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SPECIAL ARTICLE

Birth outcomes of Asian-Indian-Americans

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Abstract

Objective: This study examines the maternal characteristics and birth outcomes of infants of U.S. resident Asian-Indian-American (AIA) mothers and compares those to infants of U.S. resident Whites and African-American (AA) mothers. *Methods:* Single live births to U.S. resident mothers with race/ethnicity coded on birth certificate as AIA, non-Hispanic White, or non-Hispanic AA were drawn from NCHS 1995 to 2000 U.S. Linked Live Birth/Infant Death files. *Results:* Compared to AAs or Whites, AIAs have the lowest percentage of births to teen or unmarried mothers and mothers with high parity for age or with low educational attainment. After taking these factors into account, AIA had the highest risk of LBW, small-for-gestational age and term SGA births but a risk of infant death only slightly higher than Whites and far less than AAs. *Conclusions:* The birth outcomes of AIAs do not follow the paradigm that more impoverished minority populations should have greater proportions of low birth weight and preterm births and accordingly greater infant mortality rates.

1. Introduction

Asian-Americans are a growing population in the U.S. and encompass several distinct groups including Chinese, Filipino, Japanese, Korean, Vietnamese, and Asian-Indian. According to vital statistic data, Asian and Pacific Islanders accounted for 5.2% of all live U.S. births in 2002, an increase from 3.4% in 1990 [1–3]. However, even though the percentage of Asian-Indian-American births has nearly doubled since the late 1980s, Asian-Indian-Americans (AIAs) have received relatively less research attention in the United States compared to other groups of "Asian-Americans."

Previous research from Asia and Europe has revealed some distinctive birth outcomes for immigrant Asian-Indian mothers [4–7]. Reports from India indicate that the infants of Asian-Indian mothers tend to have smaller average birth weights and a higher incidence of low birth weight infants than those of Europeans or Americans. Furthermore, infants born in Europe to immigrant Asian-Indian mothers are also lighter on average than their European counterparts [5,6]. Notwithstanding, perinatal mortality rates

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among Asian-Indian infants weighing between 1500 g and 2400 g are significantly lower than their White European counterparts [5].

The paradoxical finding of Asian-Indians having relatively higher low birth weight rates but comparable infant mortality rates suggests an exception to prevailing theories regarding the contribution of low birth weight and its relationship to infant death rates. A somewhat similar conundrum has been identified for Japanese-Americans in the United States whereby their infant mortality rates approach those of U.S. Whites in spite of having markedly higher percentages of low birth weight [8]. Madan et al reported lower mean birth weights and higher rates of small-for-gestational age among infants born to mothers of Asian-Indian origin as compared to infants of White mothers [9]. A later study also demonstrated elevated rates of low birth weight among infants of U.S. resident, foreign-born Asian-Indian mothers as compared to White infants, irrespective of the fact that certain protective factors occurred with a greater frequency among Asian-Indian women [10].

The present study examines the maternal characteristics and birth outcomes of infants born in the U.S. to resident AIA mothers and compares them to infants born to U.S. resident non-Hispanic Whites and non-Hispanic African-American mothers in the United States. Further investigated is whether the birth outcomes of AIAs in the U.S. also exhibited a paradoxical relationship between their measures of low birth weight, preterm and small fetal growth and their infant mortality rates.

2. Methods

The data were drawn from the NCHS 1995 to 2000 U.S. Linked Live Birth/Infant Death files [11]. Single live births to U.S. resident mothers, whose maternal race/ethnicity was coded on the birth certificate as either Asian-Indian, non-Hispanic White, or non-Hispanic African-American (Black), were selected for analysis. The selected births were from the states of California, Hawaii, Illinois, New Jersey, New York, Texas, and Washington, as these were the states using the expanded coding of Asian-Americans during this time period. The selected study sample included 3,826,996 births to non-Hispanic White mothers, 1,045,714 births to non-Hispanic African-American mothers, and 102,739 births to AIA mothers.

The analysis entailed an initial examination of race/ethnic group variations in maternal risk factors, prenatal care utilization and adverse birth outcomes. Chi square and ANOVA were used to test for significant race/ethnic differences in the rates of proportions or distribution means of maternal socio-demographic characteristics, initiation and adequacy of prenatal care utilization, and birth outcomes. Multiple logistic regression was then employed to calculate odds ratios and 95% confidence intervals for the independent effects of maternal factors on birth outcomes and to estimate the risk of an adverse birth outcomes for AIAs and non-Hispanic African-American, compared to non-Hispanic Whites (the reference group), before and after adjusting for maternal and prenatal care risk factors. Birth weight distributions and fetal growth curves were also visually inspected for the race/ethnic groups.

Table 1 Maternal and prenatal care utilization characteristics by race/ethnicity of mothers, 1995–2000 single live births to U.S. resident mothers

Characteristics	Asian-Indian	African-American	White	*p*-value [a]
% unmarried	8.4	67.4	19.9	<.01
% age<18	0.3	8.2	2.5	<.01
% age≥35	11.4	10.9	17.5	<.01
% low education [b]	9.5	20.4	9.4	<.01
% high education [c]	68.7	36.2	58.8	<.01
% primipara [d]	48.7	38.9	42.4	<.01
% high parity [e]	0.5	6.1	1.7	<.01
% non-U.S.-born	95.5	15.2	8.5	<.01
% hypertension	2.3	4.9	4.1	<.01
% diabetes	7.2	2.7	2.5	<.01
Prenatal care utilization [f]				
% intensive	4.4	5.4	6.2	<.01
% adequate	37.2	29.9	41.9	<.01
% intermediate	40.0	37.5	38.9	<.01
% inadequate	8.6	13.2	5.7	<.01
% no care	1.5	2.8	0.7	<.01
% missing care	8.3	11.2	6.7	<.01
% 1st trimester	82.0	72.4	87.7	<.01
# of births	102,739	1,045,714	3,826,996	

[a] Chi square used to determine *p*-values.
[b] Less than 12 years of education for adults; for adolescents (<18 years), 2+ years below expected grade level for age.
[c] 13 or more years of education for adults; for adolescents, 2+ years above expected grade level.
[d] Determined by number of previous live births on birth certificate.
[e] One or more previous births for adolescents (>18), 3 or more previous births for 18–21 years; 4 or more previous births for 22–24 years; 5 or more previous births for 25 and older.
[f] Defined by R-GINDEX [12]. Incorporates trimester prenatal care began, number of visits, and gestational age of infant at birth.