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Maternal familism predicts birthweight and asthma symptoms three years later

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ABSTRACT

There are marked ethnic and socioeconomic differences in birthweight and childhood asthma, conditions which may be linked causally or via a third variable. Cultural resources are often credited with diminished health disparities in infancy and childhood among subsets of poor and minority populations; yet direct empirical tests of this hypothesis are needed. In this study, ethnicity, lifespan family socioeconomic position (FSEP), and the cultural resource of familism were compared as predictors of birthweight and expression of asthma symptoms (AE) by age three. Familism and lifespan FSEP were assessed in 4633 socioeconomically disadvantaged African Americans, White Americans, and Latinas upon giving birth, as was offspring birthweight. AE was assessed in offspring through age three. Asthma diagnosis by age three was likelier in very low (≤1500 g) and low (≤2500 g) birthweight infants compared to infants born at average (2501–3999 g) or larger (≥4000 g) birthweights. Asthma risk associated with lower birthweight was higher for Latinos (17–35%) and African Americans (19–23%) than for White Americans (13–14%). As predicted, maternal familism was higher among White Americans than among African Americans and Latinas, an effect that was largely driven by ethnic disparities in lifespan FSEP. Familism predicted continuous birthweight ($p = .003$) and AE ($p = .001$) by age three independently of ethnicity and lifespan FSEP accounting for appropriate control variables, including maternal biomedical risk, maternal acculturation, parental marital status, and infant sex. There was a 71-g gain in birthweight for every one-unit increase in familism. The protective effect of familism on AE by age three was strongest for participants of lower lifespan FSEP. Maternal familism is one cultural resource that may reduce reproductive and intergenerational health disparities in both U.S.- and foreign-born Americans. Consistent with our previous work, familism and other nonmaterial resources covary with material resources. Nevertheless, culture is distinguishable from lifespan FSEP and ethnicity, and has health implications beyond associations to ethnicity, lifespan FSEP, and related biomedical and sociodemographic factors.

Introduction

Anticipation and celebration of new life are common to all cultures, even when circumstances are difficult. Still, the likelihood of beginning life in optimal health varies greatly between individuals and groups of people. Adverse birth outcomes, such as very low birthweight (VLBW; ≤1500 g) and low birthweight (LBW; ≤2500 g) and related health conditions, including childhood asthma symptoms, disproportionately burden ethnic minorities and individuals of lower socioeconomic position (SEP) (Bloom & Dey, 2006). An important caveat is that links from SEP to birthweight and asthma are less reliable among certain segments of ethnic minority populations in America, including those who are presumed to be less acculturated to mainstream America and/or to have retained more traditional values, particularly surrounding family (Cagney, Browning, & Wallace, 2007). In fact, despite high rates of poverty, unassimilated minorities are among the healthiest Americans, particularly where pregnancy and birth outcomes are concerned (Campos et al., 2008; Markides & Coreil, 1986). The paradoxical association of good health and poor socioeconomic resources in newer, presumably unassimilated Americans was initially observed in U.S. Latinos and was, thus, first referred to as the Latino Paradox (Markides & Coreil, 1986). As the phenomenon is increasingly observed in other groups, including U.S.- and foreign-born Blacks and Whites (Desai, Kan, & Rosenberg, 2002; Dey & Lucas, 2006), it is becoming more broadly known as the Epidemiological Paradox.

Cultural resources are commonly credited with these now well-documented unexpected health advantages in unassimilated Americans; but direct empirical tests of this hypothesis are needed.

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One major challenge to testing this hypothesis is the complex overlap and synergy among ethnicity, nativity, SEP, and cultural orientation (Abdou et al., 2010). In this study, we directly test this hypothesis by examining the independent and combined effects of ethnicity, lifespan family SEP (FSEP), and the cultural resource of familism (assessed as maternal endorsement of traditional views on familial obligation; Sabogal, Marín, Otero-Sabogal, & Marín, 1987), on birthweight and on childhood asthma expression (AE). Specifically, we hypothesized that cultural resources predict health over and above their relationships to ethnicity, nativity, and lifespan FSEP. Familism in particular, because of its direct relevance to childbearing and rearing, was predicted to be one cultural resource that may impact health across multiple generations.

Culture

Although conceptual definitions of culture and ethnicity differ greatly, it is common in quantitative health research to treat them as synonymous and, in particular, to operationalize culture as ethnicity (Abdou et al., 2010). *Culture* is used here to refer to socially held beliefs that allow for the evaluation of life experiences as normative and/or ideal (Fiske, Kitayama, Markus, & Nisbett, 1998; Triandis, 1984). We follow the recommendation in the literature that studies of cultural differences should examine the specific cultural element(s)—in this case, familism—hypothesized to be relevant to the process or outcome of interest (Betancourt & López, 1993; Oyserman, Coon, & Kemmelmeier, 2002a). In contrast, *ethnicity* is used to refer to social identification on the basis of shared phenotype, social conditions, language, or heritage more broadly. African Americans, White Americans, and Latinos are the three ethnic groups included in the present study. Group-level values about the self and relationships to others are commonly assimilated into individual value systems or personalities (Oyserman, 2002). Therefore, variability in the cultural value of familism was assessed both between (i.e., group differences) and across (i.e., individual differences) the three ethnic groups involved in this study.

Familism

Familism, like culture more broadly, has been defined, measured, and labeled numerous ways (Steidel & Contreras, 2003). Definitions of familism can be distilled into the belief that priority should be given to family relationships, roles, and responsibilities (Gaines et al., 1997). Familism has been studied primarily in Mexican Americans (Steidel & Contreras, 2003), but also in other Latinos, in African Americans (Abdou et al., 2010; Gaines et al., 1997), and in White Americans (Bardis, 1959; Coohey, 2001; Heller, 1970).

Studies of ethnic differences in familism and related cultural "meta-constructs" (Oyserman, Coon, & Kemmelmeier, 2002b), such as collectivism and communalism, have been mixed, alternately confirming (Campos et al., 2008) and challenging (Abdou et al., 2010; Schwartz, 2007) popular assumptions of the relational attributes of certain ethnic groups, including the emphasis on interdependence vs. independence. Some studies have found sex, age, and acculturation (commonly assessed as nativity and years in the U.S.) to be critical moderators of ethnic differences in familism. Specifically, ethnic differences in familism appear to be more probable in male, older, and less acculturated samples (Gaines et al., 1997; Steidel & Contreras, 2003). Other studies have found SEP to be more important than ethnicity in predicting familism, such that greater value is adaptively placed on kinship in the presence of fewer material resources (Luna et al., 1996; Stack, 1974). Still other researchers have suggested that impoverished contexts rarely succeed at sustaining priority for close relationships, largely due to higher stress burden (McLoyd, 1998; Repetti, Taylor, & Seeman, 2002), suggesting that fewer material resources may actually be associated with lower familism.

Studies also seem to indicate that ethnic differences in familism may reflect measurement differences. Familism is generally assessed along four dimensions in the literature: (a) attitudinal familialism, (b) perceived familial support, (c) family as referents, and (d) the dimension most relevant to the present study, familial obligation (Luna et al., 1996; Sabogal et al., 1987; Steidel & Contreras, 2003). To paraphrase George (1986), familial obligation involves the belief that family members should fulfill their roles and responsibilities, including spousal and filial obligations, even in the face of individual motivations to do otherwise.

Although trends in the literature suggest that *whether* and *how* specific cultural factors, including familism, are measured in general and within specific ethnic groups change over time, it remains the case that specific cultural factors are not equally likely to be studied in all ethnic groups (Schwartz, 2007). Similarly, it is common for cultural measures to be designed for use with specific ethnic groups (see Gaines et al., 1997 and Luna et al., 1996 for exceptions). Like the epidemiological paradox (formerly known as the Latino paradox), familism was initially conceptualized as a Latino construct. As a result, the majority of familism measures were developed as measures of Latino familism specifically (Luna et al., 1996). Similarly, although familism is studied in other ethnic groups with increasing frequency, it is still most likely to be studied in Latinos (Steidel & Contreras, 2003).

Schwartz (2007) proposed that all ethnic groups are familistic to some degree, which seems plausible given the significance of family to all societies. While familism appears to be a human value (rather than, for example, a Latino value), multiple factors likely determine endorsement of familial or any other beliefs. Personality, contextual constraints, and situational cues are a few factors likely to impact endorsement of values like familism (Oyserman et al., 2002a; Schwartz, 2007).

Family, birthweight, and asthma

We have come to appreciate the extent to which the intrauterine environment determines quantity and quality of life (O'Keane & Scott, 2005). Adverse birth outcomes, such as LBW, are major family stressors and serious public health concerns. There are demonstrated links from LBW to long-term health consequences, including cardiovascular disease and adverse pregnancy outcomes in subsequent generations (Barker, 2000; Lu & Halfon, 2003). Also evidenced are more immediate health consequences of LBW, including increased risk of asthma and more severe asthma symptoms (Kumar, 2008; Villamor, Iliadou, & Cnattingius, 2009).

Significant ethnic and socioeconomic differences exist in pregnancy outcomes (Martin et al., 2006). With at least twice the odds of experiencing an adverse birth outcome, African Americans are worst off. Latinos are very difficult to generalize about at the aggregate. Latino birth outcomes vary tremendously by degree of acculturation, as assessed by place of birth and duration in the United States (Zambrana, Scrimshaw, Collins, & Dunkel-Schetter, 1997), and by Latino subgroup (Martin et al., 2006). To a large extent, Cubans and Mexicans drive the favorable birth outcomes of U.S. Latinos (who are both U.S.- and foreign-born), with LBW rates actually lower than U.S.-born White Americans, whereas Puerto Rican outcomes resemble African American outcomes (Rosenberg, Raggio, & Chiasson, 2005).

Stratification of favorable birth outcomes by Latino subgroup does not necessarily coincide with greater availability of socioeconomic resources (Collins & Shay, 1994). Although Cubans are fairly