Drinking Water Sources among Latino vs. Non-Latino Children and Their Parents

BY

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THESIS

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This thesis is dedicated to my little girl, Cecilia, who gave up many hours of playtime with mommy during its writing.

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LIST OF ABBREVIATIONS

AAPD	American Academy of Pediatric Dentistry
ADA	American Dental Association
CI	Confidence Interval
HS/GED	High School/General Education Development
FET	Fisher's Exact Test
IRB	Institutional Review Board
L-b-L	Linear by Linear Association
OR	Odds Ratio
PG	Postgraduate
PI	Principal Investigator
PPM	Parts Per Million
UG	Undergraduate
UIC COD	University of Illinois at Chicago, College of Dentistry
US	United States
VS	Versus
X^2	Chi Square

SUMMARY

The objective of this study was to determine the main drinking water sources for Latino parents and their children in Chicago and surrounding areas, as well as to determine differences between Latino and Non-Latino groups' drinking water sources. Parents and legal guardians were asked to complete an anonymous survey with questions on demographics and drinking water sources. The survey was provided in both English and Spanish versions. Data collection was completed at 213 surveys obtained, comprised of 115 Latino and 98 Non-Latino respondents.

Data analysis showed no significant differences between Latino and Non-Latino respondents in terms of bottled water consumption ($p > 0.05$). Both groups reported high bottled water use. Significant differences were found between the groups in reported use of filtered water. Latino respondents, particularly those born outside of the U.S., reported a greater use of filtered tap water for consumption and cooking than all other groups. In addition, Latino respondents, especially those born outside of the U.S., reported that their children drink more filtered tap water and less unfiltered tap water than all other groups.

1. INTRODUCTION

1.1 Background Information

The exposure to optimally fluoridated tap water has been shown to have benefits in caries prevention in the pediatric dental patient. Many cities across the U.S. have community water fluoridation with the purpose of reducing caries risk in young children; this addition of fluoride to drinking water is considered one of the greatest public health accomplishments of the 20th century (CDC, MMWR 2008). Healthy People 2020 objective #OH-13 is to have 79.6% of the U.S. population receiving optimally fluoridated community water to aid in the prevention of dental caries (Healthy People 2020). The addition of optimal fluoride levels to community water has shown a decrease in caries rate over time (CDC, MMWR 1999a). Review of data shows that caries has dropped by 20-40% in fluoridated communities as compared to non-fluoridated communities (Newbrun 1989), and that the cost of dental treatment for a Medicaid eligible child living in a non-fluoridated community is likely to be twice as high as for a Medicaid eligible child living in a fluoridated community (CDC, MMWR 1999b). The exposure to fluoridated water and its caries preventing benefit may now be questionable with the rise of bottled water usage (ADA 2012b) over the past two decades (Beverage Marketing 2012, Rodwan 2008).

1.2 Increase of Bottled Water Usage

Bottled water usage grew two-fold in the 1990s (Beverage Marketing Corporation as cited in ADA 2012a) and sales and marketing have risen considerably, yet the exposure to fluoride from bottled water is unclear due to the varying amounts of fluoride from sources used in bottled waters (ADA 2012a). Most bottled waters have been noted to contain less than the optimally recommended levels of fluoride, and yet some others may contain more than the recommended levels (Lalumandier et al 2000). A study out of West Virginia, by Johnson et al in

2003, found that of a convenience sample of 65 brands of bottled water, only 12.3% contained optimal levels of fluoride (Johnson et al 2003). The Johnson study concluded that bottled water should not be the main source of drinking water due to its lack of optimal fluoridation.

1.3 Water Filtration Systems

There has also been an increase in the use of at-home water purification systems due to the public's distrust in the safety of their drinking water (Jobson et al 2000). Two studies by Brown et al 1991 and Jobson 2000, found that at-home filtration systems can greatly reduce the fluoride levels in optimally fluoridated community drinking water, with the most dramatic reductions occurring with activated carbon filter, reverse osmosis, and distillation (Brown et al 1991, Jobson et al 2000).

1.4 Increased Caries Risk to Minorities/Latinos

In light of this increased consumption of bottled water and filtered water, the caries preventing benefit of fluoride for children may be at risk. It can be inferred that a child whose primary source of drinking water is from a bottle, or an at-home filtration system, may not be benefiting from caries preventing fluoride. Minority children, in particular children of immigrant parents, are at an increased risk for dental caries (Vargas et al 1998, Skeie et al 2006, Skeie et al 2010). These children might be those who would most benefit by drinking optimally fluoridated water. However, questions have been raised as to whether Latinos are less likely to drink tap water than non-Latinos. If Latinos consume bottled water and filtered water (with fluoride removed), the Latino child's exposure to fluoridated tap water and fluoride is likely to be suboptimal. This could potentially place the Latino child at an even greater risk for developing dental caries.

1.5 Purpose of the Study

The purpose of this study was:

1. To determine the main drinking water sources for Latino parents and their children in Chicago and surrounding areas;
2. To determine differences in drinking water sources and consumption between ethnic groups and other demographics.

1.6 Hypotheses

H_{01}: There is no difference between Latino parents and parents belonging to other ethnic groups in their self-reported consumption of bottled water, filtered tap water, boiled tap water, and unfiltered tap water.

H_{02}: There is no difference between Latino children and children belonging to other ethnic groups in their parental-reported consumption of bottled water, filtered tap water, boiled tap water, and unfiltered tap water.

H_{A1}: Latino parents are more likely than parents belonging to other ethnic groups to report that they consume more bottled water, more filtered tap water, more boiled tap water, and less unfiltered tap water.

H_{A2}: Latino parents are more likely than parents belonging to other ethnic groups to report that their children consume more bottled water, more filtered tap water, more boiled tap water, and less unfiltered tap water.

2. REVIEW OF THE LITERATURE

2.1 Methods of Review

A review of the literature on the topic of Latinos and their drinking water sources was done through four PubMed searches using MeSH terms: 1. Hispanic Americans, Water, and Drinking; 2. Hispanic Americans, Water Supply, and Attitude to Health; 3. Hispanic Americans and Water Supply; and 4. Culture, Water Supply, and United States as well as regular Pub Med searches with keywords "bottled water" and "tap water"; restricted to within the last decade and in the US. The search terms yielded a total of 26 articles. Related citations of the most relevant identified article were also reviewed. After excluding articles due to duplicate results, no information on ethnicity, and inappropriateness of topic, the number of articles was reduced to five.

2.2 Previous Studies Comparing Drinking Water Sources among Latinos and Non-Latinos

Hobson et al (2007), from the University of Utah, were interested in analyzing differences in water sources between ethnic groups. A cross-sectional, convenience sample survey study done by Hobson et al showed that of 216 parents surveyed in a public health center in Salt Lake City, UT over a two-week period, 43.9% of Latino children never drink tap water compared to 20.9% of Non-Latino children. The study also found that Latino parents were less likely to give tap water to their children and also less likely to drink tap water themselves than non-Latinos. However, the Hobson study did not find any difference between Latino and Non-Latino non-tap water drinkers in terms of bottled water and filtered water usage (Hobson et al 2007).

A second study, conducted in Tucson, AZ, by Williams et al (2001), used random-digit dialing telephone surveys (cross-sectional population survey) of 1183 Tucson residents to

determine if differences exist between non-Hispanic whites and Hispanics, living in Tucson, in regards to sources of drinking water. This study found that Latinos were four times more likely than Non-Latinos to use bottled water over tap or filtered water as their water source (Williams et al 2001).

Yet another study, by Scherzer et al (2010), in which cross-sectional focus group interviews of 46 subjects were done in a rural California community, also found that most subjects interviewed almost always used bottled water or filtered tap water as their source of drinking water. The study also found that when not at home, participants, both parent and child, most frequently drank bottled water (Scherzer et al 2010).

A more recently published cross-sectional survey study, Gorelick et al (2011), in which parents of patients in an urban/suburban Wisconsin emergency department were surveyed, also found that more Latinos drink bottled water than non-Latino whites (Gorelick et al 2011). However this study found that this was true not only for Latinos, but also for African Americans; thus, concluding that minorities in general are more likely to give bottled water to their children.

A study out of an urban adolescent -care community hospital clinic in Philadelphia, PA, was also reviewed. This study, by Huerta-Saenz et al (2011), aimed to investigate the preferences for drinking water and beliefs about bottled water's taste, clarity and purity of bottled water as compared to tap water among the adolescent patients and their parents. This study made mention of their subject's ethnicities, with 79% African American, 3% White, 9% Latino, and 9% Other. In their results, Huerta-Saenz et al mentioned that there were no significant differences in drinking water preferences between African Americans and other non-African American study participants. However, with a large majority (79%) of their subjects being African American, this

study was not able to compare at great length the drinking water sources and opinions on drinking water among differing ethnicities (Huerta-Saenz et al 2011).

Four of the five studies reviewed also made mention of Latinos fearing that tap water would make them sick, or disliking the taste, smell, safety, or color of tap water. Hobson et al also concluded that many Latinos fear that tap water will cause illness. Of the participants in the Hobson et al study, 42% of Latinos vs. only 12% of Non-Latinos avoid water because they believe it will make them sick (Hobson et al 2007). Williams et al found that Latinos were 53% less likely than Non-Latinos to accept the taste of their tap water (Williams et al 2001), while Scherzer et al found that a majority of their participants felt that the water would make them ill because of its bad taste, odor, or color (Scherzer et al 2010). The Gorelick study's results showed that 20% of Latinos compared to just 9.3% non-Latino whites agreed with the statement "bottled water is safer than tap water" (Gorelick et al 2011).

2.3 Limitations to Previous Studies

More studies are needed to determine if this avoidance of tap water is truly the case for Latino parents and their children in the United States, since the above-mentioned studies are not without certain limitations. The Hobson study could have included bias into their results; since the survey site was a predominantly Latino public health center and the majority of their participants (80.5%) were Latino (Hobson et al 2007). Scherzer et al had limitations in its weak study design. The study in a rural community in California had a small sample size (N=46) and was a qualitative, focus group design that included only Latino participants in their study and made no comparison to non-Latinos (Scherzer et al 2010). The study out of Tucson, AZ by Williams et al had more strength due to its large samples size (1183) and its well-designed randomized survey, however, the results and subsequent conclusion drawn cannot be generalized

to other regions, for example, a mid-western city such as Chicago (Williams et al 2001). All these studies took place in the Southwest or Western U.S., which can have unique factors relative to that region.

The Williams and Scherzer studies conducted their research in areas that had histories of water contamination. The study site where Scherzer conducted the focus group interviews had documented water contamination in the past, of which the population was aware (Scherzer et al 2010). Williams stated in his study that, "Tucson's Hispanic population is acutely aware about the water quality issues. Water contamination in this area dates back to the 1950's" (Williams et al 2001). The history of known water contamination by the studies' participants, in both the Williams and Scherzer studies, may have significantly impacted the participant's drinking water behavior. A new study in a larger mid-western city, without a history of tap water contamination, may not yield the same results.

The Gorelick study seems to place a twist or caveat into the hypothesis that Latinos drink less tap water than other ethnic groups. Their finding was that indeed Latinos drink less tap water than their non-Latino white cohorts, but also that African American's as well drink less tap water when compared to other ethnic groups. Moreover, the Gorelick study concluded that, although in other studies immigrant status has been considered a determinant in bottled water drinking preferences, this did not prove to be a factor in their study. However, in reviewing the respondent's characteristics, it was noted that among the Latino subjects, only 4% completed the surveys in Spanish (Gorelick et al 2011). That number may reflect the possibility that a majority of the Latino subjects in this study are no longer new immigrants to this country and may no longer exhibit apprehension toward safety of drinking tap water that a recently arrived Latino immigrant may have. More studies in diverse settings, along with further evaluation of other

possible confounding factors are needed to determine if Latinos truly drink less tap water than other ethnic groups, or if this is a general contemporary finding among all ethnic groups in society today.

3. METHODOLOGY

3.1 Study Site

The study site was selected to be the undergraduate and post-graduate Pediatric Dentistry Clinics at the University of Illinois at Chicago College of Dentistry (UIC COD UG & PG Pediatric Dentistry Clinics).

3.2 Study Subjects

The study sample was derived from a convenience sample of parents, or legal guardians, of patients 5 years of age or younger seeking dental care, both urgent and comprehensive, at UIC COD UG &PG Pediatric Dentistry Clinics.

The program, epi_infostatcal from EpiInfo Version 6 November 1993, was used to calculate an acceptable sample size. The Hobson study, whose survey results of children never drinking tap water of 22% in Non-Latinos (unexposed group) versus 44% in Latinos (exposed group), was referenced to determine the anticipated outcome. Assuming a ratio of 1:1 (Non-Latino to Latino), power at 80%, and confidence interval of 95%, a minimum sample size of 78 in each group (Non-Latino to Latino) for a total of 156 subjects was calculated to be necessary to ensure a strong study. If the ratio of Non-Latino to Latino sample subjects had been 1:2, then a minimum sample size of 60 Non-Latino subjects and 119 Latino subjects for a total of 179 subjects would be needed.

The Latino, according to the U.S. census report, is any person who can trace their origin back to any Latin American nation (including Puerto Rico) or Spain, and /or any person who identifies them-self as Latino (Humes et al 2010). The survey provided options for the respondent to self-select which group they most identified with; the choice of whether to be classified as Latino was largely up to the respondent.

3.3 Sample Size

The minimum sample size goal of 200 was set. Data collection was started November 30th, 2011 and completed on January 20th, 2012 with reaching the minimal sample size goal.

3.4 Recruitment Process

Parents and legal guardians were asked by the pediatric dentistry clinic front desk staff, volunteer research pre-dental student, and PI if they were interested in participating in the survey. Potential participants were approached in the waiting room, either prior to or following a dental appointment. An invitation to participate was extended verbally, and in print at the top of the survey (Appendix A & B) for the parent/guardian to read, and they were also verbally informed of their right to refuse participation, and that the study was anonymous.

3.5 Survey Tool

The study consisted of a 4-page, 23-item paper survey based on general demographic questions, questions regarding drinking water sources, and knowledge of fluoride (Appendix A & B). The survey was modified from the questionnaire from the work of Huerta-Saenz et al (Huerta-Saenz et al 2011). Upon request, the lead author shared their study's questionnaire, which was unavailable in its entirety through their published study.

The questionnaire was also provided in Spanish, as translated by PI in conjunction with Dr. Ricardo Mendoza (both native Spanish speakers), for those participants that preferred the questionnaire in Spanish (Appendix B). Dental assistant, Brenda Roman, and Dr. Rosa Ortega back translated the questionnaire to ensure accuracy in translation.

The questionnaire did not use any identifiers or medical information linking to the parent or patient. There was minimal risk involved to the patients and parents. The participants placed the completed surveys into a labeled box in the registration area of the clinics or handed it back

to the staff. The address was provided on the survey in case the parent took the survey away from the clinic and preferred to mail it in. A refusal rate was not collected since it was considered a potential burden to the front desk staff, since they were also in charge of the regular patient intake and scheduling.

Approval of the study was obtained from the University of Illinois at Chicago Institutional Review Board, protocol #2001-0945 (Appendix C).

3.6 Analysis

Once survey collection was complete, the responses were entered in SPSS 19.0 for Windows® (Microsoft Office, 2003) SP3 database, on a computer protected by password. The entered data was recoded for correct entry (Appendix E). Data imputation was conducted for several variables. Any survey that had no answer for the question on ethnic group, but was completed in Spanish, or answered that they were born in a Latin-American country were considered Latino. A lack of response for age of respondent or age of child, were given the mean age of respondents or mean age of child respectively. Missing information for highest level of education was given the most responded answer choice, HS/GED. If the respondent's country of birth was left blank, and the survey was completed in Spanish, it was given an answer of Latin America. If the child's country of birth was not answered, and the parent/legal guardian said they were born in the U.S., the child was given the U.S. as country of birth.

Variables were recoded to simplify and strengthen the analysis by condensing variable categories. Respondent Country of Birth was collapsed into Latin America, U.S., and Other. Child Country of Birth was collapsed into U.S. and Other. Child's Type of Dental Insurance was collapsed into Medicaid and Not Medicaid, the latter of which included two missing responses.

New variables were created in order to help statistical analysis and also to help further explain outcomes. The variables "Respondent Born Outside of U.S." (yes, no), "Survey Language" (Spanish, English), and "LatStatUSStat10" (Latinos Born Outside of U.S., All Others), were created for the aforementioned purpose.

The demographic distributions of the respondents by Latino vs. Non-Latino were compared using Chi-square. The differing distribution types of sources of drinking water by Latino vs. Non-Latino were analyzed using Chi-square as well. Any p-values of $< .10$ (approaching significance) were included as covariates in logistic regression analysis, OR with 95% CI. A correlation analysis using Spearman's Rho was run to exclude highly correlated covariates that might mask each other in the logistic regression analysis.

4. RESULTS

4.1 Number of Respondents

Recruitment of subjects took place from November 30th, 2011 to January 20th, 2012. Data collection was completed, with 213 surveys obtained, 115 Latino and 98 Non-Latino respondents. As previously mentioned, a refusal rate was not collected.

4.2 Descriptive Data for Respondents (Latino/Non-Latino)

The demographic characteristics of the respondents stratified into "Latino vs. Non-Latino" are listed in Table I. The majority of respondents for both the Latino and Non-Latino respondents are female and the biological parent. The Latino respondents are younger with a mean age of 31.0 years, while the mean age for the Non-Latino respondents is 33.1 years. The majority of the Latino respondents completed HS/GED, while a greater number of the Non-Latino respondents completed college. For both the Latino and Non-Latino respondents, more live in Chicago than not; however, within the Latino group the percentage that live within Chicago is overwhelmingly larger than those that do not live in Chicago when compared to the Non-Latino respondents. Nearly three-fourths of Latinos (74.8%), state that they were born outside of the U.S., while only 33.7% of the Non-Latino respondents were born outside of the U.S. The survey was mostly completed in English, with the majority of the Latino respondents completing the survey in Spanish, and all of the Non-Latino respondents completing an English survey.

Of the Latino children, the majority was 1 to 3 year-olds and boys, while for the Non-Latino children, the majority was 5 years old and split almost evenly between boys and girls. In both Latino and Non- Latino respondent groups the majority of the children received Medicaid, however the Latino rate receiving Medicaid, when compared to not receiving Medicaid, was

higher than for Non-Latino respondents. The children were overwhelmingly born in the U.S. for both the Latino and Non-Latino respondents.

TABLE I
DEMOGRAPHICS OF LATINO VS NON-LATINO RESPONDENTS

Variable	Total N (%)	Latino N (%)	Non-Latino N (%)	Test P-value
Respondent				
Respondent	213(100%)	115 (54.0%)	98 (46.0%)	FET, .580
Parent	207 (97.2%)	112 (97.4%)	95 (96.9%)	
Legal Guardian/Caregiver/Other	6 (2.8%)	3 (2.6%)	3 (3.1%)	
Respondent Age	213 (100%)	115 (54.0%)	98 (46.0%)	T-test, .035
Mean (SD)	31.9 (7.2)	31.0 (7.0)	33.1 (7.4)	
Respondent Gender	213 (100%)	115 (54.0%)	98 (46.0%)	FET, .239
Female	175 (82.2%)	92 (80.0%)	83 (84.7%)	
Respondent group	213 (100%)	115 (54.0%)	98 (46.0%)	X^2, .000
White	45 (21.1%)	0 (.0%)	45 (45.9%)	
African-American	42 (19.7%)	0 (.0%)	42 (42.9%)	
Latino	115 (54.0%)	115 (100%)	0 (.0%)	
Asian	8 (3.8%)	0 (.0%)	8 (8.2%)	
Other	3 (1.4%)	0 (.0%)	3 (3.1%)	
Respondent Country of Birth (recode)	213 (100%)	115 (54.0%)	98 (46.0%)	X^2, .000
Latin American	89 (41.8%)	87 (75.8%)	2 (2.0%)	
US	94 (44.1%)	28 (24.3%)	66 (67.3%)	
Other	30 (14.1%)	0 (.0%)	30 (30.6%)	
Respondent Born Outside of US (recode)	213 (100%)	115 (54.0%)	98 (46.0%)	FET, .000
Yes	119 (55.9%)	86 (74.8%)	33 (33.7%)	
No	94 (44.1%)	29 (25.2%)	65(65.3%)	
Respondent Drank Water Straight From Tap in Home Country (recode)	204 (100%)	112 (54.9%)	92 (45.1%)	FET, .023
Yes	169 (82.8%)	87 (77.7%)	82 (89.1%)	
No	35 (17.2%)	25 (22.3%)	10 (10.9%)	
Respondent achieved level of education	213 (100%)	115 (54.0%)	98 (46.0%)	X^2, .000
< HS	25 (11.7%)	22 (19.1%)	3 (3.1%)	
HS/GED	104 (48.8%)	66 (57.4%)	39 (38.8%)	
College	84 (39.6%)	27 (23.5%)	57 (58.2%)	
Respondent Lives in Chicago	213 (100%)	115 (54.0%)	98 (46.0%)	FET, .021
Yes	136 (63.8%)	81 (70.4%)	55 (56.1%)	
No	77 (36.2%)	34 (29.6%)	43 (43.9%)	
Respondent Survey Language	213 (100%)	115 (54.0%)	98 (46.0%)	FET, .000
Spanish	74 (34.7%)	74 (64.3%)	0 (0.0%)	
English	139 (65.3%)	41 (35.7%)	98 (100%)	
Child				
Child's age	213 (100%)	115 (54.0%)	98 (46.0%)	T-test, .022
Mean (SD)	3.8 (1.1)	3.7 (1.1)	4.0 (1.1)	
Child's age group (recode)	213 (100%)	115 (54.0%)	98 (46.0%)	X^2, .030
1-3 y.o.	78 (36.6%)	51 (44.3%)	27 (27.6%)	
4 y.o	65 (30.5%)	33 (28.7%)	32 (32.7%)	
5 y.o.	70 (32.9 %)	31 (27.0%)	39 (39.8%)	
Child Gender	213 (100%)	115 (54.0%)	98 (46.0%)	FET, .131
Female	88 (41.3%)	43 (37.4%)	45 (45.5%)	
Child Country of Birth (recode)	207 (100%)	110 (53.1%)	97 (46.9%)	FET, .568
USA	199 (96.1%)	106 (96.4%)	93 (95.9%)	
Other	8 (3.9%)	4 (3.6%)	4 (4.1%)	
Child dental insurance	211 (100%)	113 (53.6%)	98 (46.4%)	X^2, .025
Private	3 (1.4%)	0 (.0%)	3 (3.1%)	
Medicaid	199 (94.3%)	111 (98.2%)	88 (89.8%)	
Other	9 (4.3%)	2 (1.8%)	7 (7.1%)	
Child dental insurance (recode)	213 (100%)	115 (53.0%)	98 (46.0%)	X^2, .044
Medicaid	199 (93.4%)	111 (96.5%)	88 (89.8%)	
Not Medicaid (includes 2 missing response)	14 (6.6%)	4 (3.5%)	10 (10.2%)	

FET = Fisher's Exact Test (1- sided)
X^2 = Chi-Square

4.3 Descriptive Data for Respondents (Latino Born Outside of US/All Others)

The demographic characteristics of the respondents stratified into "Latino Born Outside U.S. vs. All Others" are listed in Table II. The majority of respondents, for both the Latino born in U.S. and All Others, is again female and the biological parent. There was no longer a statistically significant difference in age among the respondents, in contrast to when the respondents were stratified into "Latino vs. Non-Latino". The majority of the Latino born outside of the US respondents completed high-school/GED, while a greater number of All Other respondents completed college. For both the Latino born outside the U.S. and All Other respondents, more live in Chicago than not; however, for the Latino born outside U.S., three-fourths live within Chicago versus just over half of All Other respondents. The majority of the Latino born outside U.S. respondents completed the survey in Spanish, whereas only one of All Others (a Latino born in the U.S.) completed the survey in Spanish.

There were no longer statistically significant differences in terms of age of child, and child's type of dental insurance among "Latino Born Outside of the US vs. All Others", as there were between "Latinos vs. Non-Latinos". Both group's children were predominantly receiving Medicaid.

TABLE II
DEMOGRAPHICS OF LATINO BORN OUTISDE OF US VS ALL OTHER RESPONDENTS

Variable	Total N (%)	Latino Born Outside US N (%)	All Others N (%)	Test P-value
Respondent				
Respondent	213(100%)	86 (40.4%)	127 (59.6%)	FET, .464
Parent	207 (97.2%)	83 (96.5%)	124 (97.6%)	
Legal Guardian/Caregiver/Other	6 (2.8%)	3 (3.5%)	3 (2.4%)	
Respondent Age	213 (100%)	86 (40.4%)	127 (59.6%)	T-test, .749
Mean (SD)	31.9 (7.2)	31.7 (7.2)	32.1 (7.3)	
Respondent Gender	213 (100%)	86 (40.4%)	127 (59.6%)	FET, .125
Female	175 (82.2%)	67 (77.9%)	108 (85.0%)	
Respondent group	213 (100%)	86 (40.4%)	127 (59.6%)	X^2, .000
White	45 (21.1%)	0 (.0%)	45 (35.4%)	
African-American	42 (19.7%)	0 (.0%)	42 (33.1%)	
Latino	115 (54.0%)	86 (100%)	29 (22.8%)	
Asian	8 (3.8%)	0 (.0%)	8 (6.3%)	
Other	3 (1.4%)	0 (.0%)	3 (2.4%)	
Respondent Country of Birth (recode)	213 (100%)	86 (40.4%)	127 (59.6%)	X^2, .000
Latin American	89 (41.8%)	86 (100%)	3 (2.4%)	
US	94 (44.1%)	0 (.0%)	94 (74.0%)	
Other	30 (14.1%)	0 (.0%)	30 (23.6%)	
Respondent Born Outside of US (recode)	213 (100%)	86 (40.4%)	127 (59.6%)	FET, .000
Yes	119 (55.9%)	86 (100%)	33 (26.0%)	
No	94 (44.1%)	0 (.0%)	94 (74.0%)	
Respondent Drank Water Straight From Tap in Home Country (recode)	204 (100%)	85 (41.7%)	119 (58.3%)	FET, .000
Yes	169(82.8%)	60 (70.6%)	109 (91.6%)	
No	35 (17.2%)	25 (29.4%)	10 (8.4%)	
Respondent achieved level of education	213 (100%)	86 (40.4%)	127 (59.6%)	X^2, 000
< HS	25 (11.7%)	20 (23.3%)	5 (3.9%)	
HS/GED	104 (48.8%)	52 (60.5%)	52 (40.9%)	
College	84 (39.6%)	14 (16.3%)	70 (55.1%)	
Respondent Lives in Chicago	213 (100%)	86 (40.4%)	127 (59.6%)	FET, .002
Yes	136 (63.8%)	65 (75.6%)	71 (55.9%)	
No	77 (36.2%)	21 (24.4%)	56 (44.1%)	
Respondent Survey Language	213 (100%)	86 (40.4%)	127 (59.6%)	FET, .000
Spanish	74 (34.7%)	73 (84.9%)	1 (0.8%)	
English	139 (65.3%)	13 (15.1%)	126 (99.2%)	
Child				
Child's age	213 (100%)	86 (40.4%)	127 (59.6%)	T-test, .257
Mean (SD)	3.8 (1.1)	3.7 (1.1)	3.9 (1.1)	
Child's age group (recode)	213 (100%)	86 (40.4%)	127 (59.6%)	X^2, .339
1-3 y.o.	78 (36.6%)	36 (41.9%)	42 (33.1%)	
4 y.o	65 (30.5%)	26 (30.2%)	39 (30.7%)	
5 y.o.	70 (32.9 %)	24 (27.9%)	46 (36.2%)	
Child Gender	213 (100%)	86 (40.4%)	127 (59.6%)	FET, .195
Female	88 (41.3%)	32 (37.2%)	56 (44.1%)	
Child Country of Birth (recode)	207 (100%)	82 (39.6%)	125 (60.4%)	FET, .319
USA	199 (96.1%)	80 (97.6%)	119 (95.2%)	
Other	8 (3.9%)	2 (2.4%)	6 (4.8%)	
Child dental insurance	211 (100%)	84 (39.8%)	127 (60.2%)	X^2, .191
Private	3 (1.4%)	0 (.0%)	3 (2.4%)	
Medicaid	199 (94.3%)	82 (97.6%)	117 (92.1%)	
Other	9 (4.3%)	2 (2.4%)	7 (5.5%)	
Child dental insurance (recode)	213 (100%)	86 (40.4%)	127 (59.6%)	X^2, .262
Medicaid	199 (93.4%)	82 (95.3%)	117 (92.1%)	
Not Medicaid (includes 2 missing responses)	14 (6.6%)	4 (4.7%)	10 (7.9%)	

FET = Fisher's Exact Test (1- sided)
X^2 = Chi-Square

4.4 Type of Water Used for Drinking and Cooking at Home

Table III shows that in the different types of home drinking water choices given for respondent and child (straight from tap (unfiltered), filtered from tap, boiled from tap, and bottled water) there were some major differences among Latino and Non-Latino respondents and their children. One area that did not differ was the use of bottled water. For both the Latino and Non-Latino respondents and children, bottled water was the predominant drinking water source used – all greater than 70%. No statistical significance between Latino and Non-Latinos respondents and children was found in terms of bottled water usage. However, difference was found in usage of filtered water. Approaching half of Latino respondents (48.6%) and their children (45.9%) drink filtered tap water, whereas about a quarter of the Non-Latino respondents (27.6%) and their children (27.6%) do. The Non-Latino children were more often reported to drink more unfiltered tap water than did the Latino children, 32.7% vs. 20.7% respectively.

Among the choices for different types of cooking water used at home (straight from tap (unfiltered), filtered from tap, boiled from tap, and bottled water) by the respondents, statistically significant differences were noted between Latino and Non-Latino respondents' use of cooking with filtered tap water and bottled water. Latino respondents were about twice as likely as Non-Latino respondents to cook with filtered tap water, 42.3% vs. 22.4%. Latino respondents were more than twice as likely as Non-Latino respondents to cook with bottled water (15.3% vs. 6.1%); however, the total number of responses for cooking with bottled water was small.

TABLE III
TYPE OF WATER ADULT AND CHILD DRINK, TYPE OF WATER ADULT COOKS WITH (YES RESPONSES)

Variable (number of respondents)	Total N (%)	Latino N (%)	Non-Latino N (%)	Test (P-value)
Type of Water Adult Drinks at Home	209 (100%)	111 (53.1%)	98 (46.9%)	
Straight from Tap (unfiltered)	60 (28.7%)	27 (24.3%)	33 (33.7%)	FET, .091
Filtered from Tap	81 (38.8%)	54 (48.6%)	27 (27.6%)	FET, .001
Boiled from Tap	10 (4.8%)	3 (2.7%)	7 (7.1%)	FET, .120
Bottled Water	162 (77.5%)	84 (75.7%)	78 (79.6%)	FET, .305
Type of Water Child Drinks at Home	209 (100%)	111 (53.1%)	98 (46.9%)	
Straight from Tap (unfiltered)	55 (26.3%)	23 (20.7%)	32 (32.7%)	FET, .036
Filtered from Tap	78 (37.3%)	51 (45.9%)	27 (27.6%)	FET, .004
Boiled from Tap	11 (5.3%)	5 (4.5%)	6 (6.1%)	FET, .414
Bottled Water	163 (78.0%)	86 (77.5%)	77 (78.6%)	FET, .492
My Child Never Drinks Water	1 (0.5%)	0 (0.0%)	1 (1.0%)	FET, .469
Type of Water Adult Cooks with at Home	209 (100%)	111 (53.1%)	98 (46.9%)	
Straight from Tap (unfiltered)	131 (62.7%)	65 (58.6%)	66 (67.3%)	FET, .121
Filtered from Tap	69 (33.0%)	47 (42.3%)	22 (22.4%)	FET, .002
Boiled from Tap	29 (13.9%)	12 (10.8%)	17 (17.3%)	FET, .122
Bottled Water	23 (11.0%)	17 (15.3%)	6 (6.1%)	FET, .027

FET = Fisher's Exact Test (1- sided)

4.5 Analysis of Hypothesis #1: Respondents Self-Reported Consumption of Drinking Water

The statistical analysis of the respondents "yes" responses for varying drinking water sources (bottled water, filtered tap water, boiled tap water, and unfiltered tap water), when compared between Latino and Non-Latino respondents, shows that there is no statistically significant difference in bottled water usage. However, there is a statistically significant difference between Latino and Non-Latino respondents' reported consumption of filtered tap water ($P < .01$) and reported usage of filtered tap water for cooking ($P < .01$). Latino respondents reported a greater consumption of filtered tap water, and also a greater usage of filtered tap water for cooking than did Non-Latinos. Thus, the first null hypothesis (H_{01}) is accepted in terms of no difference between bottled water consumption between Latinos and Non-Latinos, but would be rejected in terms of a difference between Latinos' and Non-Latinos' consumption of filtered tap water.

4.6 Analysis of Hypothesis #2: Child's Parental-Reported Consumption of Drinking Water

The statistical analysis of the child's parental-reported "yes" responses for varying drinking water sources (bottled water, filtered tap water, boiled tap water, and unfiltered tap

water), when compared between Latino and Non-Latino respondents, shows again that there is no statistically significant difference in bottled water usage. However, there are statistically significant differences between Latino and Non-Latino children's parental-reported consumption of filtered tap water ($P < .01$) and consumption of unfiltered tap water ($P = .036$). Thus, the second null hypothesis (H_{01}) is partially accepted in terms of no difference in bottled water consumption between Latino and Non-Latino's children, but partially rejected due to a difference between Latino and Non-Latino children's parental-reported consumption of filtered tap water. A greater percentage of Latino respondents reported their children drink filtered tap water, while a greater percentage of Non-Latino respondents reported their children drink unfiltered tap water.

4.7 Correlation Analysis of Covariates

Table IV shows the results of Spearman's Rho correlation analysis of covariates. A variable with a correlation coefficient greater than 0.7 was considered highly correlated, and thus was excluded from the adjusted logistic regression analyses due to redundancy. The analysis showed that the variable "Latino vs. Non-Latino" was highly correlated with the variables "Respondent's Ethnicity" and "Latino Born Outside of U.S. vs. All Others". These two variables were excluded from the "Latino vs. Non-Latino" adjusted logistic regression analysis. Although the variable Survey Language did not have a correlation coefficient greater than 0.7, it had a significant correlation coefficient of 0.674. Additionally, only Latino respondents filled out the Spanish-language surveys; thus, "Survey Language" was also excluded from the "Latino vs. Non-Latino" adjusted logistic regression analysis. The variable "Latino Born Outside of U.S. vs. All Others" was highly correlated with the variables "Survey Language", "Latino vs. Non-Latino", and "Adult Born Outside of U.S". These aforementioned variables were excluded from the adjusted "Latino Born Outside of U.S. vs. All Others" logistic regression.

TABLE IV
CORRELATION ANALYSIS OF COVARIATES

			Ethnic Group	Survey Language	Latino vs. Non-Latino	Drank Water From Tap in Home Country	Latinos Born Outside of U.S. vs. All Others	Adult Born outside of US
Spearman's Rho	Ethnic Group	Correlation Coefficient	1.000	.496**	**.737****	-.296**	.560**	.332**
		Sig. (2-tailed)	.	.000	.000	.000	.000	.000
		N	213	213	213	204	213	213
	Survey Language	Correlation Coefficient	.496**	1.000	**.674****	-.592**	**.867****	.629**
		Sig. (2-tailed)	.000	.	.000	.000	.000	.000
		N	213	213	213	204	213	213
	Latino vs. Non-Latino	Correlation Coefficient	**.737****	**.674****	1.000	-.350**	**.760****	.413**
		Sig. (2-tailed)	.000	.000	.	.000	.000	.000
		N	213	213	213	204	213	213
	Drank Water From Tap in Home Country	Correlation Coefficient	-.296**	-.592**	-.350**	1.000	-.633**	**-.888****
		Sig. (2-tailed)	.000	.000	.000	.	.000	.000
		N	204	204	204	204	204	204
	Latino Born Outside of U.S. vs. All Others	Correlation Coefficient	.560**	**.867****	**.760****	-.633**	1.000	**.731****
		Sig. (2-tailed)	.000	.000	.000	.000	.	.000
		N	213	213	213	204	213	213
	Adult Born Outside of US	Correlation Coefficient	.332**	.629**	.413**	**-.888****	**.731****	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.
		N	213	213	213	204	213	213

**. Correlation is significant at the 0.01 level (2-tailed).

4.8 Multivariate Analysis of Predictors of Respondent's Use of Filtered Water

Table V displays demographic variables that were possible predictors for the respondent drinking filtered tap water. Of the respondents that said they drink filtered water, 41.3% were females vs. only 27.0% males. Respondents who said they drink filtered tap water were mostly Latino, born outside of the U.S., did not drink straight out of the tap (unfiltered tap water) in their home country, had less than high-school education, live in Chicago, and completed a Spanish survey.

TABLE V
RESPONDENT USE OF FILTERED TAP WATER BY DEMOGRAPHICS

Variable	Total N (%)	Respondent Drinks Filtered Water (yes) N(%)	Test P-value
Respondent			
Respondent	209 (100%)	81 (38.8%)	FET, .249
Parent	203 (97.1%)	80 (39.4%)	
Legal Guardian/Caregiver/Other	6 (2.9%)	1 (16.7%)	
Respondent Age	209 (100%)	81 (38.8%)	T-test, .954
Mean (SD)	32.0 (7.2)	31.9 (6.9)	
Respondent Gender	209 (100%)	81 (38.8%)	FET, .075
Female	172 (82.3%)	71 (41.3%)	
Male	37 (17.7%)	10 (27.0%)	
Respondent Group	209 (100%)	81 (38.8%)	X^2, .027
White	45 (21.5%)	12 (26.7%)	
African-American	42 (20.1%)	13 (31.0%)	
Latino	111 (53.1%)	54 (48.6%)	
Asian	8 (3.8%)	2 (25.0%)	
Other	3 (1.4%)	0 (.0%)	
Respondent Group (recode)	209 (100%)	81 (38.8%)	FET, .001
Latino	111 (53.1%)	54 (48.6%)	
Non-Latino	98 (46.9%)	27 (27.6%)	
Respondent Group (recode)	209 (100%)	81 (38.8%)	FET, .001
Latino Born Outside of US	83 (39.7%)	44 (53.0%)	
All Others	126 (60.3%)	37 (29.4%)	
Respondent Country of Birth (recode)	209 (100%)	81 (38.8%)	X^2, .001
Latin American	85 (40.7%)	46 (54.1%)	
US	94 (45.0%)	25 (26.6%)	
Other	30 (14.4%)	10 (33.3%)	
Respondent Born Outside of US	209 (100%)	81 (38.8%)	FET, .001
Yes	116 (55.5%)	56 (48.3%)	
No	93 (44.5%)	25 (26.9%)	
Respondent Drank Water Straight From Tap in Home Country (recode)	200 (100%)	81 (40.5%)	X^2, .189
Yes	165 (82.5%)	64 (38.8%)	
No	35 (17.5%)	17 (48.6%)	
Respondent Achieved Level of Education	209 (100%)	81 (38.8%)	L-b-L, .048
< HS	22 (10.5%)	13 (59.1%)	X^2, .087
HS/GED	103 (49.3%)	40 (38.8%)	
College	84 (40.2%)	28 (33.3%)	
Respondent Lives in Chicago	209 (100%)	81 (38.8%)	FET, .071
No	76 (36.4%)	24 (31.6%)	
Yes	133 (63.6%)	57 (42.9%)	
Respondent Survey Language	209 (100%)	81 (38.8%)	FET, .006
Spanish	70 (33.5%)	36 (51.4%)	
English	139 (66.5%)	45 (32.4%)	
Child			
Child's Age	209 (100%)	81 (38.8%)	T-test, .942
Mean (SD)	3.8 (1.1)	3.8 (1.1)	
1-3 y.o.	77 (36.8%)	27 (35.1%)	X^2, .571
4 y.o.	64 (30.6%)	28 (43.8%)	
5 y.o	68 (32.5%)	26 (38.2%)	
Child Gender	209 (100%)	81 (38.8%)	FET, .410
Female	87 (41.6%)	35 (40.2%)	
male	122 (58.4%)	46 (37.7%)	
Child Country of Birth	207 (100%)	79 (38.2%)	FET, .142
USA	199 (96.1%)	74 (37.2%)	
Other	8 (3.9%)	5 (62.5%)	
Child Dental Insurance	207 (100%)	79 (38.2%)	X^2, .939
Private	3 (1.4%)	1 (33.3%)	
Medicaid	195 (94.2%)	75 (38.5%)	
Other	9 (4.3%)	3 (33.3%)	
Child Dental Insurance (recode)	209 (100%)	81 (38.8%)	FET, .476
Medicaid	195 (93.3%)	75 (38.5%)	
Not Medicaid	14 (6.7%)	6 (42.9%)	

FET = Fisher's Exact Test (1- sided)
L-b-L = Linear-by-Linear Association
X^2 = Chi-Square

Logistic regression results adjusting for confounding variables for respondent's use of filtered tap water are displayed in Table VI. These possible confounding variables with p-values of <.10 were used for logistic regression analysis. The crude logistic regression with only the variable "Latino vs. Non-Latino" shows that being Latino is a strong predictor of drinking filtered tap water. Being Latino has greater odds of drinking filtered tap water than the odds for Non-Latinos. However, when the logistic regression was adjusted for the other possible confounding variables (Gender, Born Outside of U.S., Level of Education, and Lives in Chicago), it was noted that the confidence interval of the odds-ratio crossed the null and the likelihood of being Latino predicting drinking filtered tap water did not reach statistical significance. However, another logistic regression using the created variable "Latino Born outside of U.S. vs. All Others", instead of "Latino vs. Non-Latino", even when adjusting for the other confounding variables, shows that Latinos born outside the U.S. were more than two and a half times as likely as all other respondents to drink filtered tap water.

TABLE VI
LOGISTIC REGRESSION ANALYSIS: RESPONDENT DRINKS FILTERED TAP WATER

Crude
Latino vs. Non-Latino OR 2.49 (95% CI 1.40-4.44)
Adjusted*
Latino vs. Non-Latino OR 1.74 (95% CI 0.87-3.43)
*covariates < .1 = Respondent Gender, Respondent Born Outside US, Level of Education, Lives in Chicago
Crude
Latino Born Outside US vs. All Others OR 2.71 (95% CI 1.52- 4.83)
Adjusted*
Latino Born Outside US vs. All Others OR 2.59 (95% CI 1.35- 4.98)
*covariates < .1 = Respondent Gender, Level of Education, Lives in Chicago

4.9 Multivariate Analysis of Predictors of Child's Use of Filtered Water

Table VII displays demographic variables that were possible predictors for the child drinking filtered tap water. Of the respondents that said their child drinks filtered water, 40.1% were females vs. only 24.3% males. Respondents who said their child drinks filtered tap water were mostly Latino, born outside of the U.S., had less than high-school education, live in Chicago, and completed a Spanish survey.

TABLE VII
CHILD DRINKS FILTERED TAP WATER BY DEMOGRAPHICS

Variable	Total N (%)	Child Drinks Filtered Water (yes) N (%)	Test P-value
Respondent			
Respondent	209 (100%)	78 (37.3%)	FET, .600
Parent	203 (97.1%)	76 (37.4%)	
Legal Guardian/Caregiver/Other	6 (2.9%)	2 (33.3%)	
Respondent Age	209 (100%)	78 (37.3%)	T-test, .727
Mean (SD)	32.0 (7.2)	31.6 (6.8)	
Respondent Gender	209 (100%)	78 (37.3%)	FET, .051
Female	172 (82.3%)	69 (40.1%)	
Male	37 (17.7%)	9 (24.3%)	
Respondent Group	209 (100%)	78 (37.3%)	X^2, .068
White	45 (21.5%)	12 (26.7%)	
African-American	42 (20.1%)	13 (31.0%)	
Latino	111 (53.1%)	51 (45.9%)	
Asian	8 (3.8%)	2 (25.0%)	
Other	3 (1.4%)	0 (.0%)	
Respondent Group (recode)	209 (100%)	78 (37.3%)	X^2, .004
Latino	111 (53.1%)	51 (45.9%)	
Non-Latino	98 (46.9%)	27 (27.6%)	
Respondent Group (recode)	209 (100%)	78 (37.3%)	FET, .003
Latino Born Outside of U.S.	83 (39.7%)	41 (49.4%)	
All Others	126 (60.3%)	37 (29.4%)	
Respondent Country of Birth (recode)	209 (100%)	78 (37.3%)	X^2, .004
Latin American	85 (40.7%)	43 (50.6%)	
US	94 (45.0%)	25 (26.6%)	
Other	30 (14.4%)	10 (33.3%)	
Respondent Born Outside of US	209 (100%)	78 (37.3%)	FET, .004
Yes	116 (55.5%)	53 (45.7%)	
No	93 (44.5%)	25 (26.9%)	
Respondent Drank Water From Tap in Home Country (recode)	200 (100%)	78 (39.0%)	X^2, .370
Yes	165 (82.5%)	63 (32.8%)	
No	35 (17.5%)	15 (42.9%)	
Respondent Achieved Level of education	209 (100%)	78 (37.3%)	L-b-L, .044
< HS	22 (10.5%)	12 (54.5%)	X^2, .114
HS/GED	103 (49.3%)	40 (38.8%)	
College	84 (40.2%)	26 (31.0%)	
Respondent Lives in Chicago	209 (100%)	78 (37.3%)	FET, .040
No	76 (36.4%)	22 (28.9%)	
Yes	133 (63.6%)	56 (42.1%)	
Respondent Survey Language	209 (100%)	78 (37.3%)	FET, .027
Spanish	70 (33.5%)	33 (47.1%)	
English	139 (66.5%)	45 (32.4%)	
Child			
Child's Age	209 (100%)	78 (37.3%)	T-test, .205
Mean (SD)	3.8 (1.1)	3.9 (1.0)	
1-3 y.o.	77 (36.8%)	24 (31.2%)	X^2, .357
4 y.o.	64 (30.6%)	27 (42.2%)	
5 y.o	68 (32.5%)	27 (39.7%)	
Child Gender	209 (100%)	78 (37.3%)	FET, .189
Female	87 (41.6%)	36 (41.4%)	
Male	122 (58.4%)	42 (34.4%)	
Child Country of Birth	207 (100%)	76 (36.7%)	FET, .123
USA	199 (96.1%)	71 (35.7%)	
Other	8 (3.9%)	5 (62.5%)	
Child Dental Insurance	207 (100%)	76 (36.7%)	X^2, .969
Private	3 (1.4%)	1 (33.3%)	
Medicaid	195 (94.2%)	72 (36.9%)	
Other	9 (4.3%)	3 (33.3%)	
Child Dental Insurance (recode)	209 (100%)	78 (37.3%)	FET, .430
Medicaid	195 (93.3%)	72 (36.9%)	
Not Medicaid	14 (6.7%)	6 (42.9%)	

FET = Fisher's Exact Test (1- sided)
L-b-L = Linear-by-Linear Association
X^2 = Chi-Square

The results of the logistic regression for child's use of filtered water adjusted for potential confounding variables are displayed in Table VIII. These possible confounding variables with p-values of <.10 were used for logistic regression analysis. The crude logistic regression with only the variable "Latino vs. Non-Latino" shows that being Latino is a strong predictor of having their child drink filtered tap water. The crude logistic regression shows that being Latino has greater odds of having their child drink filtered tap water than the odds for Non-Latinos' children. However, when the logistic regression was adjusted for the other possible confounding variables (Gender, Born Outside of U.S., Level of Education, and Lives in Chicago), it was noted that the confidence interval of the odds-ratio crossed the null and the likelihood of being Latino predicting drinking filtered tap water did not reach statistical significance. However, a third and fourth logistic regression using the created variable "Latino Born outside of U.S.", instead of "Latino vs. Non-Latino", even when adjusted for the other confounding variables, shows that Latinos born outside of the U.S. were more than twice as likely as all other respondents to have their child drink filtered tap water.

TABLE VIII
LOGISTIC REGRESSION ANALYSIS: CHILD DRINKS FILTERED TAP WATER

Crude
Latino vs. Non-Latino OR 2.24 (95% CI 1.25 - 3.99)
Adjusted*
Latino vs. Non-Latino OR 1.54 (95% CI 0.774 -3.06)
*covariates < .1 = Respondent Gender, Born Outside US, Level of Education, Lives in Chicago
Crude
Latino Born Outside US vs. All Others OR 2.35 (95% CI 1.32 - 4.18)
Adjusted*
Latino Born Outside US vs. All Others OR 2.12 (95% CI 1.10- 4.08)
*covariates < .1 = Respondent Gender, Level of Education, Lives in Chicago

4.10 Multivariate Analysis of Predictors of Child's Use of Unfiltered Tap Water

Table IX displays demographic variables that were possible predictors for the child drinking unfiltered tap water. Respondents who said their child drinks unfiltered tap water were mostly Non-Latino, not born outside of the U.S., completed an English survey, were almost equally divided in having completed HS/GED and college education, and live in Chicago; although the last two did not approach significance.

TABLE IX
CHILD DRINKS UNFILTERED TAP WATER BY DEMOGRAPHICS

Variable	Total N (%)	Child Drinks Unfiltered Tap Water (yes) N (%)	Test P-value
Respondent			
Respondent	209 (100%)	55 (26.3%)	FET, .501
Parent	203 (97.1%)	54 (26.6%)	
Legal Guardian/Caregiver/Other	6 (2.9%)	1 (16.7%)	
Respondent Age	209 (100%)	55 (26.3%)	T-test, .719
Mean (SD)	32.0 (7.2)	32.1 (7.8)	
Respondent Gender	209 (100%)	55 (26.3%)	FET, .311
Female	172 (82.3%)	47 (27.3%)	
Male	37 (17.7%)	8 (21.6%)	
Respondent Group	209 (100%)	55 (26.3%)	X^2, .001
White	45 (21.5%)	10 (22.2%)	
African-American	42 (20.1%)	22 (52.4%)	
Latino	111 (53.1%)	23 (20.7%)	
Asian	8 (3.8%)	0 (.0%)	
Other	3 (1.4%)	0 (.0%)	
Respondent Group (recode)	209 (100%)	55 (26.3%)	X^2, .036
Latino	111 (53.1%)	23 (20.7%)	
Non-Latino	98 (46.9%)	32 (32.7%)	
Respondent Group (recode)	209 (100%)	55 (26.3%)	FET, .003
Latino Born Outside of US	83 (39.7%)	13 (15.7%)	
All Others	126 (60.3%)	42 (33.3%)	
Respondent Country of Birth (recode)	209 (100%)	55 (26.3%)	X^2, .001
Latin American	85 (40.7%)	13 (15.3%)	
US	94 (45.0%)	40 (42.6%)	
Other	30 (14.4%)	2 (6.7%)	
Respondent Born Outside of US	209 (100%)	55 (26.3%)	FET, .001
Yes	116 (55.5%)	15 (12.9%)	
No	93 (44.5%)	40 (43.0%)	
Respondent Drank Water Straight From Tap in Home Country (recode)	200 (100%)	53 (26.5%)	FET, .005
Yes	165 (82.5%)	50 (30.3%)	
No	35 (17.5%)	3 (8.6%)	
Respondent Achieved Level of Education	209 (100%)	55 (26.3%)	X^2, .358
< HS	22 (10.5%)	3 (13.6%)	
HS/GED	103 (49.3%)	29 (28.2%)	
College	84 (40.2%)	23 (27.4%)	
Respondent Lives in Chicago	209 (100%)	55 (26.3%)	FET, .208
No	76 (36.4%)	17 (22.4%)	
Yes	133 (63.6%)	38 (28.6%)	
Respondent Survey Language	209 (100%)	55 (26.3%)	FET, .049
Spanish	70 (33.5%)	31 (18.6%)	
English	139 (66.5%)	42 (30.2%)	
Child			
Child's Age	209 (100%)	55 (26.3%)	T-test, .946
Mean (SD)	3.8 (1.1)	3.8 (1.0)	
1-3 y.o.	77 (36.8%)	18 (23.4%)	X^2, .762
4 y.o.	64 (30.6%)	18 (28.1%)	
5 y.o	68 (32.5%)	19 (27.9%)	
Child Gender	209 (100%)	55 (26.3%)	FET, .452
Female	87 (41.6%)	22 (25.3%)	
Male	122 (58.4%)	33 (27.0%)	
Child Country of Birth	207 (100%)	55 (26.3%)	FET, .604
USA	199 (96.1%)	53 (26.6%)	
Other	8 (3.9%)	2 (25.0%)	
Child Dental Insurance	207 (100%)	55 (26.3%)	X^2, .167
Private	3 (1.4%)	2 (66.7%)	
Medicaid	195 (94.2%)	52 (26.7%)	
Other	9 (4.3%)	1 (11.1%)	
Child Dental Insurance (recode)	209 (100%)	55 (26.3%)	FET, .472
Medicaid	195 (93.3%)	52 (26.7%)	
Not Medicaid	14 (6.7%)	3 (21.4%)	

FET = Fisher's Exact Test (1- sided)
X^2 = Chi-Square

Logistic regression results adjusting for confounding variables for child's use of unfiltered tap water are displayed in Table X. These possible confounding variables with p-values of < .10 were used for logistic regression analysis. The crude logistic regression with only the variable "Latino vs. Non-Latino" shows that being Latino is a protective factor against having their child drink unfiltered tap water. However, when logistic regression was adjusted for other possible confounding variables (Born Outside of U.S., Respondent Drank Tap Water in Home Country), the odds ratio at 95% confidence interval crossed the null and this association was negated. However, the third logistic regression using the created variable "Latino Born outside of U.S. vs. All Others", instead of "Latino vs. Non-Latino", shows Latinos born outside of the U.S. have an even greater protective factor over all other respondents against having their child drink unfiltered tap water, even when adjusted for possible confounding variables.

TABLE X
LOGISTIC REGRESSION ANALYSIS: CHILD DRINKS UNFILTERED TAP WATER

Crude
Latino vs. Non-Latino OR 0.54 (95% CI 0.29 – 1.01)
Adjusted*
Latino vs. Non-Latino OR 1.10 (95% CI 0.51 -2.31)
*covariates < .1 = Born Outside US, Respondent Drank Tap Water in Home Country
Crude
Latino Born Outside US vs. All Others OR 0.37 (95% CI 0.19 -0.75)
Adjusted*
Latino Born Outside US vs. All Others OR 0.48 (95% CI 0.22 -0.92)
* covariates < .1 = Respondent Drank Tap Water in Home Country

4.11 Multivariate Analysis of Predictors of Respondent Cooking with Filtered Tap Water

Table XI displays variables that were possible predictors for the respondent cooking with filtered tap water. Respondents who said they cook with filtered tap water were mostly Non-Latino, born outside of the U.S., did not drink straight from the tap in their home country, completed a Spanish survey, and had children in the 1-3 year-old age group.

TABLE XI
RESPONDENT COOKS WITH FILTERED TAP WATER BY DEMOGRAPHICS

Variable	Total N (%)	Adult Cooks w/ Filtered Water (yes) N (%)	Test P-value
Respondent			
Respondent	209 (100%)	69 (33.0%)	FET, .354
Parent	203 (97.1%)	68 (33.5%)	
Legal Guardian/Caregiver/Other	6 (2.9%)	1 (16.7%)	
Respondent Age	209 (100%)	69 (33.0%)	T-test, .920
Mean (SD)	32.0 (7.2)	31.9 (7.0)	
Respondent Gender	209 (100%)	69 (33.0%)	FET, .307
Female	172 (82.3%)	55 (32.0%)	
Male	37 (17.7%)	14 (37.8%)	
Respondent Group	209 (100%)	69 (33.0%)	X^2, .012
White	45 (21.5%)	13 (28.9%)	
African-American	42 (20.1%)	6 (14.3%)	
Latino	111 (53.1%)	47 (42.3%)	
Asian	8 (3.8%)	3 (37.5%)	
Other	3 (1.4%)	0 (.0%)	
Respondent Group (recode)	209 (100%)	69 (33.0%)	X^2, .002
Latino	111 (53.1%)	47 (42.3%)	
Non-Latino	98 (46.9%)	22 (22.4%)	
Respondent Group (recode)	209 (100%)	69 (33.0%)	FET, .001
Latino Born Outside of US	83 (39.7%)	38 (45.8%)	
All Others	126 (60.3%)	31 (24.6%)	
Respondent Country of Birth (recode)	209 (100%)	69 (33.0%)	X^2, .001
Latin	85 (40.7%)	39 (45.9%)	
US	94 (45.0%)	19 (20.2%)	
Other	30 (14.4%)	11 (36.7%)	
Respondent Born Outside of US	209 (100%)	69 (33.0%)	FET, .001
Yes	116 (55.5%)	50 (43.1%)	
No	93 (44.5%)	19 (20.4%)	
Respondent Achieved Level of Education	209 (100%)	69 (33.0%)	X^2, .534
< HS	22 (10.5%)	8 (36.4%)	
HS/GED	103 (49.3%)	37(35.9%)	
College	84 (40.2%)	24 (28.6%)	
Respondent Lives in Chicago	209 (100%)	69 (33.0%)	FET, .448
No	76 (36.4%)	26 (34.2%)	
Yes	133 (63.6%)	43 (32.3%)	
Respondent Drank Water From Tap In Home Country (recode)	200 (100%)	69 (34.5%)	X^2, .091
Yes	165 (82.5%)	53 (32.1%)	
No	35 (17.5%)	16 (45.7%)	
Respondent Survey Language	209 (100%)	69 (33.0%)	FET, .024
Spanish	70 (33.5%)	30 (42.9%)	
English	139 (66.5%)	39 (28.1%)	
Child			
Child's Age	209 (100%)	69 (33.0%)	T-test, .163
Mean (SD)	3.8 (1.1)	3.6 (1.1)	
1-3 y.o.	77 (36.8%)	31 (40.3%)	L-b-L, .052
4 y.o.	64 (30.6%)	21 (32.8%)	X^2, .149
5 y.o	68 (32.5%)	17 (25.0%)	
Child Gender	209 (100%)	69 (33.0%)	FET, .407
Female	87 (41.6%)	30 (34.5%)	
Male	122 (58.4%)	39 (32.0%)	
Child Country of Birth	207 (100%)	67 (32.4%)	FET, .236
USA	199 (96.1%)	63 (31.7%)	
Other	8 (3.9%)	4 (50.0%)	
Child Dental Insurance	207 (100%)	67 (32.4%)	X^2, .482
Private	3 (1.4%)	0 (.0%)	
Medicaid	195 (94.2%)	64 (32.8%)	
Other	9 (4.3%)	3 (33.3%)	
Child Dental Insurance (recode)	209 (100%)	78 (37.3%)	FET, .517
Medicaid	195 (93.3%)	64 (32.8%)	
Not Medicaid	14 (6.7%)	5 (35.7%)	

FET = Fisher's Exact Test (1- sided)
L-b-L = Linear-by-Linear Association
X^2 = Chi-Square

Logistic regression results of adjusting for confounding variables for respondent cooking with filtered tap water are displayed in Table XII. These possible confounding variables with p-values of <.10 were used for logistic regression analysis. The crude logistic regression showed that being Latino has greater odds of cooking with filtered tap water than the odds for Non-Latinos. However, when the logistic regression was adjusted for the other possible confounding variables (Born Outside of U.S., Respondent Drank Tap Water in Home Country, Child's Age), it was noted that the confidence interval of the odds-ratio crossed the null and the likelihood of being Latino predicting cooking with filtered tap water did not reach statistical significance. However, the third logistic regression using the created variable "Latino Born outside of U.S. vs. All Others", instead of "Latino vs. Non-Latino", shows that Latinos born outside of the U.S. were more than twice as likely as all other respondents to cook with filtered tap water.

TABLE XII
LOGISTIC REGRESSION ANALYSIS: RESPONDENT COOKS WITH FILTERED TAP WATER

Crude
Latino vs. Non-Latino OR 2.53 (95% CI 1.38 – 4.65)
Adjusted*
Latino vs. Non-Latino OR 1.71 (95% CI 0.87 -3 .35)
*covariates < .1 = Born Outside US, Respondent Drank Tap Water in Home Country, Child's Age
Crude
Latino Born Outside US vs. All Others OR 2.59 (95% CI 1.43 - 4.68)
Adjusted*
Latino Born Outside US vs. All Others OR 2.20 (95% CI 1.18 - 4.12)
*covariates < .1 = Respondent Drank Tap Water in Home Country, Child's Age

5. Discussion

5.1 Limitations and Strengths of the Study

One limitation to this study design is that an account of the child subject's water drinking habits may not be fully accurate if they are usually cared for by multiple caregivers, such as a mixture of parent, legal guardian, other relatives, and enrollment in daycare or pre-K programs. A second limitation to this study is that it is only collecting findings from an urban-based dental school. The experiences of a clinic-based sample, in the Chicago area, may not generalize to the United States as a whole.

This study's strength is found in that there are no similar studies focusing on Chicago. Three out of the five studies in the literature review were conducted in Southwest or Western U.S., and none were in Chicago. A second strength in this study is its strong comparison of ethnic groups as compared to previous studies.

5.2 Summary of Findings

The results of this study indicate that both Latino and Non-Latinos overwhelmingly use bottled water as their main source of drinking water at home, with no statistically significant difference between the two groups. However, a large difference was noted in the use of filtered water for drinking and cooking between the two groups, but more specifically between Latinos born outside of the U.S. and all other respondents.

The results of this study find that Latinos, in particular Latinos born outside of the U.S., drink less unfiltered tap water than Non-Latinos. This may be due to newly-emigrated Latino's perceptions that unfiltered tap water will make them ill, especially if they believe it to have bad taste, odor, or color (Scherzer et al 2010). Immigrants, in particular from Latin nations, may be fearful of the water supply if they have come from countries where the safety of tap water was

questionable due to inferior home plumbing or water treatment plants (Scherzer et al 2010, Soares et al 2002). Perhaps fear is carried over to their new homeland, thus hindering the willingness to consume unfiltered tap water. A qualitative study out of a California school district regarding the perceptions of the quality of drinking water at school, showed that fear of safety of drinking water at school was a common concern among participants. Although, no direct comparison or mention of participant's ethnicity was made, California has a large immigrant population from Mexico within their school system (Patel et al 2010).

A significant majority (99%) of the Latino born outside of the U.S. respondents in this study is from Mexico (Appendix G). Regions of Mexico have been shown to have high natural levels of arsenic and fluoride in their groundwater (Armienta et al 2008). These high levels have been associated with adverse effects on health and teeth, which may also be a possible deterrent from drinking unfiltered tap water among Mexican immigrants who may fear tap water in general (Armienta et al 2008). Mexico is second in terms of soft drink consumption in the world (Barquera et al 2010) and among the highest in terms of bottled water consumption (Merkel et al 2011). This habit of drinking bottled beverages may likely be a result of avoidance of what is believed to be an unsanitary water supply, and quite possibly may contribute to the avoidance of tap water consumption altogether in the Latino population. The avoidance of unfiltered tap water, as found in this study, is likely a cultural habit that has quite possibly transferred over to the new homeland.

One possible reason for this study's finding that there is no difference in bottled water consumption between Latinos and Non-Latinos, yet a significant difference in filtered water consumption; may be due to the high cost of bottled water. The literature has shown that Latinos are found to consume more bottled water than Non-Latino Whites, despite Latinos having a

generally lower-than- average household income (Mogelonsky et al 1997). A year's supply of bottled water costs 600 times more than a year's supply of tap water (Mogelonsky et al 1997). In light of the current economic downturn, it is a possibility that Latino's have turned to filtering their tap water, instead of purchasing bottled water.

5.3 Significance of the Study

It is important to understand differences in behaviors among Latinos and non-Latinos and their children when it comes to drinking tap water, because it is known that exposure to optimal amounts of fluoride through tap water can greatly reduce a child's caries risk. The finding that both Latinos' and Non-Latinos' main source of drinking water is bottled water is yet another reason for pediatric providers to regularly educate their patients, as a whole, on the importance of drinking optimally fluoridated water in regards to caries prevention. The findings that Latino parents born outside of the U.S. and their children are more than twice as likely to drink filtered tap water, may leave the Latino child unexposed to the caries preventing benefit of fluoridated water and thus having a potential increased risk for caries. The use of household filtration systems that remove fluoride from the water may require that a child receive fluoride supplementation, if the water is left with suboptimal fluoride levels (Prabhakar 2008). In addition, it is important that providers be able to accurately assess a patient's fluoride exposure prior to prescribing a fluoride supplement. The AAPD and the ADA encourages the labeling of bottled water to include fluoride levels and also encourages that all home filtration systems have information on their effects on fluoride levels (AAPD 2011, ADA b).

This finding may give impetus for the development of guidelines for pediatric providers to target Latino parents, particularly newly emigrated Latino parents, for education on the need to be informed of the effects their filtrations systems may have on their water fluoridation levels.

Currently there is a lack in assessment of a patient's fluoride content of drinking water by primary care providers, and little guidance as to the importance of drinking fluoridated tap water (Hobson et al 2007, Merkel et al 2011, Sriraman et al 2009). The current checklist in regards to Nutrition and Dental Health for the National Resource Center for Health and Safety in Childcare and Early Education (NRC) gives a recommendation to limit juices to children to 4-6 oz. per day, and strongly recommends that "drinking water be available to the children at all times" (nrckids.org, healthykids.us 2010); however, it makes no mention of what the source of this drinking water should be. Additionally, no mention of fluoridated water is made. A study by Mennella et al in 2006, which appears in the Journal of the American Dietetic Association, compared the different foods and beverages that are fed to Hispanic infants and non- Hispanic infants. This study concluded that foods fed to Hispanic toddlers differed from foods fed to non-Hispanic toddlers and that primary providers should be aware so that guidance can be given in prevention of disease (Mennella et al 2006), yet again no mention or comparison was made in regards to drinking water sources.

The lack of guidance among primary care professionals, coupled with the recent news release by the U.S. Dept. of Health and Human Services and the Environmental Protection Agency, in which the HHS proposes changing the recommended fluoride content in tap water from a range of 0.7 - 1.2 ppm, to a maximum of 0.7ppm (HHS, news-release 2011), may only further complicate the issue. This change, that was brought about by concern of adverse health effects due to overexposure to fluoride through other fluoride sources in the diet may possibly cause further confusion in the population as to the safety of drinking fluoridated tap water. A report by the CDC on the findings of the NHIS' 1990 findings regarding the public's knowledge on water fluoridation stated that the public needs to be further educated on the benefits of

fluoridated water in order to avoid unclear interpretation of its safety (CDC, MMWR 1992). A study by Sriraman et al in 2009, out of New York State, found that of their participants surveyed, the most frequent noted reason for selecting bottled water for drinking was fear of contaminants, yet most of their participants were unaware of the fluoridation levels in any of their drinking water sources (Sriraman et al 2009). Studies have noted that educating parents on knowledge of oral health can reduce the disparities among different demographic groups (Kaste et al 2007). The development of guidelines for the pediatric provider, dental or medical, to discuss the dental benefits of drinking optimally fluoridated tap water with their patient's parents would be beneficial and critical to ensuring that all demographics benefit from the caries prevention effect of fluoride.

6. Conclusions

- No significant differences existed between the Latino and Non-Latino respondents self-reported consumption of bottled water; both groups reported a high consumption of bottled water.
- Latino respondents, in particular Latino respondents born outside of the U.S., tend to drink more filtered water than all others.
- Latino respondents, in particular Latino respondents born outside of the U.S., reported a greater usage of filtered tap water for cooking when compared to all others.
- Latino respondents, in particular Latino respondents born outside of the U.S., reported that their children drink more filtered tap water than all other groups.
- Latino respondents, in particular Latino respondents born outside of the U.S., reported that their children drink less unfiltered tap water than all other groups.
- The consumption of filtered tap water and the avoidance of unfiltered tap water have a strong association with being Latino, but in particular with being Latino born outside of the U.S.

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APPENDICES

APPENDIX A

Drinking Water Study

Dear Parent /Legal Guardian:

If you are the parent or legal guardian of a child 5 years of age or younger, we are inviting you to participate in a survey to look at drinking water habits, sources, and opinions among parents and their children. There are no harms or benefits to you to be a part of the study. This survey is anonymous (without your name) and voluntary. If you do not want to participate, there is no affect on your ability to receive treatment at UIC. Please feel free to ask questions about the survey. Drs Reyes de Lobos and Kaste can be reached at the numbers below. The survey should take about 5 minutes to complete. Please place the survey in the box that says DRINKING WATER SURVEY, or mail to the address below, when you are finished with it. It may benefit others if you respond because it will help to know more about the drinking water use among the population today. If you have previously completed this survey, please return it to the person that gave it to you and do not complete it again. Thank you for your time,

Principle Investigator: Maribel Reyes de Lobos, DDS, (312) 996 1990

Faculty Advisor: Linda M. Kaste, DDS, MS, PhD, (312) 996-5724

UIC Department of Pediatric Dentistry, 801 S Paulina St, Chicago, IL 60612

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1. What is the age of your child being seen today? _____

2. What is your relationship with this child?
() Parent
() Legal Guardian
() Caregiver
() Other _____

3. What is YOUR gender?
() Female
() Male

4. What is YOUR CHILD'S gender?
() Female
() Male

5. What is YOUR age? _____

Please Turn Page Over

APPENDIX A (continued)

6. Which group do you most identify YOURSELF with?
() White
() African-American
() Latino
() Asian
() Other _____

7. What is YOUR country of birth? _____

8. What is YOUR CHILD's country of birth? _____

9. What type of water do YOU drink at home? (Check all that apply)
() Straight from the Tap (unfiltered)
() Filtered from the Tap
() Boiled from the Tap
() Bottled Water
() I never drink water
() Other _____

10. What type of water does YOUR CHILD drink at home? (Check all that apply)
() Straight from the Tap (unfiltered)
() Filtered from the Tap
() Boiled from the Tap
() Bottled Water
() My child never drinks water
() Other _____

11. What type of water do YOU cook with? (Check all that apply)
() Straight from the Tap (unfiltered)
() Filtered from the Tap
() Boiled from the Tap
() Bottled Water
() I never cook with water
() Other _____

Please Go to Next Page

APPENDIX A (continued)

12. How much water do YOU drink per day (best guess)?

	None	1-3 cups (1/2 liter)	4-5 cups (1 liter)	5-7 cups (1½ liters)	8 cups or more (2 liters or more)
Tap water	○	○	○	○	○
Bottled water	○	○	○	○	○

13. How much water does YOUR CHILD drink per day (best guess)?

	None	1-3 cups (1/2 liter)	4-5 cups (1 liter)	5-7 cups (1½ liters)	8 cups or more (2 liters or more)
Tap water	○	○	○	○	○
Bottled water	○	○	○	○	○

14. How do you think the water tastes?

	Bad	Sort of bad	OK	Sort of good	Good
Tap water	○	○	○	○	○
Bottled water	○	○	○	○	○

15. How do you think the water smells?

	Bad	Sort of bad	OK	Sort of good	Good
Tap water	○	○	○	○	○
Bottled water	○	○	○	○	○

16. How clear do you think the water is?

	Unclear	Sort of unclear	OK	Clear	Very clear
Tap water	○	○	○	○	○
Bottled water	○	○	○	○	○

17. How safe do you think the water is?

	Unsafe	Sort of unsafe	OK	Safe	Very safe
Tap water	○	○	○	○	○
Bottled water	○	○	○	○	○

18. Does the water you drink contain fluoride?

	Yes	No	I do not know	Does not apply
Tap water	○	○	○	○
Bottled water	○	○	○	○

Please Turn Page Over

APPENDIX A (continued)

19. If you were born outside the US, did you drink water directly from the tap (unfiltered/unboiled) in your home country?
() Always
() Sometimes
() Never
() Other, please explain _____
() Not applicable, I was born in the U.S.

20. What is YOUR highest achieved level of education?
() Less than High School
() High School/GED
() College

21. What type of dental insurance does YOUR CHILD have?
() None
() Private Insurance
() Medicaid
() Other _____

22. Do you live in Chicago?
() Yes
() No **If no, in what town/city do you live?** _____

23. Please write any additional comments in the box below:

End of survey

Thank you very much!

APPENDIX B

Estudio de Agua Potable

Queridos Padres/Representantes Legales

Si usted es el padre/la madre o representante legal de un niño(a) de 5 años de edad or menor, les invitamos a participar en una encuesta que investiga los habitos relacionados con el agua potable, las fuentes, y las opiniones entre los padres y sus hijos. No hay riesgos o beneficios para usted si participa en este estudio. Esta encuesta es anonima (no incluye su nombre) y es voluntaria. Si prefiere no participar, no afectara en nada su habilidad de recibir tratamiento en UIC. Sientase libre de hacer preguntas acerca de esta encuesta, se puede comunicar con las Dras. Reyes de Lobos y Kaste con los numeros de telefono abajo mencionados. Se tardara unos 5 minutos en completar la encuesta. Favor de dejar la encuesta en la caja que dice ENCUESTA AGUA POTABLE, o enviar por correo a la direccion abajo mencionada, cuando la haya completado. Sus respuestas podrian beneficiar a otros porque nos ayudaria a saber mas sobre el uso de agua potable en la poblacion. Si usted a completado esta encuesta anteriormente, no la complete y regresela a la persona que se la dio. Gracias por su tiempo,

Investigadora Principal: Maribel Reyes de Lobos, DDS (312) 996-1990

Consejera de Facultad: Linda M. Kaste, DDS, MS, PhD (312) 996-5724

UIC Departmento de Odontologia Pediatrica

1. Que edad tiene el niño(a) que se va atender hoy? _____

2. Cual es su relacion al niño(a)?
() Madre/Padre
() Representante Legal
() Representante
() Otro

3. Cual es el genero de USTED?
() Femeniño
() Masculino

4. Cual es el genero del niño(a)?
() Femeniño
() Masculino

5. Que edad tiene USTED? _____

Favor de Dar Vuelta

APPENDIX B (continued)

6. Con que grupo se identifica USTED?
() Blanco
() Afro-Americano
() Latino
() Asiatico
() Otro

7. En que pais nacio USTED? _____

8. En que pais nacio EL NIÑO(A)? _____

9. Que tipo de agua toma USTED en casa? (elija todas las respuesta que apliquen)
() De la llave (sin filtrar)
() Filtrada de la llave
() Hervida de la llave
() Agua embotellada
() Nunca toma agua
() Otro _____

10. Que tipo de agua toma EL NIÑO(A) en casa? (elija todas las respuesta que apliquen)
() De la llave (sin filtrar)
() Filtrada de la llave
() Hervida de la llave
() Agua embotellada
() Nunca toma agua
() Otro _____

11. Con que tipo de agua cocina USTED? (elija todas las respuesta que apliquen)
() De la llave (sin filtrar)
() Filtrada de la llave
() Hervida de la llave
() Agua embotellada
() Nunca cocino con agua
() Otro _____

Siga a la Siguiente Pagina

APPENDIX B (continued)

12. Cuanta agua toma USTED por dia?

	nada	1-3 taza (1/2 litro)	4-5 tazas (1 litro)	5-7 tazas (1½ litro)	8 tazas o mas (2 litros o mas)
Agua de llave	()	()	()	()	()
Agua embotellada	()	()	()	()	()

13. Cuanta agua toma EL NIÑO(A) por dia?

	nada	1-3 taza (1/2 litro)	4-5 tazas (1 litro)	5-7 tazas (1½ litro)	8 tazas o mas (2 litros o mas)
Agua de llave	()	()	()	()	()
Agua embotellada	()	()	()	()	()

14. Como cree usted que sabe el agua?

	mal	un poco mal	mas o menos	un poco bien	bien
Agua de llave	()	()	()	()	()
Agua embotellada	()	()	()	()	()

15. Como cree usted que huele el agua?

	mal	poco mal	mas o menos	un poco bien	bien
Agua de llave	()	()	()	()	()
Agua embotellada	()	()	()	()	()

16. Que tan clara cree usted que sea el agua?

	turbia	poco turbia	mas o menos	clara	muy clara
Agua de llave	()	()	()	()	()
Agua embotellada	()	()	()	()	()

17. Que tan confiable cree usted que sea el agua?

	no confiable	poco confiable	mas o menos	confiable	muy confiable
Agua de llave	()	()	()	()	()
Agua embotellada	()	()	()	()	()

18. El agua que toma contiene fluor?

	si	no	no se	no aplicable
Agua de llave	()	()	()	()
Agua embotellada	()	()	()	()

Favor de Dar Vuelta

APPENDIX B (continued)

19. Usted tomaba agua directamente de la llave (no filtrada, no hervida) en su pais natal?

() Siempre
() A veces
() Nunca
() Otro _____
() Naci en EEUU, no aplicable

20. Hasta que nivel de educacion estudio USTED?

() Menos de la secundaria
() Secundaria
() Universidad

21. Que tipo de seguro dental tiene EL NIÑO(A)?

() Ninguno
() Seguro particular
() Medicaid
() Otro _____

22. Vive en Chicago?

() Si
() No, **si la respuesta es NO, en que municipalidad/ciudad vive?** _____

23. Favor de escribir cualquier comentario adicional abajo.

Final de encuesta

Gracias por participar!

APPENDIX C

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Exemption Granted

November 29, 2011

Maribel Reyes de Lobos, DDS
Pediatric Dentistry
801 S Paulina St
M/C 850
Chicago, IL 60612
Phone: (312) 996-1990 / Fax: (312) 413-8006

RE: Research Protocol # 2011-0945
"Drinking Water Sources among Latino vs. Non-Latino Children and Their Parents"

Dear Dr. Reyes de Lobos:

Your Claim of Exemption was reviewed on November 29, 2011 and it was determined that you research meets the criteria for exemption. You may now begin your research.

Please note the following regarding your research:

Exemption Period:	**November 29, 2011 – November 28, 2014**
Sponsor(s):	**None**
Performance Site(s):	**UIC**
Subject Population:	**Adults (18 years older) only**
Number of Subjects:	**500 Total**

The specific exemption category under 45 CFR 46.101(b) is:
(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at

APPENDIX C (continued)

risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
11/02/2011	Initial Review	Exempt	11/04/2011	Modifications Required
11/16/2011	Response To Modifications	Exempt	11/29/2011	Approved

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

1. Amendments You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.

2. Record Keeping You are responsible for maintaining a copy all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.

3. Final Report When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).

4. Information for Human Subjects UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. When appropriate, the following information must be provided to all research subjects participating in exempt studies:

    a. The researchers affiliation; UIC, JBVMAC or other institutions,
    b. The purpose of the research,
    c. The extent of the subject's involvement and an explanation of the procedures to be followed,
    d. Whether the information being collected will be used for any purposes other than the proposed research,
    e. A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,

APPENDIX C (continued)

f. Description of any reasonable foreseeable risks,
g. Description of anticipated benefit,
h. A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
i. A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).
j. A statement that the UIC IRB/OPRS or JBVMAC Patient Advocate Office is available if there are questions about subject's rights, which includes the appropriate phone numbers.

Please be sure to:

→ Use your research protocol number (2011-0945) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS office at (312) 996-1711 or me at (312) 355-1404. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Sheilah R. Graham, BS
IRB Coordinator, IRB # 2
Office for the Protection of Research Subjects

cc: Indru C. Punwani, Pediatric Dentistry, M/C 850
Linda Marie Kaste, Faculty Sponsor, Pediatric Dentistry, M/C 850

APPENDIX D

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Exemption Determination
Amendment to Research Protocol – Exempt Review
UIC Amendment # 1

March 13, 2012

Maribel Reyes de Lobos, DDS
Pediatric Dentistry
801 S Paulina St
M/C 850
Chicago, IL 60612
Phone: (312) 996-1990 / Fax: (312) 413-8006

RE: Protocol # 2011-0945
"Drinking Water Sources among Latino vs. Non-Latino Children and Their Parents"

Dear Dr. Reyes de Lobos:

The OPRS staff/members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research, and have determined that your research protocol continues to meet the criteria for exemption as defined in the U. S. Department of Health and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b)].

The specific exemption category under 45 CFR 46.101(b) is:
(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You may now implement the amendment in your research.

Please note the following information about your approved amendment:

Exemption Period: **March 12, 2012 – March 11, 2015**

APPENDIX D (continued)

Amendment Approval Date: March 12, 2012
Amendment:

Summary: UIC Amendment #1 of March 5, 2012 is an investigator-initiated amendment adding the following co-investigator: Ricardo Mendoza, DDS

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

5. Amendments You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.

6. Record Keeping You are responsible for maintaining a copy all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.

7. Final Report When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).

8. Information for Human Subjects UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. When appropriate, the following information must be provided to all research subjects participating in exempt studies:

    f. The researchers affiliation; UIC, JB VAMC or other institutions,
    g. The purpose of the research,
    h. The extent of the subject's involvement and an explanation of the procedures to be followed,
    i. Whether the information being collected will be used for any purposes other than the proposed research,
    j. A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,
    f. Description of any reasonable foreseeable risks,
    k. Description of anticipated benefit,
    l. A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,

APPENDIX D (continued)

m. A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).
n. A statement that the UIC IRB/OPRS or JB VAMC Patient Advocate Office is available if there are questions about subject's rights, which includes the appropriate phone numbers.

Please be sure to:

→Use your research protocol number (2011-0945) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 355-2908 or the OPRS office at (312) 996-1711. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Charles W. Hoehne, B.S., C.I.P.
Assistant Director, IRB # 2
Office for the Protection of Research Subjects

cc: Indru C. Punwani, Pediatric Dentistry, M/C 850
Linda Marie Kaste, Pediatric Dentistry, M/C 850

APPENDIX E

The survey (Appendix A & B) was scored and recoded in the following manner:

1. What is the age of your child being seen today? (MEAN)
Variable name: Agechild1

Variable also further collapsed into:
Variable name: Agegroup3
() 1-3 year-old = 1
() 4 year-old = 2
() 5 year-old = 3

2. What is your relationship with this child?
Variable name: Relationshiptochild2
() Parent = 1
() Legal Guardian = 2
() Caregiver = 3
() Other = 4

3. What is YOUR gender?
Variable name: Genderadult3
() Female = 1
() Male = 2

4. What is YOUR CHILD'S gender?
Variable name: Genderchild4
() Female = 1
() Male = 2

5. What is YOUR age? (MEAN)
Variable name: Ageadult5

APPENDIX E (continued)

6. Which group do you most identify YOURSELF with?
Name: Ethnicgroup6
() White = **1**
() African-American = **2**
() Latino = **3**
() Asian = **4**
() Other = **5**

Variable further collapsed into:
Name: LatinoNotLatino
() Latino = **1**
() Non-Latino = **2**

Variable further collapsed
for regression analysis into:
Name: LatinovsNotLatino
() Latino = **1**
() Non-Latino = **0**

7. What is YOUR country of birth?
Name: Countryofbirthadult7

Variable further collapsed into:
Name: AdultCOB3
() Latin America = **1**
() US = **2**
() Other = **3**

8. What is YOUR CHILD'S country of birth?
Name: Countryofbirthchild8

Variable further collapsed into:
Name: ChildCOB3
() US = **1**
() Other = **2**

APPENDIX E (continued)

9. What type of water do YOU drink at home?
(checked /yes response = **1**, not checked/no response = **0**)

() Straight from the Tap (unfiltered)	**Names: Straightfromtaptypewaterparent9a**
() Filtered from the Tap	**Filteredfromtaptypewaterparent9b**
() Boiled from the Tap	**Boiledfromtaptaypewaterparent9c**
() Bottled Water	**Bottledwatertypewaterparent9d**
() I Never Drink Water	**Neverdrinkswatertypewaterparent9e**
() Other	**Othertypewaterparent9f**

10. What type of water does YOUR CHILD drink at home?
(checked /yes response = **1**, not checked/no response = **0**)

() Straight from the Tap (unfiltered)	**Names: Straightfromtaptypewaterchild10a**
() Filtered from the Tap	**Filteredfromtaptypewaterchild10b**
() Boiled from the Tap	**Boiledfromtaptypewaterchild10c**
() Bottled Water	**Bottledwatertypewaterchild10d**
() My Child Never Drinks Water	**Neverdrinkswatertypewtaerchild10e**
() Other	**Othertypewaterchild10f**

11. What type of water do YOU cook with?
(checked /yes response = **1**, not checked/no response = **0**)

() Straight from the Tap (unfiltered)	**Names: Straightfromtaptypewatercook11a**
() Filtered from the Tap	**Filteredfromtaptypewatercook11b**
() Boiled from the Tap	**Boiledfromtaptypewatercook11c**
() Bottled Water	**Bottledwatertypewatercook11d**
() I Never Cook with Water	**Nevercookwithwatertypewater11e**
() Other	**Othertypewatercook11f**

APPENDIX E (continued)

12. How much water do YOU drink per day (best guess)?
Names: Tapwaterdailyparent12a & Bottledwaterdailyparent12b

	None = **0**	1-3 cups = **1** (1/2 liter)	4-5 cups = **2** (1 liter)	5-7 cups = **3** (1½ liters)	8 cups or more = **4** (2 liters or more)
Tap water	()	()	()	()	()
Bottled water	()	()	()	()	()

13. How much water does YOUR CHILD drink per day (best guess)?
Names: Tapwaterdailychild13a & Bottledwaterdailychild13b

	None =**0**	1-3 cups = **1** (1/2 liter)	4-5 cups = **2** (1 liter)	5-7 cups = **3** (1½ liters)	8 cups or more = **4** (2 liters or more)
Tap water	()	()	()	()	()
Bottled water	()	()	()	()	()

14. How do you think the water tastes?
Names: Watertastetapwater14a & Watertastebottledwater14b

	Bad = **0**	Sort of bad = **1**	OK= **2**	Sort of good = **3**	Good = **4**
Tap water	()	()	()	()	()
Bottled water	()	()	()	()	()

15. How do you think the water smells?
Names: Watersmelltapwater15a & Watertastebottledwater15b

	Bad = **0**	Sort of bad = **1**	OK = **2**	Sort of good = **3**	Good = **4**
Tap water	()	()	()	()	()
Bottled water	()	()	()	()	()

16. How clear do you think the water is?
Names: Waterclaritytapwater16a & Waterclaritybottledwater16b

	Unclear = **0**	Sort of unclear = **1**	OK = **2**	Clear = **3**	Very clear = **4**
Tap water	()	()	()	()	()
Bottled water	()	()	()	()	()

17. How safe do you think the water is?
Names: Watersafetytapwater17a & Watersafetybottledwater17b

	Unsafe = **0**	Sort of unsafe = **1**	OK = **2**	Safe = **3**	Very safe = **4**
Tap water	()	()	()	()	()
Bottled water	()	()	()	()	()

18. Does the water you drink contain fluoride?
Names: Drinkingwatertapcontainsfluoride18a & Drinkingwaterbottledcontainsfluoride18b

	Yes = **0**	No = **1**	I do not know = **2**	Does not apply = **3**
Tap water	()	()	()	()
Bottled water	()	()	()	()

APPENDIX E (continued)

19. If you were born outside the US, did you drink water directly from the tap (unfiltered/unboiled) in your home country?
Name: BornoutsideofUSdrankwaterfromtaphomecountry19
() Always = **1**
() Sometimes = **2**
() Never = **0**
() Other, please explain = **4**
() Not applicable, I was born in the U.S. = **3**

Variable further collapsed into:
Name: Hometap1yes0no
() Yes (always, sometimes) = **1**
() No (never, other, NA) = **0**

20. What is YOUR highest achieved level of education?
Name: Highestlevelofeducation20
() Less than High School = **0**
() High School/GED = **1**
() College = **2**

21. What type of dental insurance does YOUR CHILD have?
Name: Typeofdentalinsurancechild21
() None = **0**
() Private Insurance = **1**
() Medicaid = **2**
() Other = **3**

Variable further collapsed into:
Name: DentalinsuranceGroups2
() Medicaid = **1**
() Not Medicaid = **0**

22. Do you live in Chicago?
Name: LivesinChicagoparent22
() Yes = **1**
() No = **0**

APPENDIX E (continued)

Created Variables:

Respondent Born Outside of US **Name: AdultbornoutsideofUS**	Yes = **1**	No = **0**
Survey Language **Name: Surveylanguage**	Spanish = **1**	English = **0**
Latino Born Outside of US **Name: LatStatUSSTAT10**	Latino Born Outside US = **1**	All Others = **0**

APPENDIX F

Full Logistic Regression Analysis Output – Respondent Drinks Filtered Tap Water

Crude - LatinovsNotLatino

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatinovsNotLatino	.913	.295	9.556	1	.002	2.491	1.397	4.444
	Constant	-.967	.226	18.286	1	.000	.380		

Adjusted – LatinovsNotLatino

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatinovsNotLatino	.552	.347	2.539	1	.111	1.737	.881	3.427
	Genderadult3	.878	.423	4.302	1	.038	2.407	1.050	5.519
	Highestlevelofeducation20	-.119	.251	.225	1	.635	.888	.543	1.451
	LivesinChicagoparent22	.295	.321	.846	1	.358	1.344	.716	2.521
	AdultbornoutsideofUS	.797	.340	5.506	1	.019	2.219	1.140	4.320
	Constant	-1.999	.660	9.184	1	.002	.135		

Crude-LatStatUSStat10

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatStatNonUS10	.998	.294	11.505	1	.001	2.714	1.524	4.832
	Constant	-.878	.196	20.134	1	.000	.416		

Adjusted – LatStatUSStat10

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatStatNonUS10	.951	.334	8.103	1	.004	2.588	1.345	4.982
	Genderadult3	.768	.420	3.343	1	.068	2.156	.946	4.911
	Highestlevelofeducation20	-.137	.251	.299	1	.585	.872	.534	1.425
	LivesinChicagoparent22	.212	.321	.436	1	.509	1.236	.659	2.317
	Constant	-1.461	.594	6.053	1	.014	.232		

APPENDIX F (continued)

Full Logistic Regression Analysis Output – Child Drinks Filtered Tap Water

Crude - LatinovsNotLatino

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatinovsNotLatino	.804	.296	7.402	1	.007	2.235	1.252	3.990
	Constant	-.967	.226	18.286	1	.000	.380		

Adjusted – LatinovsNotLatino

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatinovsNotLatino	.431	.350	1.513	1	.219	1.538	.774	3.055
	Genderadult3	.933	.434	4.621	1	.032	2.543	1.086	5.953
	AdultbornoutsideofUS	.725	.343	4.470	1	.035	2.064	1.054	4.041
	LivesinChicagoparent22	.400	.324	1.523	1	.217	1.492	.790	2.817
	Highestlevelofeducation20	-.168	.251	.448	1	.503	.845	.516	1.383
	Constant	-2.006	.667	9.059	1	.003	.134		

Crude – LatStatUSStat10

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatStatNonUS10	.854	.294	8.428	1	.004	2.348	1.320	4.178
	Constant	-.878	.196	20.134	1	.000	.416		

Adjusted - LatStatUSStat10

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatStatNonUS10	.752	.334	5.055	1	.025	2.120	1.101	4.083
	Genderadult3	.819	.429	3.642	1	.056	2.269	.978	5.264
	LivesinChicagoparent22	.333	.323	1.063	1	.303	1.396	.740	2.631
	Highestlevelofeducation20	-.200	.251	.635	1	.426	.819	.500	1.340
	Constant	-1.485	.600	6.115	1	.013	.227		

APPENDIX F (continued)

Full Logistic Regression Analysis Output – Child Drinks Straight Tap Water

Crude – LatinovsNotLatino

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatinovsNotLatino	-.618	.318	3.771	1	.052	.539	.289	1.006
	Constant	-.724	.215	11.294	1	.001	.485		

Adjusted – LatinovsNotLatino

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatinovsNotLatino	.097	.377	.066	1	.798	1.101	.526	2.305
	AdultbornoutsideofUS	-1.562	.413	14.305	1	.000	.210	.093	.471
	HomeTap1yes0no	.633	.680	.865	1	.352	1.883	.496	7.142
	Constant	-.875	.724	1.461	1	.227	.417		

Crude – LatStatUSStat10

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatStatNonUS10	-.990	.356	7.728	1	.005	.371	.185	.747
	Constant	-.693	.189	13.453	1	.000	.500		

Adjusted – LatStatUSStat10

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatStatNonUS10	-.806	.370	4.754	1	.029	.447	.216	.922
	HomeTap1yes0no	1.265	.641	3.893	1	.048	3.543	1.008	12.445
	Constant	-1.850	.643	8.283	1	.004	.157		

APPENDIX F (continued)

Full Logistic Regression Analysis Output – Respondent Cooks with Filtered Tap Water

Crude – LatinovsNotLatino

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatinovsNotLatino	.931	.309	9.074	1	.003	2.537	1.384	4.649
	Constant	-1.240	.242	26.220	1	.000	.289		

Adjusted – LatinovsNotLatino

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatinovsNotLatino	.536	.344	2.431	1	.119	1.709	.871	3.352
	AdultbornoutsideofUS	.756	.372	4.125	1	.042	2.131	1.027	4.422
	HomeTap1yes0no	-.128	.414	.095	1	.758	.880	.391	1.983
	Agechild1	-.204	.143	2.027	1	.154	.815	.616	1.080
	Constant	-.539	.743	.526	1	.468	.583		

Crude – LatStatUSStat10

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatStatNonUS10	.951	.302	9.900	1	.002	2.588	1.431	4.679
	Constant	-1.120	.207	29.313	1	.000	.326		

Adjusted – LatStatUSStat10

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	LatStatNonUS10	.788	.319	6.088	1	.014	2.200	1.176	4.115
	HomeTap1yes0no	-.302	.404	.559	1	.455	.739	.335	1.631
	Agechild1	-.203	.140	2.115	1	.146	.816	.621	1.073
	Constant	.027	.688	.002	1	.969	1.027		

APPENDIX G

Country of Birth Adult

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		8	3.8	3.8	3.8
	Afghanistan	1	.5	.5	4.2
	China	2	.9	.9	5.2
	Ethiopia	1	.5	.5	5.6
	Honduras	1	.5	.5	6.1
	India	1	.5	.5	6.6
	Jamaica	1	.5	.5	7.0
	Jordan	2	.9	.9	8.0
	Korea	1	.5	.5	8.5
	Kuwait	1	.5	.5	8.9
	Macedonia	2	.9	.9	9.9
	Mexico	81	38.0	38.0	47.9
	Nigeria	2	.9	.9	48.8
	Philippines	2	.9	.9	49.8
	Poland	10	4.7	4.7	54.5
	Russia	1	.5	.5	54.9
	Ukraine	2	.9	.9	55.9
	USA	93	43.7	43.7	99.5
	Yemen	1	.5	.5	100.0
	Total	213	100.0	100.0	

VITA

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EDUCATION

University of Illinois at Chicago, Chicago, IL, College of Dentistry, 2010-2012
Pediatric Dentistry Residency 2012
M.S. Oral Sciences 2012

University of Illinois at Chicago, Chicago, IL, College of Dentistry, 1998-2002
Doctor of Dental Surgery 2002
B.S. 2001

University of Illinois at Chicago, Chicago, IL, 1992-1998
B.A. 1998, Major: Criminal Justice & French, Minor: Chemistry

Université de Paris, La Sorbonne, Paris, France, 1995-1996
Certificate of Foreign Studies 1996

WORK EXPERIENCE

Department of Pediatric Dentistry, University of Illinois at Chicago
Resident, Teaching Assistant 2010-2012

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Faculty, Clinical Provider 2008-2010

Robert McCormick Boys & Girls Club of Chicago, Crest Smile Shoppe
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Salud Family Health Centers
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Dr. Bryniarski & Associates
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Department of Restorative Dentistry, University of Illinois at Chicago
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AWARDS

UIC President's Award Scholarship 1992-1996
UIC Honor's College 1994-1998
International College of Dentists Award 2002
National Health Service Corps Loan Repayment Award 2004-2008

PROFESSIONAL MEMBERSHIP

American Academy of Pediatric Dentistry
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PRESENTATIONS

Poster Presentation: UIC, College of Dentistry, Clinic & Research Day 2011
Literature Review Title: Drinking Water Sources among Latino and Non-Latino Parents and Their Children.
Co-authors: Linda M. Kaste

Poster Presentation, AAPD 64th Annual Session 2011, New York, NY
Literature Review Title: Drinking Water Sources among Latino and Non-Latino Parents and Their Children.
Co-authors: Linda M. Kaste

Poster Presentation, UIC, College of Dentistry, Clinic & Research Day 2012
Case Report Title: A Case Report of A Child with Harlequin Ichthyosis.
Co-authors: Marilia Montero-Fayad

SPECIAL EXPERIENCES

Dia Del Nino 2011, 2012 – Dental Screenings
Fort Morgan Health Fair 2007, 2008 – Dental Screenings
Fiesta Del Sol 2001 – Dental Screenings

PUBLICATIONS

Vergotine R, Reyes de Lobos M, Montero-Fayad M. Harlequin Ichthyosis: A Case Report. Pediatr Dent, In Press.