

English, P.B., M. Kharrazi and R. Kreutzer (1997). Pregnancy outcomes in Mexican and U.S.-born Hispanics, Environmental Health Investigations Branch, California Department of Health Services and California Public Health Foundation.

EXECUTIVE SUMMARY

Objectives:

The objective of this investigation was to evaluate and quantify the role of a number of personal, socioeconomic, behavioral, cultural, health care and environmental factors in explaining differences in birth outcomes in Mexico-born Mexican-Americans, U.S.-born Mexican American, and U.S.-born non-Hispanic Whites.

Methods:

This investigation used data from a population-based investigation of mothers and infants who were born in and to residents of four Central Valley California counties between July 1 and October 31, 1992. The study population was comprised of 2,538 singleton live births to Mexico-born Mexican-American women, 1,990 to U.S.-born Mexican-American women, and 3,538 to U.S.-born non-Hispanic White women. Data came from three main sources: live birth certificates, questionnaires administered in maternity hospitals around the time of birth, and ZIP Code-level data from the 1990 Census.

Results:

U.S.-born Mexican-Americans had slower rates of fetal growth than Mexico-born Mexican-Americans across many different measures of growth [i.e., term-moderately low birth weight (RR=1.82, 95% C.I.-1.17-2.82), mean birth weight, head circumference, child length, and child body mass index]. Compared to non-Hispanic Whites, Mexico-born Mexican-Americans had faster rates of fetal growth for some measures (i.e., term-moderately low birth weight and child body mass index), but not for others (i.e., mean birth weight, head circumference, and child length).

Acculturation, using several different measures, could not explain differences in term-moderately low birth weight rates in the two Mexican-American study groups. Spanish vs. English language use at home was observed to be a risk factor for low birth weight after adjusting for other variables, thus action to potentiate the maternal birthplace effect. U.S. born women who usually spoke Spanish at home were at twice the odds of low birth weight as U.S. born women who usually spoke English, after adjusting for other variables (OR=1.98, 95% C.I.-1.00, 3.93). Among Mexican immigrants, rates of low birth weight and preterm delivery went down with time spent in the U.S. for women who immigrated prior to age 16 (OR=2.21, 95% C.I.=1.14, 4.29 for >0-5 yrs vs. >15 yrs.), while rates went up over time for older immigrants (OR=0.46, 95% C.I.=0.21, 0.97 for >0-5 yrs. vs. >15 yrs.). Among U.S.-born Mexican-American women, third and higher generation mothers had a higher rate of preterm delivery than second and second-mixed generation mothers (11.7% vs. 9.0% and 7.0%, respectively, p of $\chi^2=0.02$), but lower rate of term-moderately low birth weight infants (2.1% vs. 3.5% and 2.9%, respectively, p of $\chi^2=0.38$).

In multivariate analyses, two explanatory factors stood out: maternal age and smoking during

pregnancy. Together, these two factors explained about 20% of the difference in the rates of term, moderately low birth weight in the two Mexican-American study groups, after adjusting for parity and usual language spoken at home. Similar results were seen for differences in mean birth weight, child length and head circumference. Smoking solely explained the difference in the rates of term, moderately low birth weight in U.S.-born non-Hispanic Whites and Mexico-born Mexican-Americans.

The power of the following factors was rather (i.e., <5%) low in explaining differences in rates of term-moderately low birth weight in U.S.- and Mexico-born Mexican-Americans: marital status, mother's body mass index, caffeinated beverage consumption, and exposure to passive smoking. Weight gain during pregnancy was greater for U.S.- born than for Mexico-born Mexican-Americans, and as such could not be an explanatory factor. The prevalence rates were similar for U.S.- and Mexico-born Mexican-Americans of residence in a ZIP Code with one or more hazardous waste sites. Hazardous waste sites had little or no relationship with study outcomes, and as such could not be an explanatory factor. Women who were residents of urban and rural agricultural ZIP Code areas were at higher risk of low birth weight than those living in urban non-agricultural areas, and as such exaggerated the term-moderately low birth weight rate differences in the two Mexican-American study groups.

Conclusions:

The findings of this investigation add to the growing body of knowledge which shows the importance of birthplace in predicting or identifying women at risk of poor pregnancy outcomes. We were able to explain only a small portion of the differences between U.S.- born and Mexico-born Mexican-Americans in fetal growth measures using commonly collected risk factors (i.e., maternal age), and an expanded set of potentially explanatory variables (i.e., smoking during pregnancy). The findings suggest that the process of acculturation may vary substantially across different subgroups of the population, and that acculturation into the U.S. is not accurately described as a basically negative process. Until the mechanism(s) behind the maternal birthplace is clearly understood, we should fully incorporate maternal birth place into research, programmatic, and policy endeavors.

Special attention should be given to previously undescribed, high risk Mexican-American subpopulations. These include Mexican immigrants who deliver babies within the first year of being in the U.S., Mexico-born women who have their children 10 or more years after immigrating, and U.S.-born Mexican-Americans who usually speak Spanish at home. Educational programs designed especially for the needs of immigrants may prove particularly useful in lowering the reproductive risk in these women. Teenage pregnancy and use of cigarettes and other harmful substances, like alcohol and rugs, needs to be discouraged in the U.S.-born Mexican-Americans.

To better understand the reasons behind the slower fetal growth rates in U.S.-vs. Mexico-born Mexican-Americans, efforts should be made to emphasize research in the following areas: more accurate measurement of potentially explanatory factors (e.g., smoking, drinking, and marital and familial stability) and potentially confounding factors (i.e., socioeconomic status measures which are valid across all study groups at both the individual and contextual levels), examination of other potentially explanatory factors (e.g., adequacy of nutritional intake, intergenerational

support networks, values, and religious beliefs) and other explanations (i.e., self-selection for migration).