Differences in Infant Care Practices and Smoking among Hispanic Mothers Living in the United States

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Objective To assess the association between maternal birth country and adherence to the American Academy of Pediatrics safe sleep recommendations in a national sample of Hispanic mothers, given that data assessing the heterogeneity of infant care practices among Hispanics are lacking.

Study design We used a stratified, 2-stage, clustered design to obtain a nationally representative sample of mothers from 32 US intrapartum hospitals. A total of 907 completed follow-up surveys (administered 2-6 months postpartum) were received from mothers who self-identified as Hispanic/Latina, forming our sample, which we divided into 4 subpopulations by birth country (US, Mexico, Central/South America, and Caribbean). Prevalence estimates and aORs were determined for infant sleep position, location, breastfeeding, and maternal smoking.

Results When compared with US-born mothers, we found that mothers born in the Caribbean (aOR 4.56) and Central/South America (aOR 2.68) were significantly more likely to room share without bed sharing. Caribbean-born mothers were significantly less likely to place infants to sleep supine (aOR 0.41). Mothers born in Mexico (aOR 1.67) and Central/South America (aOR 2.57) were significantly more likely to exclusively breastfeed; Caribbean-born mothers (aOR 0.13) were significantly less likely to do so. Foreign-born mothers were significantly less likely to smoke before and during pregnancy.

Conclusions Among US Hispanics, adherence to American Academy of Pediatrics safe sleep recommendations varies widely by maternal birth country. These data illustrate the importance of examining behavioral heterogeneity among ethnic groups and have potential relevance for developing targeted interventions for safe infant sleep. *(J Pediatr 2017;182:321-6).*

Adherence to American Academy of Pediatrics (AAP) guidelines for safe infant sleep has been associated with decreased sudden unexpected infant death, including sudden infant death syndrome.[1-6] The AAP recommends that infants sleep in the supine position, room share but not bed share, breastfeed (exclusively for the first 6 months), and be in a smoke-free environment.[2] However, there is heterogeneity in infant care practices associated with sleep-related death across racial/ethnic groups.[1,5,7-9] To date, examination of infant care practices and health outcomes among Hispanics has been limited to broadly pooled racial/ethnic categories. Given the growth of the Hispanic population in the US and extent of cultural variation within this group, there is likely to be variation in infant care practices within this broad ethnic category. To address this knowledge gap, the purpose of this study was to examine the adherence to AAP recommendations for infant care practices, especially safe sleep, among Hispanic subgroups defined by maternal birth country using the Study of Attitudes and Factors Effecting Infant Care Practices (SAFE), a nationally representative survey of mothers of young infants.

Methods

SAFE had the overall objective of evaluating the prevalence of recommended infant care practices and identifying and quantifying factors associated with adherence to these recommendations. SAFE used a stratified, 2-stage, clustered design to obtain a nationally representative sample of mothers of infants aged 2 to 6 months, oversampling Hispanic and non-Hispanic Black mothers. The first stage sampled 32 intrapartum hospitals (**Appendix**; available at www.jpeds.com) with at least 100 births reported in the past year, using the 2010 American Hospital Association annual survey of hospitals. Among the 32 hospitals initially selected, 69% agreed to participate;sampling procedures were used to identify replacement hospitals within

AAP	American Academy of Pediatrics
SAFE	Study of Attitudes and Factors Effecting Infant Care Practices

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Portions of the study were presented at the meetings of: the Pediatric Academic Societies, San Diego, CA, April 25-28, 2015; Cribs for Kids, Pittsburgh, PA, April 14-17, 2015; International Conference on Stillbirth, Sudden Infant Death Syndrome (SIDS) and Baby Survival, Montevideo, Uruguay, September 8-10, 2016.

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the same stratum (matched for location and population) to complete the full sample of 32 hospitals. Institutional Review Board approval was obtained at all participating institutions.

In the second stage, sampled hospitals were assigned targets for sampling and enrollment of Hispanic, non-Hispanic-Black, and non-Hispanic-other race mothers so that approximately 3000 completed follow-up surveys were obtained from mothers of infants aged 2-6 months, including at least 25% of surveys each from Hispanic and non-Hispanic-Black mothers. Mothers were enrolled between January 2011 and March 2014.

Mothers were eligible for enrollment if they spoke English or Spanish, lived in the US, and would be caring for their infant by 2-4 months after delivery. Eligible mothers were recruited by staff located on site at each hospital, who were specifically trained for the study by the national SAFE staff. At the time of enrollment, during the birth hospitalization, mothers providing written informed consent completed a short initial interview to collect demographic information including mother's age, education, and income level; pregnancy and delivery history including infant sex and birth weight and mother's parity; and contact information for follow-up from national SAFE staff. Mothers were eligible to complete the follow-up survey, either online or by telephone (administered live by a member of the national SAFE staff) according to personal preference, after their infant was >60 days old. Each mother received a reminder to complete the survey a few days before her infant's 60th day of age, and then approximately weekly thereafter until completion of the survey, or until her infant's 180th day of age. Reminders to complete the survey were sent via e-mail, text message, or telephone. After 180 days of age, mothers received no additional reminders but were permitted to complete the survey.

For this article, we conducted a subanalysis of participants who responded "yes" to the question, "Do you consider yourself Hispanic or Latina?," on the initial enrollment survey. For simplicity, we will refer to all of these mothers as "Hispanic" throughout the remainder of the article. Of 1124 mothers who identified themselves as Hispanic, 912 completed follow-up surveys; of those, 907 completed the portions of the survey relevant to this analysis, for a response rate of 80.7%. Furthermore, 323 Hispanic mothers (35.4%) completed the survey in Spanish, and 589 (64.6%) completed the survey in English. In addition, 452 (49.6%) Hispanic mothers completed the survey by telephone, and 460 (50.4%) completed it online.

The initial enrollment survey included questions about maternal demographics, including birth country and smoking habits. The follow-up survey included questions regarding infant care practices, including sleep position, sleep location, and breastfeeding. All measures were self- reported.

Maternal Birth Country and Demographics

In the initial enrollment survey, mothers were asked in which country they were born so we could gather more information that would allow us to further define ethnicity in our sample. For the analysis, these birth countries were categorized into 4 regional groups: US, Mexico, Central/South America, and Caribbean. The language in which the mother chose to take the survey was recorded as her primary language.

Maternal Smoking

In the initial enrollment survey, mothers were asked if they had smoked at least 1 cigarette per day in the year before their pregnancy. A response of "yes" was classified as smoked in the year before pregnancy, and a response of "no" was classified as no smoking in year before pregnancy. Mothers who reported smoking before pregnancy were then asked whether they stopped smoking before or during their pregnancy. A response of "yes" was classified as no smoking during pregnancy, whereas a response of "no" or "stopped during the Xth month of pregnancy" was classified as smoked during pregnancy.

Infant Sleep Position

To determine infant sleep position, mothers were asked in which position they had usually placed their baby to sleep over the last 2 weeks. A response of "on the back" was classified as supine sleep position, "on the stomach" was classified as prone sleep position, and "on the side" was classified as side sleep position.

Infant Sleep Location

To determine infant sleep location, mothers were asked where they had usually placed their baby to sleep over the last 2 weeks. A response of "in a parent's (or other adult's) room in his/her own crib" was classified as room sharing without bed sharing; "in a parent's (or other adult's) bed for part of the night," "in a parent's (or other adult's) bed for the whole night," "in another child's bed for part of the night," or "in another child's bed for the whole night" were classified as bed sharing; and "alone in his/her own room" or "in another child's room in his/her own crib or bed" were classified as in a separate room.

Breastfeeding

To assess breastfeeding status, mothers were asked what their baby had been drinking over the last 2 weeks. A response of "only breast milk" was classified as exclusive breastfeeding; "mostly breast milk," "equally breast milk and formula," or "mostly formula" were classified as partial breastfeeding; and "only formula" or "other" were classified as no breastfeeding.

Statistical Analyses

All analyses accounted for the stratified 2-stage cluster sample design for both parameter estimates and SEs by using SAS (SAS Institute, Inc, Cary, North Carolina) procedures for complex survey designs. Data were weighted to account for sampling probabilities and participant loss to follow-up and to reflect the national joint distribution of maternal age and race/ethnicity.

For the analyses, Hispanic mothers were divided into 4 subpopulations by maternal birth country. In defining the subgroups, we followed a scheme similar to that used by the Centers for Disease Control and Prevention to study both health