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Prenatal Care of Hispanic Mothers

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College Scholars
Poverty-Level Health Care
Craig A. Bleakney

Senior Project Defense
April 15, 2010

**Latino cultural beliefs, traditions, and the Latino
paradox in relation to clinical prenatal care
practices.**

Defense committee members:

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Abstract

There are many access barriers that may contribute to the delayed onset of prenatal care in Latino immigrants: transportation, lack of social security, lack of medical insurance, language barriers, personal finances, not being able to take time off of work, etc. It is the intent of this article, however, to explore whether cultural beliefs and traditions play a significant role in deterring pregnant Latina women from beginning prenatal care during their first trimester. It is possible that delayed prenatal care may be tied more strongly to Latino cultural beliefs rather than to access barriers.

Introduction

According to national data, immigrant Latina women seek prenatal health care much later in pregnancy than do non-Latina women. Early prenatal care has been directly correlated to higher birth weight and better general birth outcomes. Additionally, late prenatal care has been associated with higher rates of infant morbidity and mortality.

Background

Though Latinos seek prenatal care later in pregnancy, there is a documented “Latino paradox” in which recently immigrated Latina women have better birth outcomes than the United States national average; however, successive generations gradually lose these better birth outcomes but continue to delay onset of prenatal care.

Results

Results showed that 88% of Latino women saw a doctor in their first trimester and that 97% of respondents believed Latino women should see a physician in the first trimester of pregnancy.

Discussion

No correlation could be found to Latinos' thoughts of when prenatal care ought to begin due to the very high percentage of positive responses for beginning care during the first trimester. A high non-real infant mortality rate was found and indicates that there might be an increased actual infant mortality rate in the population of Latinos from Mexico currently residing in East Tennessee.

Key Words: prenatal care, Latinos, Latino paradox, acculturation

“Lack of access to prenatal care threatens the health of an entire generation of Latinos, who have the highest birthrate among racial/ethnic groups in the United States.”¹

Introduction

In 2002, the US Latino population had a LBW incidence rate of 6.5%, while non-Latino whites were at 6.9% and African Americans at 13.4%. Similar studies have since confirmed this trend². Low birth weight (LBW) is a common measure of infant morbidity, and delayed prenatal care has been associated with LBW; therefore LBW has been used as a measure of the prenatal care of a population². The “Latino paradox” explains that, despite low socioeconomic status, poor living conditions, early birth age, low education, and late onset of prenatal care (which are all established indicators of poor birth outcomes), recent Latino immigrants maintain the best birth outcomes of any race/ethnicity in the United States³.

One of the major negative effects resulting from acculturation is the erosion of the Latino social structure. The Latino culture emphasizes close family bonds and community support, which leads to moral support and understanding, lowered stress levels, and a higher quality of physical and mental health⁴. The longer Latinos reside in the United States, the more this social support system erodes⁴. This leads to the question of why LBW increases with increased time in the United States. Is it native culture, loss of culture, access barriers, or other causes?

It is the belief of the author that cultural traditions and practices play a vital role in the attitude and decision making of Latinos concerning healthcare during pregnancy. This report details the findings of the initial steps of an investigation to better understand the

Latino cultural beliefs associated with informal (community) and formal (clinical) prenatal health care. The research hypothesis is as follows:

Immigrant Latina mothers in the United States begin prenatal care at a delayed time in their pregnancy due to cultural traditions, beliefs, and experiences which do not necessitate that clinical prenatal care begin early in the pregnancy period.

Background

There are three over-arching theories which attempt to explain these findings. The healthy-migrant theory hypothesizes that only the most fit and physically healthy persons will be capable of undertaking the immigration journey from their native country. From such a group it would be expected to find favorable birth outcomes as well as overall increased health ⁵.

Another theory states that a strong cultural support for maternity, healthy traditional dietary practices, and *marianismo* (selfless devotion to the maternal role), help to create a healthy behavioral and environmental context for pregnancy. This cultural support is effective in protecting immigrants from developing unhealthy behaviors abundant in the United States such as smoking, drinking, and harmful dietary practices. Such behaviors have been linked to poor birth outcomes ⁴.

The final theory explaining the Latino paradox focuses on social support networks. There is a grand tradition of women helping women in the Latino culture (*personalismo*). Latino mothers and grandmothers pass traditional pregnancy beliefs and

practices on to their daughters and form, along with sisters and extended family, a close support group for the pregnant mother. Additionally, Hispanic women take responsibility for the health needs of their community, not only for those in their nuclear family.

Parteras (midwives) still provide most of the birthing care in many Latino countries, consequently *parteras* continue to play a significant role in the prenatal health care of Latino immigrants in the United States⁶⁻⁸. Thus, although formal prenatal care in a clinical setting does not begin until later in the pregnancy, there exists a strong informal system of prenatal care in the Latino culture. In the United States, *promotoras* bridge the gap between informal, traditional care and clinical care. A *Promotora*, also known as a *promotora de salud* (promoter of health), is the Latino equivalent of a community health worker⁹. *Promotoras* work directly with Latinos in the community, often going house to house. They deliver basic health care and health education and additionally serve as liaisons for local clinics⁹. Thus, *Promotoras* deliver traditional health care while promoting formal, clinical health care.

Why then, if the Latino paradox holds true and birth outcomes are favorable for recent Latina immigrants, are we concerned with establishing earlier clinical prenatal care for this populace? In Zuvekas' study of 1.1 million Mexican-American births, the addition of formal prenatal care reduced infant mortality nearly 250%¹⁰. Such a significant reduction in infant mortality is strong evidence for the effectiveness and necessity of formal, clinical prenatal health care programs for recent Mexican immigrants.

Another reason for the establishment of earlier prenatal care among Latinos is the negative effects resulting from acculturation. As Latina women become more accustomed

to the US culture, their favorable birth outcomes gradually fade. A study by Collins of 22,000 Mexican American births in Illinois showed that Mexican mothers born in the US had LBW rates of 14%, while Mexican born mothers had LBW rates of 3%³. Maternal age, education, and beginning trimester of prenatal care were closely associated with birthweight in US-born Mexican mothers, but not in Mexican-born mothers.

Scribner's study concluded that the greater the acculturation of a Latina mother to the United States culture, the greater the rates of LBW were¹¹. Cobas used data from this same study to demonstrate that the more acculturated Latina women become, the more they adopt unhealthy behaviors of the US culture such as smoking and poor nutrition¹².

Results from Jenny's study of mortality rates in the Southwestern US inferred that continued exposure to a Mexican culture orientation may support and reinforce healthy behaviors that Mexican American women, particularly those born in the US, may otherwise lose through acculturation¹³. This study also found that areas with a larger population of Mexican American women tend to provide culturally appropriate prenatal care through bilingual clinicians as well as community health workers¹³. Parents of Latino adolescents cite the language problem as the single most important barrier to obtaining health care for their children¹⁴. Health clinics with bilingual services often find a much greater response from the Latino community. Additionally, clinics that employ the services of community health workers (*parteras*, *promotoras*, etc.) are able to bring health care to a much larger Latino populace. Thus, early clinical prenatal health care is not being promoted as the save-all solution for the effects of acculturation. Rather, models which combine strengthening of core Latino social and cultural values (such as language spoken and non-clinical, traditional prenatal care) along with promoting earlier

clinical prenatal care through familiar and trusted cultural lay health workers have shown tremendous success¹⁴. It is essential that Latino immigrants begin prenatal care early in their pregnancies; however, it has been demonstrated that the best way to accomplish this is to encourage the cultural traditions of informal prenatal care administered through lay health workers and to incorporate clinical prenatal care through these workers.

In addition to the language barrier, there may be cultural barriers which discourage Latina women from seeking prenatal health care early in their pregnancy. With various availability of healthcare in native Latino countries, it is difficult to speculate as to the reasons why the Latino culture does not find early prenatal care of priority. *Parteras* (midwives), who provide the majority of prenatal care in native Latino countries, may not be informed of a pregnancy which needs attending to until a much later time in the pregnancy, and thus prenatal care might not begin until the second trimester or later. Another frequent problem is that the availability of vitamins, medicine and medical equipment may not be at an adequate level to appropriately care for a pregnant mother even if healthcare is sought early in the pregnancy¹⁵. Many Latino immigrants in the United States hold a certain level of distrust or hesitancy for documenting processes and paperwork, and in this way there may exist an obstruction that would prevent Latino immigrants from seeking clinical prenatal care. Though there are multiple factors which could contribute to the low emphasis placed on early prenatal care in the Latino culture, the delayed onset of prenatal care is indeed a cultural phenomenon among recent Latino immigrants in the United States.

McGlade advocates that greater focus be given to strengthening the professional relationship between clinical prenatal care and informal prenatal care². This idea proposes

a merger between two cultural ideas rather than substituting one cultural norm (supportive Latino community structure) for another (early clinical prenatal care). In this model, *doulas* (caregivers who provide support during labor and postpartum), *promotoras* and *parteras* provide outreach to ensure that pregnant women are aware of and have access to clinical prenatal health care. They also provide the social support system that exists in Latin America but disappears with acculturation. Many clinics are employing such methods; they are recruiting and training *Promotoras* to communicate the need for and to provide basic clinical prenatal services. *Promotoras* are frequently aware of most, if not all pregnancies occurring in the community, and become an advocate both for these mothers and the clinic they are employed by.

Setting

Latinos in East Tennessee compose the fourth fastest growing Latino population in the United States. Additionally, the Mexican immigrant population in Tennessee is growing faster than any other state¹⁶. Census counts are thought to be seriously misrepresentative due to the large volume of undocumented Latinos residing in Latino communities in East Tennessee¹⁷. Immigrants from Latin America comprise 80% of the undocumented population in the United States, with Mexican immigrants accounting for the majority of this number¹⁷⁻¹⁸. Between the 1990 and 2000 census, the Latino population in Tennessee increased 378%¹⁶, while specifically the Mexican population grew an astonishing 2,166%¹⁸. Thirty to thirty-nine percent of Tennessee's immigrant population is undocumented, compared to the 26% national average¹⁷. Knox County's Latino population comprises 2.4% of the total population, while this number reaches

10.9% for Hamblen County¹⁹. If we factor in the roughly 30-40% undocumented population, Tennessee's Latino population projections rise to 5.3-6.2%, Knox County becomes 3.4-4%, and Hamblen County becomes 15.6-18.2% Latino.

Methods

In order to poll the East Tennessee Latino population on their cultural beliefs, a survey was selected as the instrument of choice. The purpose of a survey is: "to generalize from a sample to a population so that inferences can be made about some characteristic, attitude, or behavior of this population"²⁰. The clinics targeted were located throughout Knox County, Hamblen County, and Jefferson County in East TENNESSEE. The 2008 census estimated that 10320 Hispanic persons resided in Knox County, 500 in Cocke County, 6773 in Hamblen County, and 1328 in Jefferson County¹⁹. The combined Hispanic population in these four counties is then 3.27% (18,921 persons) of the total County population, which is just under the 3.7% state average. Therefore the sample size for the pilot test was targeted at 190 surveys or 1% of the combined Latino population in these counties.

Rather than using or modifying an existing instrument, a new survey was specifically designed for this study. The survey was designed to obtain self-reported information on attitudes and practices of Latinos without collecting personal identifying information. The survey (form X) has 17 questions and was developed utilizing relevant literature. The survey was written in Latin-American Spanish and reviewed by native Latinos as well as Spanish faculty at the University of Tennessee, Knoxville to ensure cohesiveness, correct grammar, and appropriate translation of ideas. University of

Tennessee IRB approval for human subjects research was obtained on January 25, 2010. This was a cross-sectional survey and was in commission for five weeks (February 10, 2010 - March 22, 2010) as a pilot test to establish the validity and reliability of the instrument for future testing of the stated hypothesis.

This survey targeted Latino men and women ages 18-51. The survey was given to women since, as the child carrier, they participate directly in prenatal care. The survey was given to men as well, because in the Latino paternal culture, the beliefs of men weigh heavily on what actions the woman will be able to take²¹. If the man does not think early prenatal care is necessary, or if he is not available to take the woman to see the doctor, then most often the woman will not be able to begin clinical prenatal care until the man is willing and able to take her.

The age of 18 as a beginning age was chosen based upon the legal age of marriage without parental consent in the state of Tennessee²². The national Latino teen pregnancy rate, at 94/1000, is higher than non-Latinos^{2,6}. However, since it has been documented that Latino teen pregnancies are significantly correlated to acculturation^{2,6}, it is questionable whether young teenage mothers would hold to Latino traditional beliefs concerning prenatal care. As the purpose of this survey was to measure traditional Latino beliefs concerning prenatal care, those under the age of 18 were not included. The age of 51 was chosen as a cut-off age, as this is the average age for the onset of menopause²¹. Rather than ask men what age their wife currently was in order to ensure she was within childbearing years, a question was asked concerning the length of time since the last pregnancy. These age boundaries were chosen in order to include Latino mothers and

spouses of mothers within typical childbearing years who would be able to most clearly recollect their recent experiences and beliefs associated with pregnancy.

Surveys were distributed at health care clinics or community-based organizations possessing a considerable Latino clientele in and surrounding Knoxville, TENNESSEE. Those businesses are as follows: Rural Medical Services, Parrottsville clinic; Women, Infants and Children clinic at Knox County Health Department; Lisa Ross Birth and Women's Center; Alianza Del Pueblo; and Monroe County's Women's Wellness and Maternity Center.

These five organizations were given a manila envelope including 50 copies of the survey in Spanish (Form X), one reference copy of the survey in English (Form Y), instructions for distribution (Form Z), and a written approval waiver (Form W). Upon delivering the manila envelope, form Z was reviewed with the manager overseeing the distribution of the surveys, and the written approval waiver (Form W) was carefully reviewed and signed before further action could be taken. At all clinics except Rural Medical Services, the surveys were self-administered. All patients of Hispanic ethnicity visiting these clinics during this five week time frame were invited to participate in the survey. No incentives for completing the survey were offered, implicit or explicit. Care was made to explain that the clinics had no attachment to the survey, and whether one chose to participate or not would in no way effect the treatment they were to receive at the clinic. Upon choosing to participate, subjects were given the survey and asked to fill it out on their own without any interference from others. If a participant was of insufficient literacy to complete the survey on their own, a trained worker was available to provide aid for those individuals. These workers were thoroughly informed of the

contents of form Z and made to understand that strict adherence to these guidelines was of the utmost importance.

Upon completion of the survey, the form was returned directly to the labeled manila envelope from which it came. These envelopes were kept in secure locations supervised by the directors of the clinics.

The manila envelopes were collected from each clinic on March 22, at which time the distribution process was completed.

Rural Medical Services (RMS) clinics strongly requested that the surveys be administered by personnel in their clinics. Potential bias for this form of data collection is discussed in the discussion section of this article. Those administering the survey from RMS were also thoroughly informed of the contents of form Z and made to understand that strict adherence to these guidelines was of the utmost importance. In the RMS clinic, Latino patients were either administered the survey in a private exam room or brought from the waiting room to a private room to complete the survey. The person administering the survey would explain that the participant's answers were in no way connected to the treatment they would receive at the clinic, and that there would be no personal identifying information linked to the respondent's answers upon completion. Patients with an adequate literacy level were read the introductory statements and then asked to mark which answers they felt best represented their thoughts. For patients with a low literacy level, a trained translator was available to administer the survey. The translator would read the question in Spanish, and then read subsequent answers for the subject to choose from. The survey was read word for word by the translators. If participants did not understand a question, the translators were at liberty to repeat the

question as written, but no interpretation or explanation was allowed. It was also requested that the author personally administer some surveys.

Answers from RMS respondents were compared to responses from non-RMS respondents as well as all respondents. There were no significant differences in age nor in length of time resided in the United States. One difference found between RMS respondents and other respondents was the answers to what 'prenatal care' meant. RMS answers showed a greater association of *promotoras* (lay health workers) as part of prenatal care, and a lower association of *parteras* (midwives) as part of prenatal care. To further investigate the cause of these differences, a study might be designed which looks at these two groups exclusively and compares the cultural definition of *promotoras* and *parteras*. An operational definition for these terms should be established in such a study.

Results

The complete statistical results of the survey by percentage of respondents can be found in Appendix A. 159 surveys were collected, of these 155 were usable. The software Microsoft Excel and STATA 10.0 were utilized to generate statistical results.

Of those who were surveyed, the mean age was 30 years old with a median age of 29.5 and a range from 16 to 58 years old. The survey specified the respondent should be between the ages of 18-51 for reasons stated in the background section. Thus, 4 surveys from respondents outside of these parameters were unusable. 17.8% of respondents were male and 82.2% were identified as female.

70.3% of respondents labeled Mexico as their country of birth, while 15.5% came from Guatemala, 7.1% from Honduras, 3.9% from other Latino countries, and 3.2% were

born in the United States. Notably, the category of ‘other’ contained 3 respondents from Venezuela, 2 from the Dominican Republic, and one person from Peru.

All but three respondents were non-US natives, and on average they had resided in the United States for 8.1 years. Length of time in the U.S. ranged from 0.75 years to 52 years with a median of 6 years.

Respondent women had been pregnant an average of 2.3 times, with a range of zero pregnancies to seven pregnancies. The median number of pregnancies for the sample population was two. On average, time since pregnancy was 44.5 months (3.75 years), and the range was from 0.5 months to 28 years. The mode of the time since last pregnancy was 1 year and 1 month.

When questioned regarding what access barriers respondents had met when seeking health care, they responded as shown by table 1.1 (multiple responses allowed). The choice of “no access barriers” was not given as an option; thus for respondents who did not indicate a response, the question was labeled as incomplete.

Table 1.1	N= 141
Reported problems with accessing clinical health care	
Medical Insurance	43.3%
Language barriers	40.4%
Finances	36.2%
Distance from clinic	29.8%
Transportation	21.3%
Long waiting times	12.1%
Cannot leave work	9.2%
Unclear where to go	9.9%
Other problems	0.7%

The top three access barriers to health care for Latinos in order of importance are: problems with medical insurance, problems with language barriers, and personal finance

troubles which prevent them from seeking health care. The opened ended 'other' category revealed one response of 'hand supports' as an additional access barrier. The author believes this refers to handicap accessible entrances.

A question asking respondents about the definition of prenatal care yielded high responses for going to see a physician (86%), good diet and exercise (39.9%), and support from family and friends (30.1%). Only two respondents (0.7%) claimed to not have sought a physician's care when pregnant, while 97.8% of respondents received medical care from a physician during their pregnancies. When questioned as to when a woman should go see a doctor to begin prenatal care during the course of her pregnancy, 97.3% said this was appropriate during the first trimester.

The majority of Latinos (99.3%) believe it is beneficial to seek a physician's care to begin prenatal care during the first trimester of pregnancy (first 12 weeks). Most Latinos in this category (65.1%) believe care should be administered during the first month of pregnancy. Respondents were also questioned as to when they personally began prenatal care under a physician. 88.1% of respondents had seen a physician during the first trimester.

A large majority of respondents (93.9%) said seeing a physician helped their baby 'very much' to be in good health, compared to 3.4% who said 'much', 2% who answered 'little', and only 1 respondent who claimed it made 'no difference' to the health of their baby.

Respondents were asked to comment upon the prenatal care seeking practices of persons in their native countries. According to responses, 62.7% of women in foreign Latino countries seek prenatal care within their first trimester of pregnancy. Alarming,

18.3% of respondents said women only sought care at the time of delivery. 18.3% of respondents claimed that the prenatal-care-seeking practices of their native country influenced their decision as to when they decided to begin prenatal care. 81.7% said what women did in their native country held no influence upon when they would approach a physician to begin prenatal care. Curiously, no respondents displayed a belief that women should seek prenatal care only at birth, and likewise only one respondent reported seeking care only at delivery.

Of those who participated in the survey, 20.5% reported experiencing the death of an infant (within the first year of life), whereas 79.5% had not experienced a first-year child mortality. Similarly, 20.7% reported at least one miscarriage, whereas 79.3% reported no miscarriages.

Table 1.2 below shows the correlation between how long respondents had lived in the United States and what the term ‘prenatal care’ meant to them. Question 4 asks how long a person has lived in the United States while question 8 asks what the words “prenatal care” means to the respondents. The length of time resided in the united States has been divided into four categories; less than four years, between four and six years, between six and ten years, and greater than ten years. The question asking about the definition of prenatal care allowed multiple responses including:

- a) Going to see a doctor
- b) Support from family and friends
- c) Good diet and exercise
- d) *Promotoras*
- e) Midwives
- f) Other

While the results were not statistically significant, two trends can still be seen.

With increased time residing in the United States, respondents reported an increased

perception that good diet and exercise was a component of prenatal care. Additionally, with increased time residing in the United States, respondents also reported an overall increase in perception of *Promotoras* as being part of prenatal care.

Table 1.2					
Length of time in United States vs. Definition of prenatal care					
	What does 'prenatal care' mean to you?				
Length of time in United States	Doctor	Family and Friends	Diet and Exercise	Lay Health Workers	Midwives
1 (<4yrs)	20.3%	23.3%	15.8%	13.3%	28.1%
2 (>4,<6yrs)	19.5%	16.3%	17.5%	23.3%	21.9%
3 (>6,<10yrs)	31.7%	23.3%	31.6%	33.3%	31.3%
4 (>10yrs)	28.5%	37.2%	35.1%	30%	18.8%

Results from table 1.2 were stratified by Mexico being the reported country of birth, yielding table 1.3. According to this table, there is no significant trend with years resided in the United States and a perception of *Promotoras* as prenatal care. However, there is a noteworthy decrease in the perception of midwives as a component of prenatal care associated with increased time residing in the United States.

Table 1.3			
Length of time in United States vs. Definition of prenatal care for Mexican Immigrants			
	What does 'prenatal care' mean to you?		
Length of Time in the United States	Diet and Exercise	Lay Health Workers	Midwives
1 (<4yrs)	32.1%	10%	35%
2 (>4,<6yrs)	32.3%	33.3%	23.8%
3 (>6,<10yrs)	42.9%	33.3%	16.7%
4 (>10yrs)	47.6%	19.4%	12.9%
Pearson Chi ²	2.65	4.87	0.18
*p	0.49	4.08	0.25

*p<0.05 is considered statistically significant.

Table 1.4 shows gender compared to beliefs concerning what prenatal care entails. A high Pearson chi² value and p<0.05 are used to show statistical significance between gender and reported definition of prenatal care.

Table 1.4					
Gender vs. Definition of prenatal care					
	What does 'prenatal care' mean to you?				
Gender	*Doctor	Family and Friends	Diet and Exercise	Lay Health Workers	Midwives
Female	90.5%	29.5%	38.1%	21.9%	22.8%
Male	71.4%	42.9%	52.3%	23.8%	19.1%

* Pearson chi²= 5.73, p=0.017

Table 1.5 compares the country of origin to infant mortality of the sample. The sample sizes of Honduras and the United States are miniscule and results cannot be taken for face value. However, the larger size of the Mexican sample lends more validity to the resulting numbers.

Table 1.5					
Infant Mortality stratified by country of origin					
Country of Origin	Percent of population	Infant mortality	No infant mortality	Mortality number	Sample size
Mexico	70.3%	20.4%	79.57%	19	93
Guatemala	15.5%	6.3%	93.8%	1	16
Honduras	7.1%	25%	75%	2	8
United States	3.2%	33.3%	66.6%	1	3

*Pearson chi²= 10.6, p=0.56

Table 1.6 shows the results of infant mortality against number pregnancies. The Spearman's rho value of 0.357 and a p value of p<0.00001 show a high statistical probability that infant mortality increases with the number of pregnancies.

These results serve as a validation measure for the questionnaire instrument.

*Table 1.6							
Total number of pregnancies vs. Experienced child death within first year of child's life							
	Number of pregnancies experienced						
	1	2	3	4	5	6	7
Experienced child's death	4.8%	10.9%	21.2%	27.3%	60%	100%	50%
N (total respondents)	42	55	33	11	5	3	2

*Pearson $\chi^2= 30.5$, $p<0.0001$

Table 1.7 shows that there is no significant correlation between equating going to see the doctor as part of prenatal care and whether the mother experienced an infant mortality.

Table 1.7		
Doctor as part of prenatal care vs. Experienced child death within first year of child's life		
	Infant Mortality	
Doctor is part of prenatal care	Yes	No
Yes	19.1%	80.9%
No	23.1%	76.9%

*Pearson $\chi^2= 0.15$, $p=0.93$

Discussion

The hypothesis was: *Immigrant Latina mothers in the United States begin prenatal care at a delayed time in their pregnancy due to cultural traditions, beliefs, and experiences which do not necessitate that clinical prenatal care begin early in the pregnancy period.* Because such a high proportion of respondents held the belief that prenatal care should begin in the first trimester (97.3%), it was not statistically feasible to compare the early prenatal care seeking behaviors to other factors in order to directly test the hypothesis. The numerical strength of respondents favoring early prenatal care would

not allow for significant correlations to be found, however, other associations are helpful in determining the correctness of the stated hypothesis.

Though this high number (97.3%) interfered with mathematical correlations, it is an encouraging number for what it represents. Ninety seven percent of respondents held healthy beliefs regarding the timeline for beginning prenatal care. The potential exists for these women to become informal *promotoras* in their community as they promote healthy prenatal health care practices. The 97.3% is most likely an overestimate of the population, as the responses were taken from health care clinics. This statistic is still higher than was expected and shows a hopeful trend in the Latino community of East Tennessee.

It is of interest that only 30% of respondents listed support from family and friends as a component of prenatal care. With the importance of interpersonal relationships within the Latino culture and the emphasis placed on community structure, one would expect to see a larger percentage for this response^{21,23}. Respondents who had been in the United States the shortest time and who originated from Mexico infrequently equated *promotoras* with prenatal care (table 1.3). This finding is not consistent with the general literature, as *promotoras* have a strong presence in Mexico²⁴. Conversely, Mexican immigrants who lived in the United States for longer showed a higher association of *promotoras* with prenatal care. It may be possible that either the prevalence of *promotoras* in certain areas of Mexico may be gradually fading and thus the newer immigrants arrive with a decreased perception of *promotoras* as part of prenatal care, or it could be that Mexican families who are migrating to the United States have an increased perception of clinical care as a large component of prenatal care.

From the same table (table 1.3), a strong association is observed between duration of time in the United States and the view of midwives as a component of prenatal care. Recent immigrants from Mexico (<4 years) reported a strong belief (35%) that midwives were part of prenatal care. As length of time in the United States increased, respondents reported less of a belief that midwives were part of prenatal care; 12.9% of those here greater than 10 years equated midwives with prenatal care. This data hints at a strong cultural change in prenatal care beliefs with increased time in the United States. It seems that as Mexican immigrants become more acculturated to the United States, parts of their culture fade, such as the role of midwives, which play a vital role in the prenatal care system of Mexico²⁴. It is precisely this erosion of culture that McGlade wishes to prevent by integrating clinical care with cultural, informal prenatal care. However, the above-stated association does not seem to impact the actual receipt of prenatal care, as Mexican respondents were prone to seeking prenatal care early. An operational definition for the terms *promotoras* and *parteras* was not included in the survey, and thus it is not clear if there was a clear separation of these ideas from respondents.

On the other hand, the effects of acculturation do not appear to be wholly negative. Respondents claimed that 62.7% of women in their native countries sought prenatal care during the first trimester of pregnancy, while 88.1% of these respondents sought first trimester prenatal care in the United States. Likewise, 18.3% of respondents stated that women in the respondents' native country only sought care at birth, while 0.7% of respondents stated that women in their native country only sought care at birth. In this instance, with increased length of time in the United States (average of 8 years), Latinos were more likely to participate in early prenatal care. Additionally, table 1.3

shows that with increased time in the United States, respondents more strongly equated good diet and exercise with prenatal care. Though this trend was not found to be statistically significant, the results remain notable and form somewhat of a paradox. It has been recorded that as Latinos become more acculturated to the United States they will take on the adverse smoking, drinking, and poor exercise and eating habits characteristic of Americans, however, these results show that as Latino immigrants become more acculturated they more strongly equate good diet and exercise with prenatal care. It is not known whether the respondents' lifestyles reflect this sentiment or not.

The gradual decline of midwives as a perceived part of prenatal care does not seem to impact the receipt of prenatal care, and increased time in the United States showed an increase in early prenatal care participation; however, a highly inflated estimated infant mortality rate was found in these same Mexican Americans. Table 1.5 compares infant mortality to country of origin. Mortality rates for the United States and Honduras may be artificially inflated due to the low population sample sizes, however the mortality rate for Guatemala, and more specifically Mexico, holds higher validity. The mean number of times a respondent was pregnant was 2.33. If this number is multiplied by the 93 Mexican respondents, this totals an estimated 216.7 potential births for this population. Infant mortality would then become $19/216.7$, or 88/1000. It must be duly noted for these calculations that respondents did not supply the number of births they had experienced; only the number of pregnancies, number of children who died before one year of life, and number of miscarriages. Hence, infant mortality cannot be calculated, and can only be estimated by the above calculations.

According to the CIA World Factbook, Mexico's national infant mortality rate is currently 18.4/1000²⁵. The Mexican mortality rate in the United States is currently 5.5/1000, while Tennessee has an infant mortality rate of 8.6/1000, and the general U.S. populace has an infant mortality rate of 6.2/1,000²⁵⁻²⁷. Hence, from the self-reported mortality statistics from Mexican immigrants, the infant mortality rate is inflated 478% from current Mexico infant mortality, and is inflated 1600% from infant mortality of Mexicans residing in the United States. This inflated mortality constitutes a serious health crisis. The Mexican women in this sample sought prenatal care early as did the rest of the respondents, and there were no significant differences which separated the Mexican respondents from other Latinos in the sample. The determining factors for this estimated infant mortality rate are unclear, however it does not appear to be related to how early a mother sought prenatal care.

Table 1.4 shows a significant correlation ($p=0.017$) between gender and whether seeing a physician is seen as part of prenatal care. Latinos live in a predominately patriarchal society where the decisions of males assert heavy influence upon the activities in which females are allowed to partake²⁸⁻²⁹. 71% of males attribute a visit to the doctor as prenatal care as opposed to 90% of females making this association. This might become a concern if males are consistently making decisions regarding prenatal care. If this is the case, it would become a feasible postulation to claim that the influential opinions of Latino males may in part contribute to the lower levels of early prenatal care seen nationally in the recent immigrant Latino population.

Also from table 1.4, 29.5% of women and 42.9% of men equate support from family and friends as a component of prenatal care. As mentioned before, the Latino

tradition of women helping women and *marianismo*, selfless devotion to the maternal role, would seem to be in contrast to this finding. Considering these cultural values, one would have expected a much larger percentage of women to consider support from family and friends as an essential part of prenatal care. Another interesting correlation is that table 1.7 shows that of those who believed going to see the doctor was part of prenatal care, 19.1% experienced an infant mortality as compared to 23.1% who experienced an infant mortality but did not equate a physician with prenatal care. The data also shows that of those who did not experience an infant mortality, there was no significant difference in their beliefs about physicians as part of prenatal care ($p=0.91$).

From the responses, 97.3% of respondents believed that a woman should go to see the doctor to begin prenatal care during her first trimester. 88.1% of respondents went to begin prenatal care with a doctor during their first trimester, and 86% said that going to see a physician was part of their individual prenatal care construct. These percentages are high, and may or may not reflect the belief structure of East Tennessee's Latino population. Some selection biases may have influenced these results as well. The targeted population consisted of Latinos who were attending a local low-cost or cost-free health care clinic. Such clinics are less likely to be utilized by Latinos who are wealthier, most likely more educated, and may have different beliefs regarding health care, however, by sampling respondents from a clinical setting, it can safely be said that the selected population places importance on health care. This population is not necessarily indicative of the general East Tennessee Latino population. Again, responses from a clinical setting should reflect a higher importance attributed to health care than the general Latino population. This bias is supported by the resulting percentages.

Other biases are noteworthy as well. By distributing surveys in a clinical setting to recent immigrants, response bias becomes a factor. The survey was designed to be clearly autonomous and anonymous, however, circumstances limited the effectiveness of such design. When surveys were administered by clinical personnel, assurances of anonymity might have been viewed with skepticism. Likewise, distributing a survey in a clinical setting amongst official documenting paperwork may cause the respondent to become skeptic about the anonymity of the survey. Taking these factors into consideration, an unknown proportion of responses are thought to reflect the answer choice the respondent believed would be most favorably received (a non-true response) as opposed to the answer choice which reflected the respondent's unbiased beliefs. It is impossible to know which responses are influenced in this way; however, surveys administered by personnel rather than self-administered are believed to contain a higher proportion of non-true responses than autonomous surveys.

Postulations about associations from the collected data set can only be taken so far. The large majority of participants responded overwhelmingly supporting early prenatal care both in thought and in self-reported action. This strong response limited the finding of possible correlations linking beliefs regarding appropriate onset time for prenatal care to the remaining data set. Thus it becomes difficult to say from the resulting data whether cultural beliefs about prenatal care influence the receipt of such care for recent Latino immigrants. In lieu of directly testing the stated hypothesis, correlations between country of origin, beliefs concerning prenatal care, and infant mortality were examined to indirectly study the hypothesis. Many respondents reported experiencing an access barrier of some form when trying to acquire health care, independent of the

amount of time they had lived in the United States. As respondents became more acculturated to the United States as measured by years lived in the United States, their association of *promotoras* and support from family and friends as being components of prenatal health care gradually faded, however, with increased acculturation respondents reported an increased belief that going to see the doctor and midwives as well as good diet and exercise were vital components of prenatal care.

Thus, from this smaller data set it appears that acculturation has both a positive and negative effect upon Latino prenatal care awareness. It is beneficial that acculturated Latinos are more prone to believe a doctor should be seen earlier in the pregnancy period yet we also see the erosion of key elements of the Latino culture which play a large role in the informal prenatal care system of this culture. It would be beneficial if follow-up studies were conducted which focused on relating the strength of Latino informal prenatal care over time to the exploitation of clinical, formal prenatal care.

Appendix A

- How old are you?

N= 155

Mean = 30 years

Mean women= 28 years

Mean men= 35 years

Median = 29.5 years

Range = 16-58 years

- What gender are you?

	N= 135
Male	17.8%
Female	82.2%

- Where were you born?

	N=155
Mexico	70.3%
Guatemala	15.5%
Honduras	7.1%
Other	3.9%
United States	3.2%

- How long have you lived in the United States?

N= 155

Mean = 8.1years

Median = 6.0 years

Range = 0.75 – 52 years

- How many times have you been pregnant? (Men, please answer this question about your children's mother)

Mean = 2.3

Median = 2

Range = 1 - 7

- How long has it been since you were last pregnant? (Men, please answer this question about your children’s mother)

Mean = 44.5 months
 Median = 1 year, 1 month
 Range = 0.5 – 28 months

- Which, if any, problems or troubles do you have when you try to go see a doctor? (many answers are okay)

	N= 141
Transportation	21.3%
Medical Insurance	43.3%
Finances	36.2%
Language barriers	40.4%
Long waiting times	12.1%
Distance from clinic	29.8%
Cannot leave work	9.2%
Unclear where to go	9.9%
Other problems	0.7%

- What do the words “prenatal care” mean to you? (many answers are okay)

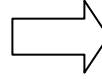
	N= 143
Going to see a doctor	86%
Support from family and friends	30.1%
Good diet and exercise	39.9%
<i>Promotoras</i> (lay health workers)	21%
Midwives	22.4%
Other	7.9%

- Did you see a doctor when you were pregnant?

	N= 137
Yes	97.8%
No	2.2%

- How soon do you think a woman should first go to see the doctor if she is pregnant?

	N=149
Month 1	65.1%
Month 2	20.1%
Month 3	12.1%
Month 4	1.3%
Month 5	0.7%
Month 9	0.7%

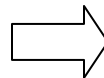


Trimester	
1	97.3%
2	2%
3	0.7%

Mean = 1.5
Median = 1

- When did YOU first go to see the doctor when you found out you were pregnant?

	N= 144
Month 1	34%
Month 2	33.3%
Month 3	20.8%
Month 4	3.5%
Month 5	0.7%
Month 6	4.9%
Month 7	1.4%
Month 9	0.7%
Only at Birth	0.7%



Trimester	
1	88.1%
2	9.1%
3 or birth	2.8%

Mean = 2.2
Median = 2

- Does going to see the doctor help your unborn baby be healthy?

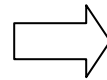
	N= 147
Yes	99.3 %
No	0.7%

- How much does seeing a doctor help your unborn baby to be healthy?

	N= 148
Very much	93.9%
Much	3.4%
A little	2%
No Difference	0.7%

- In the country where you were born, when do pregnant women go see the doctor?

	N= 126
Month 1	27.8%
Month 2	13.5%
Month 3	21.4%
Month 4	7.9%
Month 5	1.6%
Month 6	4.8%
Month 7	0.8%
Month 8	1.6%
Month 9	2.4%
Only at Birth	18.3%



Trimester	
1	62.7%
2	14.3%
3	4.8%
Birth	18.3%

Mean = 3.84

Median = 3

- Does this effect your decision of when you go see a doctor?

	N= 131
Yes	18.3%
No	81.7%

- How many of your children died before one year old?

	N= 127
None	79.5%
One or more	20.5%

- Have you had any miscarriages?

	N= 107
None	79.3%
One or more	20.7%

Form W

In the intention of documenting adherence to proper guidelines for survey administration, we, _____, give written approval that the survey created by Craig Bleakney has permission to be circulated within our business of operation. The survey will be made available Monday, February 10, 2010 and will be in circulation until Monday, March 22, 2010, upon which time Craig Bleakney will collect the surveys in person from our facility. We understand that no personal identifying information of respondents is to be documented in conjunction with this survey.

_____ Craig Bleakney _____ Date

_____ Facility Director _____ Date

Form X

El objetivo de este cuestionario es entender mejor como usted (o su esposa) se cuida cuando está embarazada. Esto nos ayudará a entender si hay otras formas en que los doctores y hospitales pueden ayudarla y a su bebé a estar más sana. Esta encuesta privada es para hombres y mujeres entre 18-51 años. Por favor circule las opciones que respondan a su caso. Algunas preguntas pueden tener más de una respuesta. Las respuestas serán guardadas privadamente, y ninguna información puede ser usada para identificarle.

1. ¿Cuántos años tiene?
 - a. _____ años
2. ¿Cuál es su género?
 - a. Mujer
 - b. Hombre
3. ¿Dónde nació usted?
 - a. México b. Honduras c. Nicaragua d. Guatemala e. El Salvador
 - f. Puerto Rico g. Costa Rica h. Panamá i. Columbia j. Estados Unidos
 - k. Otro: _____
4. ¿Cuánto tiempo ha vivido usted en los Estados Unidos?
_____ años
5. ¿Cuántas veces ha estado embarazada usted? (Hombres, por favor contesten esta pregunta sobre la madre de sus niños)
_____ veces
6. ¿Hace cuánto fue su último embarazo? (Hombres, por favor contesten esta pregunta sobre la madre de sus niños)
_____ meses
_____ años
7. ¿Qué problemas tiene usted cuándo usted trata de ir a ver a un doctor?
(Esta pregunta puede tener varias respuestas)
 - a. Transporte (un modo de llegar al doctor)
 - b. Problemas de seguro médico
 - c. Problemas de dinero
 - d. Problemas de comunicación (Inglés o Español)
 - e. Esperar al doctor demasiado tiempo
 - f. La clínica o el hospital esta demasiado lejos de su casa
 - g. Problemas para salirse del trabajo para ir a la cita
 - h. No sabe a donde ir
 - i. Otro: _____

8. ¿Qué significa “cuidado prenatal” para usted? (Esta pregunta puede tener varias respuestas)
- Ir a ver a un doctor
 - Apoyo de familia y amigos
 - Dieta buena y ejercicio
 - Promotoras
 - Parteras
 - Otro: _____
9. ¿Vio usted a un doctor cuándo usted estaba embarazada?
- Si
 - No
10. ¿Para cuándo piensa usted que una mujer debería ir primero a ver al doctor si está embarazada?
- mes 1
 - mes 2
 - mes 3
 - mes 4
 - mes 5
 - mes 6
 - mes 7
 - mes 8
 - mes 9
 - sólo para el parto
11. ¿Qué tan pronto fue USTED primero a ver al doctor cuando supo que estaba embarazada? (Hombres, por favor contesten esta pregunta sobre la madre de sus niños)
- mes 1
 - mes 2
 - mes 3
 - mes 4
 - mes 5
 - mes 6
 - mes 7
 - mes 8
 - mes 9
 - sólo para el parto
12. ¿Ir a ver al doctor durante el embarazo ayuda a su bebé a estar sano?
- Si
 - No
13. ¿Cuánto ayuda a su bebe el que usted visite al doctor?
- Mucho
 - Algo
 - Un Poco
 - Ninguna diferencia
14. ¿En el país dónde usted nació, cuando es que las mujeres embarazadas van a ver al doctor?
- mes 1
 - mes 2
 - mes 3
 - mes 4
 - mes 5
 - mes 6
 - mes 7
 - mes 8
 - mes 9
 - sólo para el parto
15. ¿Afecta esto su decisión de cuándo usted va a ver a un doctor?
- Si
 - No
16. ¿Cuántos de sus niños murieron antes de un año? Incluso abortos espontáneos.
- _____
17. ¿Ha tenido usted algún aborto espontáneo?
- _____

Muchas gracias por contestar este cuestionario. Sus resultados nos ayudarán a aprender a asistirle mejor.

Form Y

The purpose of this survey is to better understand how you take care of yourself when you are pregnant. This will help us to understand if there are ways for doctors and hospitals to help you and your baby be more healthy. This private survey is for men and women ages 18-51. Please circle the choices you feel are the best answers for you. Some questions can have more than one answer. Answers will be kept private, and no information can be used to identify you.

1. How old are you?
 - a. _____ years
2. What gender are you?
 - a. Female
 - b. Male
3. Where were you born?
 - a. Mexico b. Honduras c. Nicaragua d. Guatemala e. El Salvador
 - f. Puerto Rico g. Costa Rica h. Panama i. Columbia j. United States
 - k. Other: _____
4. How long have you lived in the United States?
_____ years
5. How many times have you been pregnant? (Men, please answer this question about your children's mother)
_____ times
6. How long has it been since you were pregnant? (Men, please answer this question about your children's mother)
_____ months
_____ years
7. Which, if any, problems or troubles do you have when you try to go see a doctor? (many answers are okay)
 - a. Transportation (a way to get to the doctor)
 - b. A problem with insurance
 - c. A problem with money
 - d. Communication problems
 - e. Waiting for the doctor too long
 - f. The clinic or hospital is too far from your home
 - g. It is a problem to leave work to go to the appointment
 - h. Don't know where to go
 - i. Other: _____

8. What do the words “prenatal care” mean to you? (many answers are okay)
 - a. Going to see a doctor
 - b. Support from family and friends
 - c. Good diet and exercise
 - d. Community lay health workers
 - e. Midwives
 - f. Other: _____
9. Did you see a doctor when you were pregnant?
 - a. Yes
 - b. No
10. How soon do you think a woman should first go to see the doctor if she is pregnant?
 - a. month 1 b. month 2 c. month 3 d. month 4 e. month 5
 - f. month 6 g. month 7 h. month 8 I. month 9 j. only at delivery
11. When did YOU first go to see the doctor when you found out you were pregnant?
 - a. month 1 b. month 2 c. month 3 d. month 4 e. month 5
 - f. month 6 g. month 7 h. month 8 I. month 9 j. only at delivery
12. Does going to see the doctor help your unborn baby be healthy?
 - a. Yes
 - b. No
13. How much does seeing a doctor help your unborn baby to be healthy?
 - a. Very much
 - b. Some
 - c. A little
 - d. It does not make a difference
14. In the country where you were born, when do pregnant women go see the doctor?
 - a. month 1 b. month 2 c. month 3 d. month 4 e. month 5
 - f. month 6 g. month 7 h. month 8 I. month 9 j. only at delivery
15. Does this effect your decision of when you go see a doctor?
 - a. Yes
 - b. No
16. How many of your children died before one year old?

17. Have you had any miscarriages?

Thank you very much for taking this survey. Your results will help us learn how to better assist you.

Form Z

In the intention of documenting adherence to proper guidelines for survey administration, The surveys are to be administered to both MEN and WOMEN ages 18-50.

If a patient is able to take the survey on their own, they should be allowed to. We prefer for participants to self-administer the survey.

If a patient requires help, administrators of the survey may only repeat the question multiple times. In order to eliminate bias, please do not explain questions to patients.

Administrators must not upon any occasion influence the answer choice of the participant or tell them which answer to choose.

If a patient cannot write and requires an administrator for this function; administrators, please write only what the participant directly relates to you. If you have knowledge of the participant which you believe conflicts with the answer, please continue to allow the participant to answer however they wish.

Completed surveys should be returned to the Manila envelope they were delivered in, and this envelope should be kept in a secure location until only Craig Bleakney is able to retrieve them in person.

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