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Infant Formula, Tea, and Water Supplementation of Latino Infants at 4–6 Weeks Postpartum

Janet M. Wojcicki, PhD, MPH[Assistant professor of pediatrics (gastrointestinal, hepatology, and nutrition)],

Division of Pediatric Gastroenterology and Nutrition, Department of Pediatrics, University of California, San Francisco

Katherine Holbrook, RN[Staff nurse],

Medical Center, University of California, San Francisco.

Robert H. Lustig, MD[Professor of pediatric endocrinology],

Division of Pediatric Endocrinology, Department of Pediatrics, University of California, San Francisco

Aaron B. Caughey, MD, PhD[Professor and chair],

Department of Obstetrics and Gynecology, Oregon Health & Science University, Portland, OR

Ricardo F. Muñoz, PhD[Professor of psychiatry], and

Department of Psychiatry, University of California, San Francisco

Melvin B. Heyman, MD, MPH[Professor of pediatrics (gastrointestinal, hepatology, and nutrition)]

Division of Pediatric Gastroenterology and Nutrition, Department of Pediatrics, University of California, San Francisco.

Abstract

The American Academy of Pediatrics recommends exclusive breastfeeding until 6 months- of-age. The authors examined prevalence and risk factors for use of infant formulas, water, and teas at 4–6 weeks in Latino infants in the San Francisco Bay Area, a group at high risk for future obesity. They recruited a cohort of pregnant Latina women (N = 201). Infant dietary recall and postpartum depressive symptoms were assessed at 4–6 weeks. The authors found that 105 women (53.1%) were feeding infant formulas and 48 (25.4%) were supplementing with tea or water. Of those providing water or tea, 60.0% were providing daily supplementation. In multivariate analyses, risk for infant supplementation with water or tea was associated with postpartum depressive symptoms (relative risk, 1.8; 95% confidence interval, 1.1–3.0), cesarean delivery (relative risk, 1.9; 95% confidence interval, 1.3–2.9), and infant formula use (relative risk, 1.3; 95% confidence interval, 1.1–1.6). Early supplementation with water or teas and infant formulas should be discouraged in Latinos, given the high frequency observed in this population. *J Hum Lact.* 27(2):122–130.

Keywords

perinatal depression; breastfeeding; infant feeding; complementary feeding; risk factors

The American Academy of Pediatrics (AAP) and the World Health Organization (WHO) recommend exclusive breastfeeding for the first 6 months of life.^{1,2} Exclusive breastfeeding is defined as the infant's consumption of human milk with no supplementation of water, juice, milk-based or other infant formulas, or other liquids or foods, with the exception of vitamin/mineral drops or medications.² Infant supplementation with water or juices may introduce contaminants, allergens, or solutes.³ In both developing and industrialized countries, partial breastfeeding is associated with increased risk for infant morbidity and mortality.^{4,5} Excessive water intake may also result in hyponatremia in healthy infants younger than 6 months.⁶ Additionally, early supplementation with infant formulas is associated with shorter duration of breast-feeding.^{7,8}

In spite of the AAP's and WHO's recommendations, the rate of exclusive breastfeeding is relatively low in the United States. Only 42.5% of infants at 3 months and 13.1% at 6 months are still exclusively breastfed.⁹ Additionally, caregivers often introduce complementary foods, such as cereals or other liquids, including water and juices, before 6 months-of-age.^{10–15} Common reasons to begin early complementary feeding include (1) the caregivers' perceptions that the baby is not satisfied or is not receiving adequate nutrition with breast milk or formula alone, (2) the caregivers' beliefs that solids help the infant sleep better at night, and (3) advice from family and friends.^{10,13,15,16} Herbal teas—specifically, chamomile and spearmint—are often given for problems of colic and diarrhea in infants.^{17,18}

The frequency of introduction of complementary foods and liquids varies among populations. US and international population-based studies are needed to better document the prevalence range of complementary foods introduction in infancy by race/ethnicity, socioeconomic status, and location. In the United Kingdom, Griffiths et al found that 36% of mothers began complementary foods before 4 months-of-age,¹⁰ compared with 22% of low-income US mothers in a California-based study, who introduced these foods between 2 and 4 months.¹¹ A US study of African American infants found an even higher percentage of introduction of complementary foods by 8 weeks-of-age (77%).¹⁵

The practice of early complementary feeding is reported to be especially prevalent among low-income and less-educated mothers.¹⁹ In a study of urban African American participants in the Special Supplementation Program for Women, Infants, and Children (WIC), Bronner et al found that by 7 to 10 days postpartum, 32% of infants were receiving some solid foods, escalating to 77% by 8 weeks postpartum.¹⁵ In the Feeding Infants and Toddler Study (FITS), 76% of infants had been fed infant cereal by 4 to 5 months of age, and 62% of Latino infants had been fed pureed foods.²⁰ The Food and Drug Administration's Infant Feeding Practices Study found that 24.7% of mothers were giving their infants water at least 3 times a week at 4 weeks-of-age, with increased risk in low-income and less-educated mothers.²¹ Given the frequency of early supplementation in infants and the potential harms associated with this practice, as well as the low frequency of exclusive breastfeeding in some populations, we sought to delineate maternal-specific risk factors for use of infant formulas and supplementation of water and teas in Latino children, a population of growing size in the San Francisco Bay Area of California. In this study, we examined the frequency of, and the risk factors for, the use of infant formulas and the feeding of teas and water at 4 to 6 weeks-of-age in Latino children.

Experimental Methods

Participants

Latina women were recruited during the second and third trimesters of pregnancy at 2 San Francisco prenatal clinics, at the University of California–San Francisco Medical Center and

San Francisco General Hospital, and were followed through labor and delivery and the postpartum period until their infants reached 4 to 6 weeks-of-age. Exclusion criteria included mothers who refused to participate, non-Latina mothers, mothers who were abusing drugs or alcohol, mothers with prepregnancy diabetes or gestational diabetes mellitus treated with insulin, mothers with polycystic ovaries or eating disorders such as bulimia or anorexia nervosa, and those who anticipated having any health problems that would prevent breastfeeding. Infants at delivery were excluded if they had special care needs, chronic disease, or Apgar scores of less than 7 at 5 minutes.

Procedures

Following informed consent, baseline data and sociodemographics of the participants were collected, including age, education, occupation, income, marital status, and language use. Medical history was ascertained through chart review and by questionnaire to assess mental health history, including history of depression.

Mothers were administered the Edinburgh Postpartum Depression Scale²² and the Center for Epidemiologic Studies Depression Scale²³ to assess for current depressive symptoms. The Mini International Neuropsychiatric Interview 5.0²⁴ was used to evaluate for current major depressive episodes. We also asked participants about mental health history, including previous diagnoses or treatment for depression or anxiety. All these questions and the depression measures were asked in either English or Spanish. The Edinburgh Postpartum Depression Scale, Center for Epidemiologic Studies Depression Scale, and Mini International Neuropsychiatric Interview have been validated in Spanish-speaking populations. The Edinburgh Postpartum Depression Scale had a sensitivity of 79% and specificity of 95.5% within a group of Spanish mothers (for major and minor depression)²⁵ and a sensitivity of 75% and a specificity of 93% with Mexican mothers for diagnosing major and minor depression.²⁶ Similarly, the Center for Epidemiologic Studies Depression Scale had a 95% sensitivity and a 91% specificity among Spanish adults²⁷ and a 96% sensitivity and a 73% specificity among Colombian adults for major depression,²⁸ as well as a Cronbach α of .90 with Mexican rural women.²⁹ In a Spanish population, the Mini International Neuropsychiatric Interview had a sensitivity of 94.1% and a specificity of 62.2% for diagnosing major depressive disorder.³⁰

At birth, anthropometric measurements of the infant were obtained, including weight (using standard digital infant scales) and length (using standard tape measurements). Gestational age and Apgar scores were recorded. At 4–6 weeks postpartum, participants were contacted by phone and interviewed again for depressive symptoms and clinical depression using the same instruments employed at baseline. Additionally, infant feeding was assessed using a 24-hour dietary recall and food frequency questionnaire.

All procedures were approved by the Committee on Human Research at University of California, San Francisco, and the Institutional Review Board at San Francisco General Hospital.

Statistical Analysis

Chi-square tests of association and *t* tests were applied to evaluate the relationships among socio-demographic factors (eg, years of education, years in the United States), prenatal and postnatal depressive symptoms, and risk for infant feeding with infant formula or supplementation with tea and water. Prenatal and postnatal depressive symptoms (based on assessment during pregnancy and assessment at 4 to 6 weeks, respectively) were defined as follows: Center for Epidemiologic Studies Depression Scale ≥ 16 , Edinburgh Postpartum Depression Scale ≥ 13 , or a major depressive episode or dysthymia per the Mini

International Neuropsychiatric Interview. *Exclusive breastfeeding* was defined as feeding the infant only breast milk without providing any other liquids or foods, although vitamin/mineral drops or medications were permitted according to the WHO's definition of exclusive breast-feeding.² Risks for infant formula use and tea and water supplementation of infants at 4–6 weeks postpartum were evaluated in multivariate generalized linear models to calculate relative risks. Only those variables that were $P < .10$ in bivariate analyses were included in multivariate models, in addition to maternal age and infant sex. For all results, we defined statistical significance as $P < .05$ and a statistical trend as P between .05 and $< .10$ to avoid a type II error. Only women who had all data on the selected variables were included in the multivariate models. Prenatal and postnatal depressive symptoms were not included together in the multivariate models owing to collinearity between these variables; however, the variable *postnatal depressive symptoms* was included in multivariate analyses as an independent predictor. Data were entered into Excel and subsequent analyses conducted using Stata 9.0 (Stata Corporation, College Station, TX).

Results

Of the 201 women enrolled prenatally, 196 were included in the study after delivery and 192 (95.5%) followed to 4–6 weeks postpartum. The 5 participants not included at delivery were excluded from the study owing to development of insulin-treated gestational diabetes mellitus. At 4–6 weeks postpartum, an additional 4 participants were excluded from the study owing to loss to follow-up ($n = 2$), maternal health contraindications for breastfeeding and inability to participate ($n = 1$), and participant desire to drop out of the study ($n = 1$).

Demographic Factors

Mean maternal age was 26.3 ± 5.2 years. The majority was of Mexican ethnicity (61.2%). Most were foreign-born (93.5%), with almost half (49.5%) having spent 5 years or less in the United States. Most were enrolled in the WIC program (92.0%). Most had an education of high school or less (76.0%), and only 31.0% were married (Table 1). Depressive symptoms were found in 58 pregnant women (29%) at baseline (prenatally), and 5% self-reported history of clinical depression or other mental illness. Current major depressive episodes per the Mini International Neuropsychiatric Interview were noted in 4%. Delivery method included 85.6% vaginal and 14% by cesarean section. Mean gestational age of the infants was 39.3 ± 1.5 weeks; mean birth weight was 3.4 ± 0.5 kg; and mean birth length was 50.1 ± 2.2 cm (Table 1). The mean age of the infant at interview was 4.9 ± 1.1 weeks. Only 30 mothers (15.7%) at 4–6 weeks post-partum had depressive symptoms (Table 2).

Formula Supplementation

At 4–6 weeks postpartum, 8.9% of infants were fed formula (with or without water/tea); 44.7% were fed both formula and breast milk; 9.0% were fed breast milk with water/tea; and 37.4% were exclusively breast-fed (Table 2). Of the infants receiving formula, 44.0% were receiving at least 4.0 oz; 24.0% were receiving 2.5 to 3.5 oz; and 32.0% were receiving 1 to 2 oz of formula at each feeding. For breastfed infants receiving formula, 39.8% were receiving at least 4.0 oz; 21.7% were receiving 2.5 to 3.5 oz; and 32.0% were receiving 1 to 2 oz of formula at each feeding. Most women who fed their infants formula were doing so daily (91%). Mixed breast and formula-fed infants drank a median of 8 oz daily (range, 0.3–50.0 oz per day) compared to exclusively formula-fed infants, who drank a median of 32.0 oz daily (range, 21.0–48.0 oz per day).

Water and Tea Supplementation

Water or teas were being supplemented by 25.4% of mothers to the infants at 4–6 weeks postpartum. Of the 48 mothers who were supplementing their infants with water or teas, 21

(43.8%) were using teas, and 27 (56.3%) were supplementing with water, including sugar water (Table 2). The frequency of water/tea supplementation was high: daily, 60.0% of mothers; 3–6 times per week, 8.9%; 1–2 times each week, 22.2%. Some stated only occasional supplementation (8.9%, 1–3 times ever) (Table 2). Of the mothers who were supplementing with liquids other than infant formulas, 80% were giving water to their children daily, in contrast to 35% of those who were feeding their children tea daily ($P = .01$). The most common teas were chamomile (65%), yerba buena (20%), and anise (10%). The volume of tea or water ranged from 0.5 to 4.0 oz, with the majority supplementing 1.0 to 1.5 oz per feeding (62.5%) (Table 2). A higher percentage of those supplementing water were using smaller volumes per feeding, compared with tea; 22% of those supplementing water were using 0.5-oz feedings versus 0% for tea ($P = .06$). The daily mean volume of tea and water supplementation was 1.2 ± 1.2 oz (range, 0.1–6.0 oz per day).

Analyses of Risk Factors

In bivariate analysis, we did not find any statistically significant risk factors associated with infant formula use at 4 to 6 weeks (Table 3).

A higher percentage of mothers with postnatal depressive symptoms were feeding infants water or teas versus mothers without depressive symptoms (41.4% vs 22.6%, $P = .03$) (Table 4). Postnatal depressive symptoms were not associated with tea versus water supplementation ($P = .98$). Supplementation of tea or water was also more common among Central American mothers compared with Mexican mothers, nearing statistical significance ($P = .09$) and in single or divorced mothers versus married/widowed mothers ($P = .09$). Women who delivered by cesarean were also trending toward increased risk of tea or water supplementation ($P = .09$), as well as toward providing supplemental formula with breast milk ($P = .07$). Infant supplementation of tea or water was not associated with maternal age, number of children in the household, education level, or maternal employment status.

In multivariate generalized linear regression models examining independent risk factors for supplementation with tea or water, increased risk for supplementation was associated with maternal postnatal depressive symptoms (relative risk, 1.8; 95% confidence interval, 1.1–3.0) and with cesarean delivery (relative risk, 1.9; 95% confidence interval, 1.3–2.9) (Table 5). Feeding a child infant formulas was also associated with increased risk for water or tea supplementation (relative risk, 1.3; 95% confidence interval, 1.1–1.6). Maternal age, marital status, Mexican ethnicity, and infant sex were not associated with risk for infant supplementation of water or tea.

Discussion

To our knowledge, ours is the first study demonstrating the frequency and types of nutrient supplementation of Latino infants at 4 to 6 weeks of age. The AAP recommends exclusive breastfeeding during the first 6 months of life to minimize the incidence or severity of diarrhea, ear infections, and bacterial meningitis.³ The academy also suggests that breastfeeding may offer protection against sudden infant death syndrome, diabetes, obesity, and asthma. Early supplementation of infants with water, teas, or other liquids is not recommended by the AAP or the WHO, because of the nonnutrient values of these beverages, the solute load of juice, the possibility of introduction of contaminants or allergens, and the possibility that these liquids will displace breastfeeding.³ The academy policies state that healthy infants require no supplemental water, even in hot weather, because both formula and breast milk provide sufficient amounts of water.³ Water supplementation has also been associated with oral water intoxication in infants.^{6,31}

At 4 to 6 weeks, 38% of our population was exclusively breastfeeding, which is slightly lower than the national average for exclusive breastfeeding in the United States at 4 weeks in 2007 (44.8%)³² and is comparable to rates from Mexico, where 39% of infants are exclusively breastfeeding at 4 weeks of age, on the basis of data from the 1999 national nutrition survey.³³ We found that approximately one-fourth of our population was supplementing infants with water or tea and that the majority of these supplements were provided daily, primarily in 1-oz portions. However, a noteworthy percentage of women (27%) were supplementing with a larger portion size, ranging from 2 to 4 oz of water or tea, with the daily volume reaching up to 6 oz.

Ours is the first study to investigate early infant supplementation in a population of exclusively Latino infants. Although our sample had approximately 60% of mothers of Mexican origin and 40% from Central America and South America, multivariate analysis did not reveal any difference in the prevalence of infant supplementation based on maternal ethnicity. Given the increasing size of the Latino population group in California and the United States in general and the possibility of micronutrient deficiencies from a diet of insufficient amounts of breast milk combined with supplementation of water or tea, this is an important group to target for early nutritional educational and community intervention programs.

Additionally, we document the association between postnatal depressive symptoms and risk for early infant supplementation of tea and water. Postpartum depressive symptoms have been found to be associated with adverse child health and developmental outcomes, including poorer regulation of negative affect, less compliance, attachment insecurity, and less interest in being able to master the world of objects.³⁴ Postnatal depressive symptoms are also associated with a lower breastfeeding rate,³⁵ increased risk for failure to thrive,³⁶ and reduced infant weight gain.³⁷ Further studies are now indicated to determine the role that early supplementation of nonnutritive liquids such as water and tea may have in initiating unhealthy feeding practices that contribute future weight gain trajectories and potential overnutrition and undernutrition in Latino children.

Other studies that evaluated the early introduction of infant formulas in US populations found a similar rate of supplementation (24.7%)¹⁷ or a slightly higher rate (33.3% at 7–10 days postpartum).¹¹ Studies of supplementation in Mexico have also found a high rate of infant supplementation, with 33.3% receiving water, teas, or nonbreast milks in the first week of life.³⁸ However, these studies did not provide detailed information about the frequency of supplementation and the amount. The majority of mothers in our population who were supplementing their infants with teas and water were providing daily supplementation of these items. Ninety-one percent of women were providing, at minimum, daily supplementation formulas. Because this population is at particularly high risk for future obesity and the possibility of overnutrition with excessive use of infant formulas, future education and intervention efforts are needed in this area. Additionally, given the high percentage of participation in the WIC program in our cohort, educating mothers regarding early water and tea supplementation of breast-fed and formula-fed infants is an important area that WIC program providers should address.

We also found an increased association between early supplementation with teas and water and cesarean section delivery. Similarly, a study by Giugliani et al of intake of water, herbal teas, and nonbreast milks in the first month of life in Brazil found that children who received water or herbal teas in the first 7 days-of-life were more likely to have introduced nonbreast milks in the first month.³⁹ This study also found that children who received water or teas in the first 7 days-of-life were 3 times more likely than other children to receive nonbreast

milks by 4 weeks-of-age. Future interventions should target women who delivered via cesarean as a higher risk group for early infant supplementation.

This study has some inherent limitations. For a prospective cohort study, we can identify only associations but not causal relationships between supplementation and patient characteristics. Additionally, even with 192 study participants, we were under-powered to examine the role of clinical depression in relation to early infant supplementation; that is, only 4.2% of our sample had clinical depression as determined by the Mini International Neuropsychiatric Interview at 4–6 weeks postpartum. Maternal depressive symptoms and clinical depression were identified by screening measures and structured clinical interviews rather than clinical interviews by mental health professionals. Finally, because this study was conducted in the San Francisco Bay Area, its generalizability to Latino populations elsewhere in the United States and abroad may be limited.

In summary, we report a high prevalence of water and tea supplementation in our population of Latina women. Supplementation appears to be increased in mothers with symptoms of postnatal depression and those who had a cesarean delivery. Of note, the risk factors in our population for supplementation of tea and water were different from those for use of infant formula. We did not find any risk factors associated with use of infant formulas. We recommend additional patient education on the advantages of exclusive breast-feeding and the potential risks of early water and tea supplementation, with materials in Spanish in particular.

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Table 1**Maternal Sociodemographics, Health History and Infant Delivery Specifics**

Variable	$\bar{x} \pm SD$ (Range)/% (No.)
Maternal sociodemographics	
Maternal age, years	26.3 $\pm$ 5.2
Ethnicity	
Mexican	61.2 (123 of 201)
El Salvadorian	13.9 (28)
Guatemalan	10.0 (20)
Honduran	5.0 (10)
Place of birth	
United States	6.5 (13 of 201)
Mexico	57.7 (116)
Central/South America	35.8 (72)
Years in the United States	
≤ 1	14.0 (28 of 200)
> 1 and ≤ 5	35.5 (71)
> 5 and ≤ 10	26.5 (53)
> 10	24.0 (48)
Food programs	
Women, Infants, and Children	92.0 (185 of 201)
Current food stamps	6.0 (12)
Lifetime history of food stamps	11.6 (23)
Marital status	
Married	31.0 (62 of 200)
Single living with partner	52.0 (104)
Single	14.5 (29)
Education: High school diploma or less	76.0 (152 of 200)
Homeowner	9.5 (19 of 201)
Primary language: Spanish	92.9 (184 of 198)
Other children in household	0.8 $\pm$ 1.0 (0–5)
Total number in the household	4.1 $\pm$ 2.1 (1–13)
Maternal health history	
Prenatal depressive symptoms ^a	28.9 (58 of 201)
Previous history of depression and mental illness ^b	5.0 (10 of 200)
Infant delivery specifics	
Type of delivery: Vaginal	85.6 (166 of 194)
Infant's sex: male	50.0 (98 of 196)
Gestational age, weeks	39.3 $\pm$ 1.5 (35.0–42.0)
Birth weight, kg	3.4 $\pm$ 0.5 (2.2–5.7)
Birth length, cm	50.1 $\pm$ 2.2 (45.0–56.5)
Apgar (5 min)	8.8 $\pm$ 0.6 (7–10)

Variable	$\bar{x} \pm SD$ (Range)/% (No.)
Macrosomic (> 4000 g)	8.5 (17 of 201)

^a Prenatal depressive symptoms were defined as having a Center for Epidemiologic Studies Depression Scale score ≥ 16 or an Edinburgh Postpartum Depression Scale score ≥ 13 or having a major depressive episode or dysthymia as per the Mini International Neuropsychiatric Interview.

^b Per self-report from the baseline questionnaire.

Table 2**Maternal Postpartum Health and Infant Specifics at 4–6 Weeks**

Variable	% (No.)/Mdn or $\bar{x} \pm SD$ (Range)
Maternal postpartum depressive symptoms, ^a 4–6 weeks	15.7 (30 of 191)
Feeding	
Breastfeeding	91.2 (175 of 192)
Infant formula use	53.1 (102)
Only infant formula use (no breastfeeding)	8.9 (17)
Infant formula consumption for women using infant formulas: Amount per feeding	
1–2 oz	32.0 (32 of 100)
2.5–3.5 oz	24.0 (24)
≥ 4 oz	44.0 (44)
Infant formula supplementation for women using infant formulas: Frequency of feeding	
≥ 1 /day	91.0 (91 of 100)
< 1 /day	9.0 (9)
Daily volume of formula fed (median)	
Mixed feeding (breast milk + formula)	8.0 oz (0.3–50.0 oz/day)
Only infant formula feeding	32.0 oz (21–48.0 oz/day)
Exclusive breastfeeding	37.4 (71 of 190)
Supplementation	25.4 (48 of 189)
Water	56.3 (27 of 48)
Tea	43.8 (21 of 48)
Water and tea supplementation, frequency	
Daily	60.0 (27 of 45)
1–2/week	22.2 (10)
3–6/week	8.9 (4)
Occasional	8.9 (4)
Water and tea supplementation, per feeding	
0.5 oz	12.5 (6 of 48)
1.0–1.5 oz	62.5 (30)
2.0–4.0 oz	25.0 (12)
Daily volume of water and tea supplementation (mean $\pm$ SD)	1.2 $\pm$ 1.2 oz (0.1–6.0 oz/day)

^aPrenatal depressive symptoms were defined as having a Center for Epidemiologic Studies Depression Scale score ≥ 16 or an Edinburgh Postpartum Depression Scale score ≥ 13 or having a major depressive episode or dysthymia as per the Mini International Neuropsychiatric Interview.

Table 3

Infant Formula Use in Relation to Maternal Sociodemographics, Health and Infant Delivery Specifics

	Formula Use	No Formula Use	
Variable	% (No.) or x ± SD	% (No.) or x ± SD	P
Maternal sociodemographics			
Maternal age			
≤ 21	63.6 (21 of 33)	36.4 (12)	.46
22–25	44.9 (31 of 69)	55.1 (38)	
26–30	52.0 (26 of 50)	48.0 (24)	
≥ 31	47.5 (19 of 40)	52.5 (21)	
Other children in the house	0.79 ± 0.9	0.87 ± 1.0	.56
Ethnicity			
Mexican	51.3 (60 of 117)	48.7 (57)	.52
Central American and other	44.0 (33 of 75)	68.0 (51)	
Education			
High school or less	56.2 (82 of 146)	43.8 (64)	.096
Some college or more	58.5 (24 of 41)	41.5 (17)	
Marital status			
Married/living with partner	50.6 (80 of 158)	49.4 (78)	.12
Single/divorced	34.4 (11 of 32)	65.6 (21)	
Employment			
Employed	51.8 (29 of 56)	48.2 (27)	.81
Not employed	46.3 (63 of 136)	53.7 (73)	
Years in the United States	2.7 ± 1.0	2.5 ± 1.0	.29
Maternal health and infant specifics			
Depressive symptoms ^a at 4–6 weeks			
Yes	53.3 (16 of 30)	46.7 (14)	.99
No	53.4 (86 of 161)	46.6 (75)	
Depressive symptoms ^a prenatally			
Yes	54.6 (30 of 55)	45.5 (25)	.80
No	52.6 (72 of 137)	47.5 (65)	
Macrosomic (> 4000 g)			
Yes	46.7 (7 of 15)	53.3 (8)	.63
No	53.1 (93 of 175)	46.9 (82)	
Delivery type			
Cesarean	46.2 (12 of 26)	53.9 (14)	.48
Vaginal	53.7 (88 of 164)	46.3 (76)	
Infant sex			
Male	51.0 (49 of 96)	49.0 (47)	.56
Female	55.2 (53 of 96)	44.8 (43)	

^aDepressive symptoms were defined as having a Center for Epidemiologic Studies Depression Scale score ≥ 16 or Edinburgh Postpartum Depression Scale score ≥ 13 or having a major depressive episode or dysthymia as per the Mini International Neuropsychiatric Interview.

Table 4

Tea and Water Supplementation in Relation to Maternal Sociodemographics, Health and Infant Delivery Specifics

	Tea/Water	No Tea/Water	
Variable	% (No.) or $\bar{x} \pm SD$	% (No.) or $\bar{x} \pm SD$	P
Maternal sociodemographics			
Maternal age			
≤ 21	21.2 (7 of 33)	78.8 (26)	.34
22–25	20.6 (14 of 68)	79.4 (54)	
26–30	30.6 (15 of 49)	69.4 (34)	
≥ 31	25.6 (10 of 39)	74.4 (29)	
Other children in the house	0.9 ± 1.2	0.8 ± 0.9	.49
Ethnicity			
Mexican	21.1 (24 of 114)	80.0 (90)	.09
Central American and other	32.0 (24 of 75)	68.0 (51)	
Education			
High school or less	28.7 (41 of 143)	71.3 (102)	.14
Some college or more	17.1 (7 of 41)	82.9 (34)	
Marital status			
Married/living with partner	23.2 (36 of 155)	76.8 (119)	.09
Single/divorced	37.5 (12 of 32)	62.5 (20)	
Employment			
Employed	25.9 (14 of 53)	74.1 (40)	.92
Not employed	25.2 (34 of 135)	74.8 (101)	
Years in the United States	2.6 ± 1.0	2.5 ± 1.0	.35
Maternal health and infant specifics			
Depressive symptoms ^a at 4–6 weeks			
Yes	41.4 (12 of 29)	58.6 (17)	.03
No	22.6 (36 of 159)	77.4 (123)	
Depressive symptoms ^a prenatally			
Yes	32.5 (17 of 54)	68.5 (37)	.22
No	23.0 (31 of 135)	77.0 (104)	
Macrosomic (> 4000 g)			
Yes	28.6 (4 of 14)	71.4 (10)	.76
No	24.9 (43 of 173)	75.1 (130)	
Infant birth weight	3306.4 ± 531.7	3379.5 ± 447.4	.36
Infant sex			
Male	28.7 (27 of 94)	71.3 (67)	.30
Female	22.1 (21 of 95)	77.9 (74)	
Delivery type			
Cesarean	22.2 (10 of 26)	61.5 (16)	.09
Vaginal	23.0 (37 of 161)	77.0 (124)	

	<u>Tea/Water</u>	<u>No Tea/Water</u>	
Variable	% (No.) or x ± SD	% (No.) or x ± SD	P
Only breast milk without infant formulas			
Yes	19.3 (17 of 88)	80.0 (71)	
No	30.7 (31 of 101)	69.3 (70)	.07

^aDepressive symptoms were defined as having a Center for Epidemiologic Studies Depression Scale score ≥ 16 or Edinburgh Postpartum Depression Scale score ≥ 13 or having a major depressive episode or dysthymia as per the Mini International Neuropsychiatric Interview.

Table 5

Multivariate Risk Factors for Tea and Water Supplementation of Latino Infants at 4–6 Weeks Postpartum

Variable	Relative Risk (95% Confidence Interval)
Maternal age, years	1.0 (0.96–1.04)
Marital status	
Married	1.0
Single	1.4 (0.8–2.3)
Ethnicity	
Mexican	1.0
Central/South American	1.4 (0.8–2.3)
Depressive symptoms ^a at 4–6 weeks	1.8 (1.1–3.0)
Only breast milk (no infant formulas) at 4–6 weeks	0.8 (0.6–0.9)
Delivery	
Vaginal	1.0
Cesarean	1.9 (1.3–2.9)
Infant sex	
Male	1.0
Female	0.9 (0.5–1.4)

^a Postnatal depressive symptoms at 4–6 weeks were defined as having a CES-D score ≥ 16 , or an EPDS score ≥ 13 or having a major depressive episode or dysthymia as per the MINI.