) all these people were born in the U.S., and (7) I don’t know. Values were given to each item (1=yes, 0 = no).

**Results**

Descriptive data on fruit and vegetable intake are provided in Figures 1 and 2. Families reported consuming more fruits ($M=3.12$, $SD=0.94$) than vegetables ($M=2.82$, $SD=0.89$) per week. Based on Pearson Product Moment Correlations, vegetable consumption predicted fruit consumption ($r=.59$, $p<.01$).
Demographic differences

T-tests were conducted to investigate gender differences in familism, language preference, fruit and vegetable intake. No significant gender differences were found for fruit or vegetable intake and language preference. Familism did demonstrate gender differences, (\(t=2.11, p<.05\)) such that females (\(M=3.21, SD=0.55\)) reported higher familism compared to males (\(M=3.00, SD=0.50\)). Annual household income was dichotomized into below poverty threshold (below $23,000) and above poverty threshold (over $23,000); 62% of the participants reported being below the poverty threshold. T-test results indicated higher familism (\(t=3.33, p<.05\)) for families below the poverty threshold (\(M=3.30, SD=.53\)).

Pearson Product Moment Correlations

Pearson product moment correlations were conducted in order to assess the associations between fruit intake, vegetable intake, familism, and language preference (See table 3). Results indicate significant associations between familism and English language preference (\(r=0.20, p<.01\)) but even more with bilingual preference (\(r=0.27, p=0.01\)). More familism was associated with more vegetable intake (\(r=0.25, p<.01\)), however familism was not significant with fruit intake.

Multiple linear regression was used to predict vegetable intake and fruit intake when associated with familism and English language preference (see Table 3). Model 1a measured vegetable frequency \(R^2=.05, F(2,127)=4.31, p=.02\) which was strongly associated with Familism, \(\beta=.25, p=.02\). However, English language preference did not predict vegetable intake directly. Neither familism nor English language preference predicted fruit intake.
Discussion

The purpose of this study was to investigate under what conditions familism helped or hindered nutrition among Mexican-American families. We investigated the hypothesis that lower fruit and vegetable intake would be associated with lower familism if there was a high degree of acculturation as in speaking more English and less Spanish. Familism was defined as an orientation towards the welfare of one’s immediate and extended family and was measured according to the parent/caregiver responses to questions about daily interactions their families had. Acculturation was defined as the phenomenon of cultural change when two cultural groups come into continuous first-hand contact, where previous studies demonstrated it hindered nutrition among Latino families. Results support that high familism was associated with more vegetable intake but was not associated with fruit intake. Parents/Caregivers reported consuming more fruits than vegetables in a typical week and results also indicated that fruit intake was correlated with vegetable intake. Although there were no significant findings that linked language preference and fruit or vegetable intake, English Only speaking families higher familism than those who only spoke Spanish. In addition, bilingual families had higher familism than monolingual families. Finally, families below the poverty threshold also had higher familism.

Our results, similar to those of Romero, Robinson, Haydel, Mendoza, and Killen (2004) may be interpreted such that Latino families that speak more English or both English and Spanish have higher levels of familism as opposed to those who only speak Spanish. This may be due to feeling more comfortable speaking both languages and being able to communicate with multigenerational families within the family dynamic and the outside world which may benefit family functioning (Romero et al., 2004). Although our study did
not find correlations between language preference and fruit or vegetable intake, familism did demonstrate an effect on vegetable consumption among these families. The null results for fruit intake may be attributed to the skewed distribution of fruit intake to the high end (Figure 1) which violates the assumption of the regression model, whereas vegetable consumption (Figure 2) follows a bell curve that is typical in a regression model.

Previous research shows that a higher degree of familism may be beneficial to academic success in children (Romero et al., 2004). Our study contributes to literature in demonstrating the importance of familism to nutrition in Latinos, an internal component that may potentially affect eating habits. The cultural value of familism among Latinos typically includes extended family members such as grandparents, cousins, aunts, uncles, and godparents (Coohey, 2011) which, in some cases, may serve as the primary caregiver such as those in this study. Future studies may see more closeness and diversity within Latino families and potentially relate family dynamic with nutrition.

Most of the surveyed parents/caregivers were families below the poverty threshold which may have had an effect as to why income was not associated with fruit or vegetable intake. Previous research demonstrates that lower income families have irregular eating patterns and make less healthy choices when purchasing food for their families (Kaufman & Karpati, 2007). On average, families were not consuming fruits and vegetable son a daily basis, as recommended, in the current study. However, our study revealed that these below poverty families exhibited higher familism. We recommend future research consider including a diverse sample of income and parent/caregiver education level to assess how familism helps or hinders nutrition in Latino families.
The current study of familism on nutrition, specifically fruit and vegetable intake, in Mexican-American families suggests that high familism or more family closeness and daily interactions fosters positive eating habits when it comes to consuming vegetables. In addition, findings indicate that acculturation in English/Bilingual language preference is correlated with higher familism among these families. Implications for future research include the need to investigate the role diverse caregivers and extended family members play in nutrition within a family. The cultural value of familism needs to be considered in future research among Latino families and how it affects nutrition within diverse distributions of income in order to understand if familism may aid or obstruct healthy eating habits when a financial variable is implemented.
References


Figure 1. Frequency of fruit consumption among families skewed to high end.

Figure 2. Frequency of vegetable consumption among families follows regression model curve.
Table 2. Pearson Product Movement Correlations

<table>
<thead>
<tr>
<th></th>
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<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
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<td>1. Fruit</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Vegetable</td>
<td>.59**</td>
<td>1</td>
<td></td>
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<tr>
<td>3. Familism</td>
<td>.15</td>
<td>.21**</td>
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<td>.06</td>
<td>.20**</td>
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</tr>
<tr>
<td>5. Spanish</td>
<td>.01</td>
<td>.01</td>
<td>.15*</td>
<td>-.28</td>
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</table>

Note: *p<.05, **p<.01, ***p<.001

Table 2. Pearson Product moment correlations assess the associations between language preference, familism, fruit intake, and vegetable intake. Results indicate significant associations between familism and vegetable intake as well as familism and English.

Table 3. Linear Regression Models

<table>
<thead>
<tr>
<th>Model and Variable</th>
<th>B</th>
<th>SE</th>
<th>95% CI</th>
<th>β</th>
<th>R²</th>
<th>R² Adj</th>
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<td>Model 1a: Vegetable Frequency</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>F(2,127)=.31, p=.02</td>
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<td>-</td>
<td>-</td>
<td>-</td>
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<td>.05</td>
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<tr>
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<td>.42</td>
<td>.15</td>
<td>.13-.72</td>
<td>.25**</td>
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<td>-</td>
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<td>.16</td>
<td>-.15-.49</td>
<td>.09</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Model 1b: Fruit Frequency</td>
<td></td>
<td></td>
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<tr>
<td>F(2,142)=1.70, p=.19</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>.02</td>
<td>.01</td>
</tr>
<tr>
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<td>.13</td>
<td>-.02-.50</td>
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<tr>
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<td>.15</td>
<td>-.23-.37</td>
<td>.04</td>
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</table>

Note: *p<.05, **p<.01

Table 3. Linear Regression was used to predict vegetable intake and fruit intake when associated with familism and English only preference. Familism predicts vegetable intake, β=.25. No significant findings predict fruit intake.