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Self-Rated Health Across Race, Ethnicity, and Immigration Status for US Adolescents and Young Adults

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A B S T R A C T

Purpose: Health disparities research seeks to understand and eliminate differences in health based on social status. Self-rated health is often used to document health disparities across racial/ethnic and immigrant groups, yet its validity for such comparative research has not been established. To be useful in disparities research, self-rated health must measure the same construct in all groups, that is, a given level of self-rated health should reflect the same level of mental and physical health in each group. This study asks, Is the relationship between self-rated health and four indicators of health status—body mass index, chronic conditions, functional limitations, and depressive symptoms—similar for adolescents and young adults of different races/ethnicities and immigrant generations?
Methods: Ordinary least squares regression was used to examine associations of self-rated health with the four indicators of health status both cross-sectionally and longitudinally using four waves of the National Longitudinal Study of Adolescent to Adult Health.
Results: Health indicators explained similar amounts of variance in self-rated health for all racial/ethnic and immigrant generation groups. The cross-sectional association between the health indicators and self-rated health did not vary across groups. The longitudinal association between depressive symptoms and chronic conditions and self-rated health also did not differ across groups. However, an increase in body mass index was associated more negatively with later self-rated health for Asians than for whites or blacks.
Conclusions: Self-rated health is valid for disparities research in large, population-based surveys of US adolescents and young adults. In many of these surveys self-rated health is the only measure of health.

IMPLICATIONS AND CONTRIBUTION

This research demonstrates that it is valid to use self-rated health to compare the health status of adolescents and young adults in different racial/ethnic and immigrant generation groups. This facilitates disparities research with national surveys in which self-rated health may be the only measure of health.

Health disparities research seeks to identify, understand, and eliminate differences in health between racial/ethnic groups [1]. Self-rated health is a potentially useful measure for health disparities research [2–4]: It consists of a single, easy-to-measure item, is commonly included in national and international surveys [5], and is correlated with multiple health outcomes [6], including chronic physical illnesses [7,8], emotional distress [7], disability and functional limitations [8,9], and obesity [7,9]. Self-rated health consistently predicts later morbidity and mortality [10,11], including both diagnosed illness [12] and subclinical markers of stress and inflammation [13]. Despite the frequent use of self-rated health for comparative

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research [2,3,14], no studies have examined whether it is an appropriate measure to examine disparities across racial/ethnic groups among US adolescents and young adults. This article addresses that gap.

To be a useful measure in health disparities research, self-rated health must measure the same construct in all racial/ethnic groups, that is, a given level of self-rated health must reflect the same level of objective health in each group [15]. Some studies [15–17] have found that among adults, the association between self-rated health and objective health differs across racial/ethnic groups and between immigrants and native-born Americans. The most consistent finding is that, given similar health status, Latinos rate their health lower than do whites [15–17]. These findings suggest that the measure should not be used for comparative research.

Other studies find that self-rated health is valid for cross-group comparisons of adults [18,19]. One explanation for inconsistent findings is that discrimination confounds the association between self-rated health and objective health status [20,21]. Boardman [21] finds that the black-white disparity in self-rated health disappears once discrimination is taken into account.

Most previous studies are limited in sample representativeness [15,17], focus on middle-aged or older adults [17,18], compare only two racial/ethnic groups [22], or focus on differences by immigrant generation for Latinos only [16,17,23]. No studies have compared the association between self-rated health and health status among adolescents, although two studies have found that during adolescence the association between self-rated health and health risk behaviors/exposures differs by race/ethnicity [24,25]. The inconsistent findings for adults, absence of studies for adolescents, and relatively frequent use of self-rated health in comparative research create an imperative for examining whether the association between self-rated health and health status is similar across racial/ethnic and immigrant groups of adolescents and young adults.

This study uses the National Longitudinal Study of Adolescent to Adult Health (Add Health) [26], a nationally representative, longitudinal sample of US adolescents and young adults, to test whether the relationships between self-rated health and physical and mental health are similar for adolescents of different racial/ethnic groups and immigrant generations. This study overcomes many of the limitations of the existing research: It uses a large, nationally representative sample; it studies multiple racial/ethnic groups and three immigrant generations; it assesses whether the relationship between self-rated health and health status is stable across adolescence and into adulthood; and it examines whether a change in health status over time corresponds to a similar change in self-rated health across groups. If the relationship is similar across groups and across time, then self-rated health can be used with confidence to study health disparities. This would facilitate the use of large, population-based surveys in which self-rated health is sometimes the only measure of health available.

Methods

Add Health is a nationally representative sample of young adults who were 7th–12th graders in 1994–1995. Respondents were interviewed in the home (along with one parent) in 1995 (Wave 1, ages 11–21 years), with follow-up interviews in 1996 (except for those in 12th grade at Wave 1; Wave 2, ages 11–23 years), 2001–2002 (Wave 3, ages 18–28 years), and 2008–2009 (Wave 4, ages 24–34 years) [27]. We used data from all four in-home interviews and the Wave 1 in-home parent interview. We excluded (1) American Indian/Alaska Native respondents because of small sample sizes (Wave 1 n = 89) and (2) cases without sampling weights. Final sample sizes were 17,934 in Wave 1; 13,192 in Wave 2; 13,666 in Wave 3; and 14,231 in Wave 4. The University of Tennessee Institutional Review Board approved this study.

Self-rated health was measured at each wave with a single question: "In general, how is your health? Would you say…" Response options included "poor" (0), "fair" (1), "good" (2), "very good" (3), and "excellent" (4).

Race/ethnicity was based on self-report in Wave 1. Respondents were asked to identify their race and, in a separate question, to identify whether they were Hispanic/Latino. Race/ethnicity was coded such that Latino ethnicity superseded racial identity. Non-Latino respondents who selected more than one race were coded as multiracial. Final categories included Latino, non-Latino Asian, non-Latino black, non-Latino white, and non-Latino multiracial. In stratified analyses of Latinos and Asians, we controlled for national origin. Latino national origin groups included Mexican, Puerto Rican, Cuban, Central/South American, and other. Asian groups included Chinese, Filipino, Japanese, Asian Indian, Korean, Vietnamese, and other.

Immigrant generation was based on the respondent's and parents' places of birth. First-generation immigrants were born outside the US to both foreign-born parents. Second-generation immigrants were US-born to at least one foreign-born parent or were born abroad to at least one US-born parent. Third-plus generation were US born to US-born parents [28]. When data for biological parents was not available, measures for residential parents were used.

Four measures of physical and mental health status were included: depressive symptoms, functional limitations, body mass index (BMI), and chronic physical conditions. Depressive symptoms were measured using a modified 20-item Center for Epidemiologic Studies Depression Scale (CESD-20) [29]. Respondents were asked 19 CESD-20 items in Waves 1 and 2 but only nine items in Waves 3 and 4. The nine-item CESD-9 scale, which has been shown to be valid across races/ethnicities [29], demonstrated good reliability in this sample ($\alpha > .75$ for all racial/ethnic and immigrant generation groups). In Waves 1 and 2, the correlation between the nine-item and 19-item CESD scales was .95 and .96, respectively.

The measures of functional limitations differed across waves. In Wave 1, respondents were asked, "Do you have difficulty using your hands, arms, legs, or feet because of a permanent physical condition?" Students who responded "yes" were coded as having a functional limitation. In Wave 2, respondents were asked, "Because of a physical, learning, or emotional condition you have had for at least a year do you have any limitations…" (1) Engaging in strenuous physical activity, (2) attending school/work, (3) doing household chores, or (4) engaging in personal hygiene. Respondents who reported limitations in any area were coded as having a functional limitation. In Wave 3, respondents were asked about whether their health limited them in (1) vigorous activities such as running, lifting heavy objects, or participating in strenuous sports; (2) climbing several flights of stairs; (3) walking more than a mile; or (4) bending, kneeling, or stooping. Respondents who reported being limited "a little" or "a lot" (vs. "not limited") on any of these items were coded as having a functional limitation. In Wave 4, respondents were asked, "How much does