

**An Annotated Bibliography  
of Research on Health Risks and Low  
Birthweight Among Latinos**

by David A. Lopez, *Ph.D.*

**Working Paper No. 29**

*November 1996*

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The Julian Samora Research Institute is committed to the generation, transmission, and application of knowledge to serve the needs of Latino communities in the Midwest. To this end, it has organized a number of publication initiatives to facilitate the timely dissemination of current research and information relevant to Latinos. The Julian Samora Research Institute Research Report Series (RR) publishes monograph length reports of original empirical research on Latinos in the nation conducted by the Institute's faculty affiliates and research associates, and/or projects funded by grants to the Institute.

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### About this Paper:

This annotated bibliography is based on Dr. Lopez's dissertation entitled "Low Birthweight, Infant Mortality, Acculturation, and Nutrition: An Explanation of Between Group Differences Among Latinos." In reviewing the literature, it became clear to the author that the subject was "distended." Sources ranged from the fields of medicine, sociology, psychology, anthropology, health, and nutrition. There was no comprehensive reference that addressed low birthweight in the context of Latino culture or national origin. This publication seeks to provide that source.

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Dr. David A. Lopez is an Assistant Professor in Sociology at Creighton University in Omaha, Neb. He specializes in racial and ethnic relations with a particular emphasis on Latino health issues. He is also involved in research on differential misdemeanor sentencing of Latinos in the Midwest. Prior to coming to Creighton, Dr. Lopez was a post-doctoral fellow at JSRI at MSU.

He earned his Bachelor's degree at the University of California, Santa Barbara, his Master's degree at Oakland University, and his Ph.D. at Michigan State. His dissertation focused on the variations among Latinos' low birth weights, infant mortality, acculturation, and nutrition.

# **An Annotated Bibliography of Research on Health Risks and Low Birthweight Among Latinos**

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# **An Annotated Bibliography of Research on Health Risks and Low Birthweight Among Latinos**

## ***Introduction***

The goal of this bibliography is to provide a document that will assist research on low birthweight among Latinos. It is my hope that this bibliography can function at least as a “starting point” for those interested in the topic. The bibliography is divided by subject matter. The primary focus of this bibliography is on Latinos and this is reflected in the literature selected for the bibliography.

This bibliography will be of interest primarily to those with research questions related to the cultural dimensions of low birthweight among Latinos. However, for those interested in a preliminary exploration of articles related to low birthweight and infant mortality, citations are included that discuss this relationship. This bibliography will also be of use to those interested in comparisons among certain social and economic characteristics of the Latino subgroups. The discussion of the Hispanic Health and Nutrition Examination Survey, 1982-84, should be helpful for those who may be considering using this data set in their own research.

One problem that I experienced in researching low birthweight among Latinos, was the limited amount of research that exists on the subject. Although there is a substantial amount of research on the phenomenon of low birthweight in general (most in the biomedical fields), little pertained explicitly to Latinos. Furthermore, there is a scarcity of data sets that include birthweight measures for Latinos. It is even more difficult to find birthweight data that bifurcates Latinos by race and ethnicity. Clearly, more and improved data need to be generated in this area.

The bibliography begins with literature relating to infant mortality and birthweight. Given the physiological nature of these pregnancy outcomes, a general understanding of biomedical factors related these phenomena is of value to the researcher interested in these subjects. The literature addresses

infant mortality rates by race and ethnicity, risk factors associated with infant mortality, and causal factors associated with infant mortality. The literature in this section also points out the interrelationship between infant mortality and birthweight.

The second section discusses birthweight and Latinos by sub-groups. This section presents data which reflects Latino heterogeneity in low birthweight outcomes. Data is also given on outcomes for African Americans and Non-Latino Whites for comparison purposes.

A discussion of acculturation as related to Latinos and birthweight follows the above mentioned section. Here I present studies that have incorporated culture and acculturation as part of their explanation for birthweight outcomes among Latinos. The issue of acculturation is one that requires some further discussion.

In the dissertation, I devoted a complete chapter to the topic of acculturation. I did this because, at least in sociology, the concept of acculturation is one that although much has been written about it, little is known about it. Various measures have been proposed. For example, language and nativity are commonly used measures of acculturation. However, a definitive measure does not exist. I view acculturation as a process. This section presents literature related to explaining acculturation as a process. Following this section on acculturation is a related section on the differential socioeconomic conditions of Latino subgroups.

The next section discusses food habits and nutrition as related to culture. An important annex to this section is, the Hispanic Health and Nutrition Examination Survey, 1982-84 (HHANES), discussed as a research tool. The limitations and strengths of the HHANES are addressed.

## ***Infant Mortality and Birthweight***

The research on infant mortality and birthweight to date suggests that a clear relationship exists between the two. Low birthweight babies are more likely to die than babies who are not born low birthweight. Furthermore, there are specific indicators of low birthweight (e.g., gender, birth order, mother's age and education, and access to prenatal care). Male low birthweight babies tend to die more often than comparable female babies. Fullterm babies weigh more than preterm babies. First-born low birthweight babies are more likely to die than second-born low birthweight babies. Young, undereducated mothers who do not have access to prenatal care are more likely to have low birthweight babies and babies who die. Little literature exists that specifically discusses infant mortality and Latinos. As such, there was even less research that bifurcated Latinos by ethnic group for infant mortality.

### **COSSMHO (National Coalition of Hispanic Health and Human Services)**

1994 *Profiles of Health: Documenting Health and Establishing Priorities.*  
Washington, D.C.: COSSMHO.

Among other health statistics, this publication found that in Brooklyn, (where 83% of the Latinos are Puerto Rican), the infant mortality rate was 12.3 per 1,000 in the population. In Los Angeles, (where 76% of the Latinos are Mexican), the infant mortality rate was 6.9 per 1,000 in the population. The findings suggest that Puerto Rican infants have a higher rate of infant mortality than do Mexican infants. This is significant for Puerto Ricans also have the highest rate of low birthweight among Latinos.

### **From the MMWR**

1993 "Infant Mortality—United States, 1990."  
*Ethnicity and Disease* 3:427-31

This report found the infant mortality rate for the United States to be 9.2 infants per 1,000 births. The rate for Non-Latino Whites was 7.6 per 1,000 in the population and the rate for African Americans was 18.0 per 1,000 in the population. The data was derived from the National Center for Health Statistics and the Center for Disease Control. For the total population,

disorders relating to short gestation and low birthweight were the third leading causes of death. For African American infants, disorders relating to short gestation and low birthweight were the first leading causes of death. In 1987 (the most recent data at the time of the study), 95% of infant deaths were low birthweight babies. A problem with the statistics of this study is that they do not include Latinos.

### **Health United States 1990**

1992 Public Health Service. Centers for Disease Control. National Center for Health Statistics. Hyattsville, Maryland: U.S. Department of Health and Human Services.

This source is an analysis of the state of health in the United States and addresses differences by race and ethnicity. It was found that the infant mortality rates for 1,000 in the population for Mexicans was 8.8, for Cubans 8.0, and for Puerto Ricans, 12.3. The study demonstrates the heterogeneous nature of the Latino Population.

### **Hogue, Carol, J. R., James W. Buehler, Lilo T. Strauss, and Jack C. Smith**

1987 "Overview of National Infant Mortality Surveillance (NIMS) Project — Designs, Methods, Results." *Public Health Reports* 102:126-37.

The authors collected data from 50 states, New York City, the district of Columbia and Puerto Rico. Data consisted of birth and death certificates for infants born in 1980 and who died in the first year of life. For the 1980 cohort (all races), it was found that 97.6% of the infants per 1,000 live births were low birthweight infants. Six risk factors for infant mortality were identified. These factors were: gender, gestational age, live birth order, maternal age, maternal education, and prenatal care. According to the authors, more low birthweight males died than low birthweight females. As gestational age increased, birthweight increased. As birthweight increased, infant mortality decreased. Low birthweight infants born second had the lowest infant mortality rate among low birthweight infants. For infants over 2,500 grams, those born first had the lowest infant mortality rate. The infant mortality rate decreased as the age of mothers increased through 34 years of age. However, the infant mortality rate increased for births to mothers over 35 years of age.

Infant mortality associated with younger females is related primarily to low birthweight. As maternal education increased, the infant mortality rate decreased. When prenatal care was received in the first trimester of pregnancy, the infant mortality rate was substantially lower. The researchers argued that the most effective method of reducing infant mortality is to reduce low birthweight. One major criticism of the study is that it does not include Latinos.

**Rumbaut, Ruben G. and John R. Weeks**

1993 "Ethnicity, Nativity, and the Paradox of Perinatal Health and Morbidity: An Analysis of Sociocultural and Biomedical Causal Factors." Paper Presented at the Annual Meeting of the American Sociological Association. Miami, Florida. Aug. 15, 1993.

Using data from the San Diego Comprehensive Perinatal Program, 1989-1991, In a multivariate analysis, the authors found that the secondary biomedical variable of previous live births was the best predictor of infant health outcomes. This is to say, that being born later put an infant more at risk for infant mortality. The sample included Asians, Latinos (not subgrouped), Non-Latino Whites, and African Americans. These findings appear contradictory to the Hogue et al. (1987) study which found that first-born low birthweight babies were more at risk for infant mortality than second-born low birthweight babies. The difference in the studies is that Hogue et al. (1987) looked at low birthweight births where this study looked at births in general.

**Taffel, S.**

1980 "Maternal Weight Gain and the Outcome of Pregnancy." *Vital and Health Statistics U.S.* Department of Health and Human Services. Publication (PHS) 86-1922. Washington, D.C.

The study found that women who gained less than 21 pounds during pregnancy were 2.3 times more likely to have a low birthweight infant. Additionally, it was found that these infants were 1.5 times more likely to experience infant mortality. The data was drawn from a national sample.

**The Future of Children**

1995 Center for the Future of Children. Los Altos, Calif.: The David and Lucile Packard Foundation.

Statement of Purpose: "The primary focus of The Future of Children is to disseminate timely information on major issues related to children's well-being, with special emphasis on providing objective analysis and evaluation, translating existing knowledge into effective programs and policies, and promoting constructive institutional change. In attempting to achieve these objectives, we are targeting a multidisciplinary audience of national leaders, including policymakers, practitioners, legislators, executives, and professionals in the public and private sectors. This publication is intended to complement, not duplicate, the kind of technical analysis found in academic journals and the general coverage of children's issues by the popular press and special interest groups."

This publication is very useful for those interested in childhood welfare, development, health, education, and a variety of other social, medical, and psychological issues. Each issue changes its theme. For example, Volume 5, Number 2, focused on the many threats to the health, development, and educational attainment of children. Volume 5, Number 3, focused on early childhood development programs and how they influence future development. This journal is very useful for it approaches a topic from several fields and perspectives.

***Low Birthweight and Latinos***

The literature suggests that Mexicans and Cubans have the lowest rate of low birthweight among Latinos and Puerto Ricans have the highest. Heterogeneity exists among Latinos and their low birthweight outcomes. This information is important because it means that each Latino subgroup has its own distinct set of circumstances that may contribute to these outcomes. It should be noted that several risk factors effect low birthweight. Some of these factors are physiological and some are social. However, it is difficult to separate the physical from the social. For example, the rate of low birthweight babies is greater for those born preterm than full term (physiological correlate). The likelihood of having a preterm baby is effected by social correlates (e.g., mother's age, low education, and smoking). The intersection of these correlates is reflected in the studies reviewed.

**Becerra, Jose E., Carol J. R. Hogue, Hani K. Atrash, and Nilsa Perez**

1991 "Infant Mortality Among Hispanics: A Portrait of Heterogeneity." *Journal of the American Medical Association* 265:217-21.

This study, using the 1983 and 1984 Linked Birth and Infant Death Data Sets, found low birthweights of 4.1% for Mexicans, 4.0% for Cubans, and 6.6% for Puerto Ricans. The percentage of low birthweight babies for all Latinos was 4.6 and for Non-Latino Whites 4.0. The authors argue that although better nutrition, family dynamics, and low rates of smoking and alcohol use have been suggested as explanations for the low incidence of low birthweight among Latinos (compared to Non-Latino Whites), they do not completely explain the difference between the Latino outcome and the outcome for Non-Latino Whites. This work supports the proposition that acculturation to the Anglo culture may have a negative effect on pregnancy outcomes.

**Brooks-Gunn, J., Marie C. McCormick, and Margaret C. Heagarty**

1989 "Preventing Infant Mortality and Morbidity: Developmental Perspectives." *American Journal Orthopsychiatry* 58:288-96.

The authors identified possible causes of low birthweight to be demographic risks, medical risks during pregnancy, behavioral and environmental risks, health care risks, and physical factors that have yet to be determined. The study, in summarizing other research, suggests that environmental stress, no social support, work patterns during pregnancy, maternal health habits, and poor prenatal care were predictors of low birthweight. The article concluded that access to prenatal care and maternal education programs are needed to reduce the incidence of low birthweight. However, the study does not consider the possible effects of race or ethnicity on differential low birthweight outcomes.

**CDC (Centers for Disease Control)**

1993 Monthly Vital Statistics Report 9:41.

This statistical document found low birthweight for Mexicans to be 5.5%, Cubans 5.7%, and Puerto Ricans 9.0%. The percentage for all Latinos was 6.1 and for Non-Latino Whites the percentage was 5.6. The statistics example the heterogeneity in low birthweight outcomes among Latinos.

**Dowling, Patrick T. and Michael Fisher**

1987 "Maternal Factors and Low Birthweight Infants: A Comparison of Blacks with Mexican Americans." *Journal of Family Practice* 25:153-58.

This Chicago area study which reviewed medical records found that Mexicans had a low birthweight percentage of 5.9. The results were contrary to what would be expected given the socioeconomic conditions of Mexican Americans. The authors suggest that the results may be due to some "protective sociocultural effect" and selective immigration.

**Guendelman, Sylvia**

1995 "High-Risk, Good Outcomes: The Health Paradox of Latina Mothers and Infants." Chicano/Latinos Policy Project (CLPP) Working Paper 1(4). Institute of the Study of Social Change at the University of California at Berkeley.

In this paper, Guendelman presents several studies that have attempted to explain the low birthweight outcomes for at-risk Mexican Americans. The author suggests that studies have focused on four hypotheses: (1) selective migration results in more healthy mothers, (2) protective factors associated with Mexican culture may facilitate positive pregnancy outcomes, (3) infant deaths during pregnancy may decrease the numbers of weak new born babies, (4) Infant deaths are under reported. There are two main criticisms of this paper. One, the paper only considers Mexican Americans. This does not take into consideration subgroup comparisons among Latinos. This is related to the second criticism, and this is that the author is only considering low birthweight in general, not low birthweight controlling for gestation length. My dissertation, using the Hispanic Health and Examination Survey, 1982-84, indicated that when controlling for gestation length, Puerto Ricans actually had better outcomes for low birthweight than Mexicans. This means that the issue is not so much one of low birthweight, but one of premature birth.



**Hayes-Bautista, David E.**

1992 "Latino Health Indicators and the Underclass Model: From Paradox to New Policy Models." Pp. 32-47 in *Health Policy and the Hispanic* edited by Antonio Furino. Boulder: Westview.

This study found that Latinos had the lowest incidence of low birthweight births in Los Angeles County (5.32%). The author states that the rate of low birthweight of Latinas is half the rate of African Americans and slightly better than Non-Latino Whites. The data is pertinent to Mexican Americans since the majority of Latinos living in the Los Angeles area are of Mexican descent.

**Health United States 1990**

1992 Public Health Service. Centers for Disease Control. National Center for Health Statistics. Hyattsville, Maryland: U.S. Department of Health and Human Services.

The publication found that low birthweight among Mexicans, Central and South Americans, and Cubans ranged from 5.6% to 6.0% (although they do not identify which group is at the high or low ends of the percentages). Low birthweight among Puerto Ricans was found to be 9.4% and among Non-Latino Whites 5.7%. The data demonstrate Latino heterogeneity in low birthweight outcomes.

**Kramer, Michael**

1987 "Determinants of Low BirthWeight: Methodological Assessment and Meta-Analysis." *Bulletin of World Health Organization* 5:663-737.

In a meta-analysis of French and English studies conducted between 1970 and 1984, the author found that low weight gain during pregnancy increased the rate of intrauterine growth retardation (IUGR). IUGR is positively correlated with low birthweight and infant mortality. IUGR was greater for women who were undernourished and for women from countries that experienced food shortages. These women were primarily from developing countries which had seasonal food shortages.

**Lopez, David A.**

1996 "Low Birthweight, Infant Mortality, Acculturation, and Nutrition: An Explanation of Between Group Differences Among Latinos." Ph.D. Dissertation, Department of Sociology, Michigan State University East Lansing, Michigan.

This study provides an analysis of the correlates of low birthweight among Latinos, Non-Latino Whites, and African Americans with its primary focus on Latinos. Low birthweight was defined as weighing less than 2,500 grams at birth. The study tested two hypotheses. Hypothesis one proposed that the nutrient intake of Puerto Rican women is less than the nutrient intake of Mexican and Cuban women. Hypothesis two proposed that nutritional intake effects low birthweight outcomes more for Puerto Rican women than Mexican and Cuban women. The Hispanic Health and Nutrition Examination Survey, 1982-84, served as the study's data source. The data contained information on nutritional intake for the Latino subgroups, low birthweight outcomes among the Latino subgroups, and social and economic information. Several multivariate statistics were used to test the hypotheses. The hypotheses were not supported. Puerto Ricans are not undernourished as compared to Mexicans and Cubans. However, differential patterns in nutritional intake were found to exist among the Latino subgroups. Differences were also found in low birthweight outcomes. Puerto Ricans had the highest rate of preterm low birthweight followed by Cubans. Mexicans had the lowest rate of preterm low birthweight. It is argued that Puerto Ricans have a high rate of preterm low birthweight because of poor social and economic conditions and a history of health affecting conditions related to their patriarchal dependency on the United States. It is suggested that the Cubans who are having the preterm low birthweight babies are those who are recent immigrants to the United States. It is proposed that the positive outcomes for Mexicans is due to the Mexican experience which is a function of their particular historical circumstances. That is, they maintain culinary and cultural practices which affect their nutrient intake. It is further suggested that the Mexican experience promotes an environment that results in positive low birthweight outcomes.

**Mendoza, Fernando S., Stephanie J. Ventura, R. Burciaga Valdez, Ricardo O. Castillo, Laura Escoto Saldivar, Katherine Baisden, and Reynaldo Martorell**

1991 "Selected Measures of Health Status for Mexican American, Mainland Puerto Rican, and Cuban American Children." *Journal of the American Medical Association* 21:98-109.

Using data from the 1987 National Vital Statistics System and the Hispanic Health and Examination Survey, 1982-84, the authors found low birthweight percentages of 6.2 for Latinos and 5.6 for Non-Latino Whites. Low birthweight for Latinos subgroups were 5.7% for Mexicans, 5.9% for Cubans, and 9.3% for Puerto Ricans. The study indicates the heterogeneous nature of low birthweight among the Latino subgroups.

**Michielutte, Robert, J. M. Ernest, Mary Lou Moore, Paul J. Meis, Penny C. Sharp, H. Bradley Wells, and Paul A. Buescher**

1992 "A Comparison of Risk Assessment Models for Term and Preterm Low Birthweight." *Preventive Medicine* 21:98-109.

This study's sample consisted of 25,758 low birthweight singleton births from 20 counties in North Carolina. Data was collected from physician records. These records included socioeconomic, physical, and medical history factors associated with low birthweight. The majority of the subjects were clients of Public Health Clinics. Preterm low birthweight was defined as less than 37 weeks gestation and weighing less than 2,500 grams. Term low birthweight was defined as 37 or more weeks gestation and weighing less than 2,500 grams at birth. 1,722 births were preterm low birthweight and 1,098 births were term low birthweight. Adolescents were more likely to have preterm low birthweight infants but less likely to have term low birthweight infants. Mothers with low educational levels had a higher rate of low birthweight babies. More African Americans had low birthweight infants than Non-Latino Whites. Women who smoked had a higher rate of low birthweight infants. Previous premature/low birthweight births increased the rate of low birthweight. Weight under 100 pounds increased

preterm low birthweight. For term low birthweight, shorter, heavier women, and taller, lighter, women, and shorter, lighter women were more at risk for low birthweight. The study offers some excellent insights into the issue of preterm low birthweight and term low birthweight. However, the study is limited to North Carolina.

**Rumbaut, Ruben G. and John R. Weeks**

1989 "Infant Mortality Among Indochinese Refugees: Patterns of Infant Mortality, Birthweight and Prenatal Care in Comparative Perspective." *Research in the Sociology of Health Care* 8:137-96.

In a San Diego area study, Non-Latino Whites had a low birthweight percentage of 5.1 as compared to a percentage of 5.2 for Latinos. The study focused on the Indochinese population and suggests that ethnicity factors and language explain most of the low birthweight among the Indochinese living in San Diego. An analysis of the differences between Latinos and Non-Latino Whites is not provided.

**U.S. Bureau of the Census**

1992 *Statistical Abstract of the United States 1992*: (112th edition). Washington D.C.: U.S. Government Printing Office.

This statistical document found low birthweight rates for Mexicans of 5.6%, Cubans 5.8%, and Puerto Ricans 9.5%. The rate for all Latinos was 6.2% and the rate for Non-Latino Whites was 5.7%. The low birthweight rate for African Americans was 13.2%. The statistics highlight Latino heterogeneity in low birthweight outcomes.

**Ventura, S. and J. Martin**

1991 *Advance Report of Final Nativity Statistics, 1991*. Monthly Vital Statistics Report, Vol. 42, No. 35. Hyattsville, Maryland: U.S. Department of Health and Human Services.

The authors found low birthweight rates of 6.1% for Latinos and 5.7% for Non-Latino Whites. In accounting for group heterogeneity, low birthweight rates were 4.8% for Cubans and 7.9% for Puerto Ricans. The findings demonstrate the heterogeneity that exist among Latinos in low birthweight outcomes.

## ***Acculturation, Latinos, and Birthweight Studies***

The degree to which one acculturates may effect their behavior. A change in behavior can have an effect on health outcomes. Low birth weight is a health outcome and this may be effected by acculturation. The literature on acculturation and low birthweight suggests that acculturation is detrimental to positive pregnancy outcomes (i.e., results in higher a higher incidence of low birthweight). However, there is one critical issue in this discussion, and that is “what exactly is acculturation?” In sociology, there is no agreed upon method of measuring acculturation. Furthermore, some researchers would use the term acculturation, but not really define what they mean by acculturation. The only measure I had in discussing acculturation processes was socioeconomic data. The point here is that the concept of acculturation is one that is not agreed upon and the researcher who uses acculturation as part of their paradigm should fully articulate what they mean by acculturation.

### **Balcazar, Hector**

1993 “Mexican Americans’ Intrauterine Growth Retardation and Maternal Risk Factors.” *Ethnicity and Disease* 3:169-75.

This article examined maternal risk and pregnancy outcomes among Mexican Americans. Using non-married status, low education, young age at delivery, at least one pregnancy complication, recent illness, at least one labor complication, and no prenatal care as risk factors, it was found that Mexican Americans had a lower risk for intrauterine growth retardation (IUGR) than did Non-Latino Whites. Also, in the sample of 25,289 Arizonan Mexican Americans, mothers born in the U.S. were 1.21 times more likely to have an infant born with IUGR than an infant born to a mother from Mexico. The findings support the argument that acculturation may contribute to negative pregnancy outcomes.

### **Borges, Guiherme, Malaquias Lopez-Cervantes, Ma Elena Medina-Mora, Roberto Tapia-Conyer, and Francisco Garrido**

1993 “Alcohol Consumption, Low Birthweight, and Preterm Delivery in the National Addiction Survey.” *International Journal of the Addictions* 28:355-68.

In this study, using the National Addiction Survey of Mexico, the authors found an incidence of low birthweight among their sample (N=5,234) of 3.2%. Women who suffered from Alcohol Dependence Syndrome were at very high risk of low birthweight and preterm delivery (odds ratio=12.1). The data on low birthweight was obtained in interviews and was based on mother’s recollection. The results of the study suggest that since U.S. women smoke more than Mexican women, women from Mexico who acculturate to Anglo culture may be more at risk for negative pregnancy outcomes.

### **Fenster, Laura and Molly J. Coye**

1990 “Birthweight of Infants Born to Hispanic Women Employed in Agriculture.” *Archives of Environmental Health* 45:46-52.

Using Hospital Birth Records, the researchers found that only 1.8% of the infants born to a sample of Latinas employed in agriculture in California (N=1,040) were born low birthweight. The authors argue that agricultural work did not increase the incidence of low birthweight and this may be due to selective migration (i.e., those who immigrate are physically strong and healthy).

### **Garcia Coll, Cynthia T.**

1990 “Developmental Outcome of Minority Infants: A Process-oriented Look into Our Beginnings.” *Child Development* 61:270-89.

In this article, the author suggests that there are important influences on the developmental outcome of minority children. These influences are cultural beliefs and practices of caregiving, health care practices and statuses, family structure, socio-economic forces, and biological factors. These factors can influence how an individual develops and the environment in which they develop. Development over the life span is effected by these characteristics which in turn can effect health outcomes. Low birthweight is a health outcome. The article suggests that the lower rates of infant mortality and low birthweight for Mexican Americans is puzzling given their lower socioeconomic status which points out the possibility of some type of protective factors in the Mexican American population regarding children and childbearing practices.

**Gaviria, Moises, Gwen Stern, and Stephen L. Schensul**

1982 "Sociocultural Factors and Perinatal Health in a Mexican American Community." *Journal of the National Medical Association* 74:983-89.

In a sample of 89 women from the Chicago area, this study found that recent arrivals to the United States (immigrated in previous two years) sought prenatal care later than long term arrivals (been in the United States more than two years). The study suggests that more recent arrivals may be less likely to utilize "modern" prenatal care and rely more on "traditional" forms of prenatal care (i.e., those rooted in culture). Regarding culture, the study discusses a postpartum practice called cuarentena. In this practice, the mother has a 40 day rest period following delivery. During this time, the mother focuses on her and her newborn's health. This may include, but not be limited to, nutritional practices. In the study, 60% of the mothers were planning on observing the cuarentena.

**Rueschenberg, Erich J. and Raymond Buriel**

1985 "Mexican American Family Functioning and Acculturation: A Family Systems Perspective." Pp. 15-25 in *Hispanic Psychology: Critical Issues in Theory and Research* edited by Amando M. Padilla. Thousand Oaks: Sage.

In a study on acculturation and the internal and external functioning of Mexican families (N=45), the authors used measures of acculturation which included language preference and proficiency, generational status, and recency of immigration. The study found that acculturation increased as family members became more involved in U.S. society. The study suggests that involvement in U.S. society (e.g., family members working) changed the family's culture.

**Rumbaut, Ruben G. and John R. Weeks**

1993 "Ethnicity, Nativity, and the Paradox of Perinatal Health and Morbidity: An Analysis of Sociocultural and biomedical Causal Factors." Paper Presented at the Annual Meeting of the American Sociological Association. Miami, Florida. Aug. 15, 1993.

The authors found that foreign born Latinos had better low birthweight outcomes than Latinos born in the United States. Foreign born Latinos had low birthweight rates of 1.9% and Latinos born in the United States had low birthweight rates of 4.1%. The study suggests that acculturation results in poorer health outcomes. The results were part of the San Diego Comprehensive Perinatal Program.

**Scribner, Richard and James H. Dwyer**

1989 "Acculturation and Low Birthweight Among Latinos in the Hispanic HHANES. *American Journal of Public Health* 79:1263-67.

This study is one of the most often cited regarding acculturation and low birthweight. Using the Hispanic Health and Nutrition Examination Survey, 1982-84, the researchers found that a higher acculturation index (using language, nativity and ethnic identification as measures) resulted in higher rates of low birthweight. The rate of low birthweight for Mexicans was 4.1%. A problem with this study is that it only looks at Mexicans regarding low birthweight outcomes. In other words, it does not conduct subgroup comparisons among Latinos.

**Weinman, Maxine L. and Peggy B. Smith**

1994 "U.S. and Mexico-born Hispanic Teen Mothers: A Descriptive Study of Factors that Relate to Postpartum Compliance." *Hispanic Journal of Behavioral Sciences* 16:186-94.

In a study of U.S. born and Mexican born adolescent Latina mothers, the authors found that for both groups postpartum follow-up was minimal (17.3% of a sample of 289). The researchers suggest that the two groups were more similar than different. This similarity may be a result of persistent cultural norms regarding pregnancy and childbirth. The authors argue that many Mexican Americans prefer the traditional assistance of pateras (midwives) to modern medicine.

## ***Acculturation Processes***

It is my view that acculturation is a process that involves several variables. These variables include family roles, gender roles, and socioeconomic variables. It is my belief that when family and gender roles change, then so does culture. I have a sense that changes in gender roles are a result of socioeconomic conditions and these socioeconomic conditions vary by group. On the other hand, what I am not suggesting is that socioeconomic conditions directly change culture. However, socioeconomic conditions are the only variables that can really be measured in my analysis of culture. Although it can be hypothesized that socioeconomic conditions may effect family and gender roles and this effects culture, there is no definitive process of measuring this theoretical relationship. Related to the discussion of culture is the role history plays in culture. The history of Mexicans, Cubans, and Puerto Ricans is diverse. Each group's culture is the result of their distinct circumstances. The Mexican experience is one of conquest and economic exploitation. The Cuban experience is one of Cold War international politics. The Puerto Rican experience is one of dependency and patriarchy. I argue that history can be used to link culture to acculturation and the historical periods and time can be used to understand acculturation.

### **Baca-Zinn, Maxine**

1994 "Mexican-Heritage Families in the United States." Pp. 161-72 in *Handbook of Hispanic Cultures in the United States: Sociology* edited by Felix Padilla. Houston: Arte Publico Press.

In discussing modern trends in the Mexican American family, Baca-Zinn argues that the family should be viewed within the larger context of adaptation to social and economic conditions. She suggests that traditional Mexican family values of close relationships and male domination are not deviant, but are adaptive measures in an often inhospitable social environment. In short, an analysis of the family has to consider culture in relation to social structure. The modern Mexican family tends to have a lower socioeconomic status than Non-Latino Whites, are more likely to be married and marry at a younger age than Non-Latino Whites, and have higher fertility rates and larger families than Non-Latino Whites. The intersection between culture and structure is seen in the interaction between migration,

extended family, and economic conditions. Many Mexicans who migrate to the U.S. already have family in the U.S. These families form the basis for an extended family network. In times of economic adjustment, the extended family may assist financially and help with child care. Gender roles are directly related to a discussion of the family. Gender roles are connected to the degree of acculturation of the family because in Latino culture, women are associated with the propagation of culture. As gender roles change, so does the nature of the family and culture transforms. The connection between gender roles, family and culture can be analyzed in looking at the Mexican experience. Historically for Mexicans, the primary task of women was to care for their family and accept subordination. Baca-Zinn suggests that as more Mexican women entered the workplace, egalitarianism increased in Mexican families. This move toward egalitarianism was driven by economic imperatives. Although elements of patriarchy still do exist in attitudes toward family and gender roles, the author argues, some social conditions seem to be connected with more equality for wives. The relationship between gender roles provides a basis for a comparison of acculturation among the Latino subgroups.

### **Bean, Frank D. and Marta Tienda**

1987 *The Hispanic Population in the United States*. New York: Sage.

This book proposes that historical and social processes significantly effect cultural identity. These processes are interactive and impact contemporary social and economic conditions of Latinos. These conditions can effect cultural identity. History and social circumstances assist in the interpretation of the diverse acculturation experiences and socioeconomic status of Latinos.

### **Habermas, Jurgen**

1976 *Legitimation Crisis*. London: Heinemann.

In this book, Habermas discusses crisis as related to two integration systems; social and system. The system integration system is representative of the dominant society. It seeks to control and dictate the society. The social system is related to culture, it is based on symbols. Society is always evolving. This evolution is based on what best functions for the dominant society. However, what is best for the dominant society is not necessarily best for all

members of that society and this leads to conflict. Conflict arises because groups in society seek to maintain their social system and they do this through “life-worlds.” Life-worlds are the symbols, rituals, and traditions of a culture. Life-worlds facilitate and allow for intergenerational communication and the transmission of a cultural identity. Life-worlds develop a person’s sense of self. Life-worlds are borne out of history. As histories vary, so do life-worlds.

**Hernandez, Jose**

1994 “Hispanics Blend Diversity.” Pp. 17-34 in *Handbook of Hispanic Cultures in the United States: Sociology* edited by Felix Padilla. Houston: Arte Publico Press.

Hernandez discusses five stages of Anglo-American policy that had ramifications for Latinos in the United States. These stages are (1) occupation of conquered lands, (2) internal colonization, (3) restricted citizenship, (4) external colonization, and (5) oppression in an global economy. Mexicans, Cubans, and Puerto Ricans have different histories based on their experiences at any one of these stages. These experiences are related to issues of conquest and occupation, economic exploitation, and immigration. Contemporary Cuban socioeconomic conditions for Latino subgroups can be traced back to their differential histories.

**James, Sherman A.**

1993 “Racial and Ethnic Differences in Infant Mortality and Low Birthweight: A Psychosocial Critique.” *American Journal of Preventive Medicine* 9:130-6.

James argues that there is an unexplained factor that contributes to the low rate of low birthweight among Mexicans. He suggests that this factor may be psychological in nature and positive psychological benefits are derived from a Mexican cultural orientation steeped in symbols. James proposes that this orientation results in positive health outcomes. James’ argument is consistent with Habermas’ (1976) discussion of life-worlds, particularly the emphasis on symbols in the maintenance of culture.

**Magana, Aizita and Noreen M. Clark**

1995 “Examining a Paradox: Does Religiosity Contribute to Positive Birth Outcomes in Mexican American Populations?” *Health Education Quarterly* 22:96-109.

The authors write that the Virgin of Guadalupe is a religious symbol that provides strength, warmth, and power to Mexicans and particularly to Mexican women. This, they argue, is due to the connection of the Virgin of Guadalupe with motherhood. The Virgin of Guadalupe is representative of maternal strength, the protection of children, and life itself. Magana and Clark suggest that it is this symbol that contributes to the positive birth outcomes for Mexicans. They argue that because of the maternal association with the Virgin of Guadalupe, Mexican women are more likely to engage in health behaviors that will result in positive pregnancy outcomes. The authors suggest that women who proscribe to the power of the symbol of the Lady of Guadalupe, in an effort to emulate her, will avoid smoking and alcohol, be modest in their sexual relationships, and maintain a diet based on traditional foods.

**Marin, Gerado and Barbara VanOss Marin**

1991 *Research with Hispanic Populations*. Newbury Park: Sage.

Marin and Marin recognize that Latino heterogeneity exists, but argue that common values are shared due to a common language, historical roots of Spanish colonization, and the shared religion of Roman Catholicism. The authors suggest that issues related to allocentrism, simpatia, familialism, statuses, personal space, time orientation, and gender roles, reflect values that are common to all Latinos. Allocentrism is a form of collectivism in which the needs of the “in group” of are primary concern. Simpatia is related to allocentrism and promotes behaviors that facilitate congenial social relationships. Familialism is a person’s strong identification and attachment to their families. This attachment is characterized by loyalty, reciprocity, and solidarity among family members. Regarding status relationships, the authors suggest that Latinos subscribe to notions about power distance which dictate that there are individuals in society who have power due to inherited or acquired traits or characteristics. Marin and Marin also argue that Latinos are more comfortable being in close physical proximity with others than are Non-Latino Whites. The authors further suggest that Latinos are present time oriented and flexible in their attitudes toward time. In discussing gender roles, Marin and Marin suggest that much has been written about the Latino male and machismo (i.e., assuming the role of being strong, in control, and the family provider). Conversely, Latino women have been characterized as

submissive and having no power or influence. However, the authors note, the issue of gender roles is in flux given the ever changing social and economic circumstances of Latino families. Although Marin and Marin's discussion on Latino values appear to over generalize, it provides a basis in which to compare differences among Latino subgroups.

### **U.S. Bureau of the Census**

1992 *Statistical Abstract of the United States 1992*: (112th edition). Washington, D.C.: U.S. Government Printing Office.

The majority of the literature regarding acculturation and Latinos addresses Mexican Americans. This is logical since the majority of Latinos in the U.S. are Mexican. According to the U.S. Census Bureau, 60.1% of the Latino population in the U.S. are Mexican, 12.1% Puerto Rican, and 4.7% Cuban.

### ***Differential Socioeconomic Conditions Among Latinos***

Data on the social and economic characteristics of the Latino subgroups demonstrate that the groups are heterogenous in socioeconomic status (SES). Cubans tend to have a higher socioeconomic status than Mexicans and Puerto Ricans. The data on Mexicans and Puerto Ricans is mixed in terms of socioeconomic status. The Oropesa and Landale (1995) study addresses generational effect on SES. SES indicators included income, education, occupation, poverty rate, and use of public assistance. Immigration and place of birth are important factors behind SES conditions.

### **Oropesa, R. S. and Nancy S. Landale**

1995 "Immigrant Legacies: The Socioeconomic Circumstances of Children by Ethnicity and Generation in the United States (Revised Edition)." Working Paper 95-01. Population Research Institute. Pennsylvania State University.

The authors examined socioeconomic indicators for three generations of Mexican, Cuban, and Puerto Rican children (17 years of age and younger) using 1990 U.S. Census data. Comparisons were made on the socioeconomic indicators of median household income, poverty rate, educational attainment, and occupational status. It was found that first, second, and third generation Cubans had higher median incomes

than Mexicans and Puerto Ricans of the same generations, and first, second, and third generation Mexicans had higher median incomes than Puerto Ricans of the same generations. More first, second, and third generation Puerto Ricans were below the poverty line and on public assistance than Cubans and Mexicans of the same generations, and more first second and third generation Mexicans were below the poverty line and on public assistance than Cubans of the same generation.

More first, second, and third generation Cuban heads of households had college degrees than Puerto Ricans. More second generation Puerto Ricans had college degrees than Mexicans of the same generation. However, by the third generation, Mexicans and Puerto Ricans were about equal in the percentage of heads of households with college degrees. The increase in second to third generation heads of households with college degrees is greater for Mexicans than Puerto Ricans.

More first generation Puerto Ricans were in white collar occupations than Cubans and Mexicans of the same generation and more first generation Cubans than Mexicans were in white collar occupations. However, by the second generation, Cubans overwhelmingly overtake Puerto Ricans in heads of households in white collar occupations. Mexicans slightly improve but still remain behind Cubans and Puerto Ricans. By the third generation, Cubans minimally improve but were still ahead of Puerto Ricans and Mexicans, Puerto Ricans slightly improve, and Mexicans improve almost twice as much from the second generation but were much closer to Puerto Ricans.

### **Ortiz, Vilma**

1994 "Women of Color: A Demographic Overview." Pp. 13-40 in *Women of Color in U.S. Society* edited by Maxine Baca-Zinn and Bonnie Thornton Dill. Philadelphia: Temple University Press.

### **Pedraza-Bailey, Silvia**

1985 *Political and Economic Migrants in America: Cubans and Mexicans*. Austin: University of Texas Press.

This study found that Cubans were (1) more educated, (2) had more workers in skilled labor, (3) had more workers in professional occupations, and (4) had higher annual earnings than Mexicans.

**Rumbaut, Ruben G.**

1995 "Immigrants from Latin America and the Caribbean: A Socioeconomic Profile." Statistical Brief No. 6. East Lansing: The Julian Samora Research Institute.

Rumbaut found (1) more Mexicans and Puerto Ricans were below the poverty line than Cubans and more Puerto Ricans were below the poverty line than Mexicans, (2) More Puerto Ricans were on public assistance than Cubans and Mexicans and more Cubans were on public assistance than Mexicans, (3) the per capita income of Cubans is greater than that of Puerto Ricans and Mexicans and the per capita income of Puerto Ricans is greater than that of Mexicans (4) Cubans were more educated than Mexicans and Puerto Ricans, and Puerto Ricans were more educated than Mexicans.

**U.S. Bureau of the Census**

1992 *Statistical Abstract of the United States: 1992*: (112th) edition). Washington, D. C.: U. S. Government Printing Office.

Regarding total family annual income, or most income ranges, Cubans were better off than Mexicans and Mexicans were better off than Puerto Ricans. The only exception were in the less than \$5,000 range where Cubans and Mexicans were even, the \$10,000-\$14,000 range where there were less Puerto Ricans than Mexicans, and the \$23,000-\$49,000 range where there were only slightly more Mexicans than Cubans. "Better off" means that there were a smaller proportion of the group in the lower ranges and a higher proportion of the group in the higher ranges.

Regarding occupational distribution, Cubans tend to be in the higher status occupations (managerial and professional) while Mexicans tend to occupy the lower status occupations (operators, fabricators, laborers, farming, forestry, and fishing). Puerto Ricans do better than Mexicans in the higher status occupations and had slightly less numbers in the lower status occupations. However, they did not fare as well as Cubans.

***Food Habits, Nutrition, and Culture***

The literature suggests that the foods people eat vary by culture. In other words, the diets of Mexicans, Cubans, and Puerto Ricans are found to be culture specific. Research also indicates that since food habits vary, then so do the types and amounts of nutrients that are ingested.

**Freedman, Robert L.**

1977 "Nutritional Anthropology: An Overview." Pp. 1-23 in *Nutrition and Anthropology in Action* edited by Thomas K. Fitzgerald. Assen: van Gorcum.

In this chapter, Freedman presents the basic premises and tenants of nutritional anthropology. He defines nutritional anthropology as the application of anthropological data and methodology in addressing the cultural aspects of problems associated with nutrition. The author views nutritional anthropology as the study of the interdependent nature between culture and diet.

**Guendelman S. and B. Abrams**

1994 "Dietary Intake and Patterns Among Mexican American Women of Reproductive Age." Final Report to the California Policy Seminar. Berkeley, California.

Using the Hispanic Health and Nutrition Examination Survey, 1982-84, and the National Health and Nutrition Examination Survey, 1976-80, these researchers found that Mexican Americans had higher intakes of the nutrients of protein, folic acid and zinc as compared to Non-Latino Whites.

**Johnston, Francis E. (editor)**

1987 *Nutritional Anthropology*. New York: Liss.

This book is a collection of studies and articles in nutritional anthropology. The articles are an eclectic mix of interests. Johnston, in the opening editorial comments, defines nutritional anthropology as "that branch of anthropology which deals with nutrition as a process and as a science... and brings anthropological concerns to the study of food, and, since food is defined culturally (rather than biologically), has a predominant social and cultural focus." This book is good for a sampling of the types of interests and research conducted by nutritional anthropologists.



1968 *Food and Man*. New York: John Wiley and Sons.

This book offers a general overview of the relationship between food and culture. It looks at the role of food in a historical context. The book also analyzes the importance of food and nutrition as related to a society's quality of life and standing in the global community.

**Marks, Gary, Melinda Garcia, and Julia M. Solis**

1990 "Health Risk Behaviors of Hispanics in the United States: Findings from the HHANES, 1982-84. *American Journal of Public Health* (Supplement) 80:29-26.

This study found subgroup differences in dietary practices among Latinos. The authors used the Hispanic Health and Nutrition Examination Survey, 1982-84, as their data source. The authors created a diet index which measured two components. One component measured the degree to which one's diet was balanced, and one measured "junk food" intake. A balanced diet meant that the person was frequently consuming foods from each food group (meats, dairy, fruits, vegetables, and grains). Candy, sodas containing sugar, cake, cookies, sugar, etc., were considered junk food. Cuban women had the best scores on the balanced diet component, followed by Mexican American women, with Puerto Rican women having the lowest scores. This suggests that Mexican and Cuban women have much healthier diets than Puerto Rican women. Regarding junk food, Mexican American women had the best scores (i.e., they did not eat much junk food) followed by Mexican American men. Puerto Rican men had the worse score for junk food intake (i.e., they had a high intake of junk food).

**Romero Gwynn, Eunice and Douglas Gwynn**

1993 "Foods and Dietary Patterns of Latinos of Mexican Descent: Monograph." *University of California Cooperative Extension Department of Nutrition* Davis: Pilot Issue.

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1994 "Foods and Dietary Acculturation Among Hispanics" (in press) in *Hispanic American Encyclopedia*. Davis: Arte Publico Press.

Using the Hispanic Health and Nutrition Examination Survey, 1982-84, the authors analyzed the data to determine if differences existed in food consumption. They evaluated the nutritional status and food intake of several traditional and non-traditional foods. The researchers also examined food patterns of immigrant families from Mexico and Mexicans born in the United States. This study established heterogeneity in food habits among Latinos. For example, it was found that Mexicans eat more tortillas than bread and Cubans and Puerto Ricans eat more bread than tortillas. Differences were also found in frequency of consumption. For example, Romero Gwynn and Gwynn found that in the U.S., 87.7% of the Cubans and 86.4% of the Puerto Ricans do not eat corn tortillas. However, 31.6% of the Mexicans (approximately a third) eat corn tortillas daily and 37.7% eat corn tortillas weekly.

### *The HHANES as a Research Tool*

#### **Hispanic Health and Nutrition Examination Survey, 1982-84**

1987 Public Health Service. Centers for Disease Control. National Center for Health Statistics. Hyattsville, Maryland: U.S. Department of Health and Human Services.

The Hispanic Health and Nutrition Examination Survey (HHANES), 1982-84, data was collected by the National Center for Health Statistics. The data contains sixteen components with a particular focus on nutritional practices and physical health. The sample in the HHANES consisted of three subgroups of Latinos. These groups were Mexicans (from Texas, Colorado, New Mexico, Arizona, and California), Cubans (from Dade County Florida), and Puerto Ricans (from the New York City and parts of New Jersey and Connecticut). The sample was a multistage, stratified, cluster of the three groups.

Limitations: The HHANES is limited because the data was collected 15 years ago. The measure of acculturation is unsophisticated (based on language and self identity). Also, acculturation was only measured for Mexicans and not for Cubans and Puerto Ricans.

A precise measure of low birthweight is not offered. The birthweight data is retrospective and is based on the recollection of mothers. The HHANES does not use medical or birth records in calculating low birthweight. Gestation length is also based on the recollection of mothers. It is measured by mothers response to a question which read, “was the child born earlier than expected, when expected, or later than expected.”

Data in the HHANES does not measure nutrition based on Recommended Daily Allowances (RDA). This makes it difficult to compare data on nutrition with other studies which use RDAs. Additionally, RDA is the most used nutritional measure in studies related to nutrient intake recommendations for pregnant women.

The HHANES did not allow me to answer some of my research questions as well as I would have wanted. The main problem was in combining the components of the HHANES. Data for nutrient intake was drawn from the Dietary Practices, Food Frequency, and Total Nutrient Intake component of the HHANES. Data for low birthweight was drawn from the Child History Questionnaire component of the HHANES. The Child History Questionnaire component does not identify adults by gender. Therefore, I had no way of directly testing the nutrient intake of Latinas in households with low birthweight babies. The Dietary Practices, Food Frequency, and Total Nutrient Intake component did identify adults by gender. I had to combine the two sets and match the Latina cases in the Dietary Practices, Food Frequency, and Total Nutrient Intake component with the low birthweight cases. However, there was no way to know for sure if these women were the mothers of low birthweight babies. I had to rely on proxy and infer that these Latinas were the mothers of the low birthweight babies.

In the HHANES, respondents self identify as either “Other, Mexican/Mexicano, Mexican American, Chicano, Puerto Rican, Bourican, Cuban, Cuban American, Hispano, Latin American/Spanish, Spanish American, or Spanish/Spain.” This poses problems for coding ethnic groups. For example, someone who is Mexican may self-identify as “Spanish” even though they descend from Mexico. As such, there is no precise method for ensuring that a Mexican is a Mexican, a Cuban a Cuban, etc.

Strengths: The HHANES is a national sample. Since the data is national, it does not limit the researcher to one region of the country in conducting analyses. Furthermore, the data includes Mexicans, Cubans, and Puerto Ricans. This allows the researcher to make subgroup comparisons among Latinos.

## **Conclusion**

An interdependent relationship exists between variables that effect low birthweight. However, it seems that the role of culture in effecting low birthweight has not been given its full due in the scientific community. I believe that culture is just as important as biomedical factors in considering low birthweight outcomes. I believe this because of the important role that culture has in effecting how people interact in their environment. Knowing the biomedical effects upon low birthweight is only half the story. To fully understand the phenomenon of low birthweight, culture has to be considered. If only the biomedical aspects of a group is addressed, then researchers are only focusing on the machinery of being human, not what makes humans human.

What this bibliography points out, is that a complicated issue like low birthweight can not be examined in isolation. This lends support for interdisciplinary approaches to research. With so much information out there in so many different fields and subfields, it is almost impossible for one person to be familiar with all that has been written about a particular topic. Although this bibliography is not all inclusive, it is my hope that it will make the job of familiarity a little easier.

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