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Changes in Racial Categorization over Time and Health Status: an examination of Multiracial Young Adults in the U.S.

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Abstract

Objective—Multiracial (two or more races) American health related to racial stability over the life course is a pressing issue in a burgeoning multi-ethnic and multicultural global society. Most studies on multiracial health are cross-sectional and thus focus on racial categorization at a single time point, so it is difficult to establish how health indicators change for multiracials over time. Accordingly the central aim of this paper was to explore if consistency in racial categories over time is related to self-rated health for multiracial young adults in the United States.

Methods—Data were drawn from the National Longitudinal Study of Adolescent Health (Add Health) survey (N = 7,957). Weighted multivariate logistic regression was used to exam health status in early adulthood between individuals who switched racial categories between waves 1 and 3 compared to those who remained in the same racial categories.

Results—There were significant differences in report of self-rated health when comparing consistent monoracial adults with multiracial adults who switch racial categories over time. *Diversifying* (switching from one category to many categories) multiracial respondents are less likely to report fair/poor self-rated health compared to single race minority young adults in the fully adjusted model (OR = 0.20; 95% CI [0.06–0.60]).

Conclusion—These results demonstrate the importance of critically examining changes in racial categories as related to health status over time. Furthermore these results demonstrate how the switch in racial categories during adolescence can explain some variations in health status during young adulthood.

Keywords

Racial Categorization; Multiracial; Self-Rated Health; Health Status; Mixed Race; Young Adults

Introduction

In health research, race is often treated as a static characteristic much like gender. Despite the tendency to treat race as a stable and consistent social construct, several studies show that self-reports of race can differ by context or over time (Harris & Sim, 2002; Hitlin, Brown, & Elder, 2006). In particular, self-reports of race vary tremendously for multiracial

(two or more races) persons in the United States. There is some evidence that the multiracial population is the most likely to change racial categories over the life course. When self-reports about race were examined in longitudinal studies, some researchers found that multiracial persons are more likely than monoracial persons to switch their categorization of race (Doyle & Kao, 2007; Hitlin, et al., 2006). This change in self-reported race, however, is not often captured in cross-sectional studies or in population health research. The purpose of this study is to link the possible differences in racial categorization over time to health in a nationally representative sample of American young adults, to investigate whether changes in self-reported racial categories are associated with differences in self-rated health. Although several studies have examined the correlates of switching race from one time point to another, this is one of the few to examine changes in race over time and health for multiracial young adults in the United States.

Background on Race and Health

For well over 100 years social scientists have documented racial inequalities in health. Racial disparities continue to be documented in the population including difference in hypertension (Ong, Cheung, Man, Lau, & Lam, 2007), diabetes (Heisler, Smith, Hayward, Krein, & Kerr, 2003), and breast cancer (Carey et al., 2006). Studies have found that the construct of self-reported race is a significant mechanism in understanding mental health and health disparities, but research is now at a crossroads. One understudied phenomenon is the measurement of changes in racial categorization over time and related health outcomes, though some investigators have found significant health differences when comparing changes in survey interview reports of race over time and mismatch between respondent self-report and interviewer report of observed race (Saperstein, 2012).

Many studies, especially those that rely on surveys, collect self-reported data on race. Self-reports on race are based on people's perception of their racial identity. For the overwhelming majority of Americans the act of self-identification is a consistent process that is fixed by late adolescence (Doyle and Kao, 2007; Nishina, Bellmore, Witkow, & Nylund-Gibson, 2010). However, a small subset of the population do not report their race consistently on surveys. Researchers have examined some of the factors related to differences in self-reported race, such as changes after incarceration (Saperstein & Penner, 2010). Scholars of multiracial identity and categorization find multiracials may self-report different races depending on the region or social and political context (Good, Chavez, & Sanchez, 2010; Harris & Sim, 2002; Rockquemore, 2002; Root, 1992). Because race is a social construct and a marker of self-categorization that can change by context and political definition, an individual's race might change over time. Policy changes regarding the use of multiple categories to report race allow individuals to claim membership in more than one racial group. This change in racial categorization presents a complex challenge to health disparities research.

Most surveys that examine race and health use cross-sectional designs. Although these studies have produced useful insights, the underlying assumption is that race is a stable, static characteristic. Longitudinal data can provide insight about possible changes in self-categorization in race. Several studies use the National Longitudinal Study of Adolescent

Health (Add Health) racial categories over time to learn about the racial formation process, the discordance between parent- and self-reported race (Harris & Sim, 2002; Ruebeck, Averett, & Bodenhorn, 2008), and the stability of race over multiple time points (Doyle & Kao, 2007; Hitlin et al., 2006). These seminal studies found that two of the salient correlates to switching from or remaining in a racial category over time are mothers' education and nativity. Those whose self-reported race remains stable over time are more likely to come from homes where the mothers have more than a high school education, which is used as a proxy for socioeconomic status. Other correlates include the psychosocial well-being of respondents. These factors are all related to health and health outcomes over time, which raises the question of the relationship between racial categorization and health outcomes. Using longitudinal data can provide unique insight into the switch in race over time and any possible relationship to health status in later life. Therefore, the aim of this study is to explore self-reported racial categories over time to see if the switch in self-reported racial categories in adolescence and young adulthood is related to health status in later adulthood among non-Hispanic young adults in the U.S.

Methods

Sample

The data used in this study are from the National Longitudinal Study of Adolescent Health (Add Health), a nationally representative school-based probability sample of Americans. Add Health is a study of youth; researchers began collecting data in 1994 on social and behavioural factors related to health. The details of the sample design have been described elsewhere (Harris, 2013). The original stratified probability sample included 132 schools in the United States. The original sample included more than 90,118 students, and some respondents were selected for in-home interviews with youth and their parents. A total of 20,774 respondents were included in the in-home interview. The response rate was 79%. Past studies have examined the study attrition between waves and found there was a similar rate of attrition for all racial groups including multiracial respondents (Doyle and Kao, 2007). Data for the present study were drawn from Waves 1 (1994–1995), 3 (2001–2002), and 4 (2008) of the Add Health in-home administrative survey. Wave 1 (n = 20,745) was collected in 1994, Wave 3 (n = 15,197) was collected in 2002, and Wave 4 (n = 15,701) was collected in 2008. Data were also taken from the Wave 1 (1994–1995) in-home parent questionnaire. Adult caregivers provided responses to a battery of survey questions. Responses from female caregivers (mothers, stepmothers, grandmothers, female legal guardians) were coded as mother. Only a subset of Wave 4 non-Hispanic respondents who participated in all three waves is included in this sample. Respondents whose Wave 4 sampling weights were unavailable, as well as those with missing data for any of the independent and control variables were excluded; this left a remaining sample of 7,957 when weights were applied.

Dependent Variable Measure

The dependent variable in this study is self-rated health from Wave 4 when the majority of respondents entered early adulthood. All respondents were asked to rate their health in every wave on a 5-point scale from poor to excellent. The survey item reads "*In general, how is*

your health?” with possible response categories of excellent, very good, good, fair, and poor. After preliminary analysis this item was recoded to a dichotomous measure: poor health (1 = poor or fair) or good health (0 = good, very good, or excellent). This approach is widely used and a dichotomous measure is an important distinction because past studies have found that poor compared to good self-rated health is an evident predictor of mortality and morbidity (Idler & Benyamini, 1997).

Independent Variable Measures

The main independent variable is a composite variable of race was only captured in two of four Waves. In Waves 1 and 3, respondents had the option of selecting one or more racial groups (*What is your race? You may give more than one answer.*). Those reporting more than one race were asked to additionally select a single-best race category (*Which one category best describes your racial background?*). Respondents who self-categorized more than one race were considered multiracial. Only non-Hispanic respondents were included in the study in order to strictly examine the social construct of racial categories rather than ethnic categories in the United States. The races used to prepare the categories over time include White (reference), Black, American Indian, Asian, Other Race, and Multiracial. Six race categories were used to capture the changes in categorization over time: consistent monoracial, switching monoracial, consistent multiracial, and switching multiracial including diversifiers (from one to many races) and consolidators (from many to one race).

Consistent monoracial is used to describe respondents who reported the same monoracial (single race) categories in both Waves 1 and 3. *Switching monoracial* is used to capture respondents who selected a different monoracial (single race) category in either Wave 1 or in Wave 3. In past studies, researchers have argued that the individuals who switch monoracial categories over time are possibly multiracial. For the purpose of this paper switching monoracial is a stand-alone group. *Consistent multiracial* is used to describe respondents that selected the same race categories (two or more) in both Waves 1 and 3. Multiracial individuals were labelled distinctly as *switching multiracial* if they changed racial categories in either Wave 1 or 3. *Diversifying switching multiracial* is used to describe respondents who selected a single race category in Wave 1 and selected more than one race categories in Wave 3. *Consolidating switching multiracial* is used to describe respondents who selected two or more race categories in Wave 1 and selected only one race category in Wave 3. In sum there are five groups used in the analysis: consistent monoracial, switching monoracial, consistent multiracial, diversifying switching multiracial, and consolidating switching multiracial.

Covariates

Early Life Socioeconomic Status—Mother’s education is the proxy for early life socioeconomic status. The question was originally ordered into seven categories: none, less than 8th grade, 8th–12th grades, high school or general equivalency diploma (GED), some post-high school, college graduate, professional/graduate training. This measure was collapsed into three distinct categories: (a) less than high school, (b) high school, which includes GED and post-high school, and (c) college degree, which includes 4-year degree and beyond. This measure is a valid proxy for socioeconomic status in early life. Past studies

found differences in switching racial categories by mother's education (Doyle Kao & Kao, 2007; Hitlin et al. & Elder, 2006).

Nativity—Nativity is included in this analysis and captured in the first wave of data. Past studies showed foreign-born respondents were less likely to self-categorize as multiracial (Campbell, 2007).

Sex—Sex was captured in the first wave of data. Sex is included in the model due to possible differences in self-report of health by sex. Past studies showed that adolescent women were more likely to report fair to poor self-rated health (Goodman, 1999).

Age—Age was captured in the third wave of data. Age is included in the analysis in accordance with past research. Past studies found that age is associated with a lower likelihood to self-report fair/poor self-rated health and that individuals who change from many to one race are younger (Hitlin et al., 2006). Additionally, theories from social psychology state that the racial self-categorization process is complete near the end of adolescence; thus, age at the end of adolescence is included as a factor (Doyle & Kao, 2007).

Ethics Approval

Add Health study procedures were approved by the Human Subjects Review Committee at the University of North Carolina, Chapel Hill. The present study was approved by the Center for Studies in Demography and Ecology at the University of Washington under contractual agreement from the Carolina Population Center at the University of North Carolina, Chapel Hill.

Analysis

All analyses were conducted using STATA software version SE 12 (Stata Corp., College Station, TX). Given the sampling framework, Wave 4 grand sampling weights (accessed via the STATA software's "svy" command) were used to account for the non-Hispanic general population in 2008. Application of this weighting technique was used to account for the sampling (oversampling) and inconsistencies in responses across four waves of data. Univariate analyses were used to describe the sample characteristics and differences across time points. Differences in self-rated health were tested using multivariate logistic regression analysis.

Results

Descriptive Statistics

Table 1 presents the sample proportions by race. In both Wave 1 and Wave 3, White Americans make up the majority of the weighted samples. Nearly 17% of respondents self-categorized as Black. Less than 1% self-categorized as American Indian, although there is a slight increase in the proportion in Wave 3. Nearly 4% categorized as Asian American in both Wave 1 and Wave 3. Less than 1% self-categorized as non-Hispanic monoracial Other in Wave 1. This distinction is important because in the full Add Health sample the majority

of respondents who categorized themselves as Other also selected Hispanic ethnicity. In Wave 3 the Other category was not presented as an option. In each wave multiracial respondents constitute nearly 4% of the sample. If either Wave 1 or Wave 3 were used in a cross-sectional design the proportions would be similar across the two; thus, the change across categories might not be observed.

Table 2 presents an unweighted cross-tabulation of self-categorized race, reflecting changes in racial category from Wave 1 to Wave 3. Among the study respondents 4,987 self-categorized as White in Wave 1 and Wave 3. Among those who self-categorized consistently across the two waves, 1,751 reported they were Black, 32 reported they were American Indian, 499 reported they were Asian, and 135 reported they were Multiracial.

Table 3 shows the unweighted sample sizes and the weighted proportions for inconsistencies in categorization over time in an effort to display these changes. Between the two collection points, the overwhelming majority (92%) of the sample reported a consistent single racial category referred to as *consistent monoracial*. A much smaller proportion (2%) of respondents switched from one category to an entirely different category. This group is referred to as *switching monoracial*. In total 6% of the sample identified as multiracial at some point in the study. One percentage of the sample categorized into the same two or more racial categories between Wave 1 and Wave 3. In contrast, 5% of the sample switched into or out of the multiracial category. In this group of switching multiracial there are *diversifiers*, individuals who switched from one race in Wave 1 to many races in Wave 3. There are also *consolidators* who switched from many races in Wave 1 to a single racial category in Wave 3.

Multivariate Statistics

Table 4 presents results from the multivariate logistic regression analysis of the association between self-rated health and changed categories of self-reported race adjusting for a number of covariates. Model 1 reports the results of the bivariate association between fair/poor self-rated health and racial categorization over time. The effects are not significant for any particular group. Model 2 adds the socioeconomic status measure and the odds ratio (OR) for switching multiracial adults is significant. In Model 2, diversifying multiracial young adults are significantly less likely (OR = 0.29; 95% CI [.10–.85], $p < .05$) to report fair/poor self-rated health compared with consistent monoracial young adults. Model 3 adds nativity to the analysis; the odds ratios are no different from those of Model 2. The last model, Model 4, adds two social characteristics, sex and age. Model 4 presents statistically significant differences between diversifying multiracial young adults and consistent monoracial young adults (OR = .30; 95% CI [.10–.85], $p < .05$). In all adjusted models, female caretaker's level of education is associated with fair/poor self-rated health.

Discussion

The central aim of this study was to explore whether changes in racial categorization over time were associated with self-reported health in young adulthood. In particular, this study sought to explore self-reported racial categorization and adverse implications for health among a nationally representative and longitudinal sample of young adults in the United

States. In this study, multiracial Americans who diversify from a single race category to several categories are less likely to report fair/poor self-rated health. One possible explanation for this association between better health and switching racial categories is racial fluidity as a protective factor to health risks. This finding aligns with past qualitative research with individuals who change racial categories over time. The ability to move in and out of racial categories is often associated with a protean identity (i.e., the process by which multiracial respondents assign themselves to whatever category they deem appropriate based upon the context) (Rockquemore & Brunnsma, 2004). Protean identity is theoretically a protective factor from stressors for multiracial individuals. To adapt to context and place individuals with a protean identity switch categories to attempt to avoid discriminatory situations. The process of protean identity aligns with ecological models of identity expression over time and place (Rockquemore & Brunnsma, 2004; Rockquemore, Brunnsma, & Delgado, 2009) and racial formation related to social and political context (Omi & Winant, 1994). To date, this perspective is not widely used in health research. Scholars acknowledge that the approach of protean expression of race is usually based upon biological assumptions of race within a health context (Drevdahl, Philips, & Taylor, 2006; Tashiro, 2005). Whether individuals with a protean identity have better or worse health outcomes has yet to be established.

Racial categorization is a parallel process to racial identification. For the overwhelming majority of Americans, selecting a racial category is a single uncontested choice. Multiracial Americans are individuals who select more than one race when given the option. For some multiracials, the ability to change racial categories might be an important facet of identity (Samuels, 2009). There are several competing hypotheses as to why people switch in and out of racial categories. For some the change in categories could be associated with adverse experiences and, accordingly, are a proxy for racial discrimination or change in self-concept as a result of an adverse experience (e.g., incarceration). For others the change in categorization could be a function of social mobility and change in social class (Korgen, 2010). Or even possibly for others, the change in race over time could reflect responses to policy implementation in a post-civil rights era. Good et al. (2010) examined the use of affirmative action policies and reported that there are several profiles of people who switch into and out of racial categories. Brunmsa (2005) connected the ability to choose different races to “push” factors, certain life experiences that act as a catalyst for people to self-identify differently. Future research is needed to understand the push factors of changes in self-identification and how health is related.

Furthermore, the ability to label oneself with different racial groups/categories might be a part of an individual’s identity, as qualitative studies have discovered (Rockquemore & Brunnsma 2004). In health settings the ability to select and/or change in and out of racial categories might be restricted for a variety of reasons, such as third-party racial assignment (Herman, 2010). Thus, health settings can be contextually discriminatory for multiracial individuals (Tashiro, 2005), and the perception of discrimination can be further distressing if multiracial individuals feel forced to choose (Herman, 2004). Future studies are needed to learn how multiracial individuals interact with the health care system and which differences exist among those who report a consistent race over time and those who switch in and out of races.

Limitations

There are some limitations in this present study. First, past studies have compared interviewers' responses with the respondents to see whether there is concordance in racial categorization. Bratter and Gorman (2011) examined the Behavioral Risks Factor Surveillance System cross-sectional data and found that there was an association between self-rated health and discordance in interviewers' perception of race and the self-categorization of race. Even further, past examinations of the Add Health compare racial concordance between interviewers and respondents with skin colour in Wave 3 and reveal that phenotype is related to concordance for multiracials (Doyle & Kao, 2007). This finding suggests there is a need to investigate phenotypes such as skin colour associated with switching race over time and health outcomes in other samples. Because Add Health does not include interviewer observations of race at multiple time points this study could not draw a comparison of outside perceptions of skin colour and incongruent self-report as in past studies. Second, ethnicity and ethnic identity are cited as critical factors related to consistent self-categorization over time. For foreign-born respondents, being asked to categorize both race and ethnicity on surveys may lead to confusion for the respondent (Campbell, 2010). Since the concept of ethnic identity opposed to race is more prominent in countries outside of the U.S. foreign born respondents might inter-twine the two concepts. In this study, Hispanics, the largest ethnic group in the U.S. were excluded thus the study is unable to report findings based upon ethnicity. Future studies are needed to address this limitation by including ethnicity and observing possible changes in ethnicity over time as related to health status.

Conclusion

Now more than ever before, race is an unstable construct for the majority of multiracial young adults in the United States. At the same time, race is used in the majority of health research often as a proxy for unmeasured factors (LaVeist, 1994). Because race is such a meaningful category and salient proxy for the lived experience we need to re-evaluate the current approaches to incorporate race in health research. In cross-sectional, quantitative studies, self-reported race is assumed to be stable. Several recent longitudinal studies found that there are inconsistencies in race over time for a small subset of respondents in a number of samples. As found in this study, a nuanced approach to racial categories and racial stability over time revealed differences in health status for Multiracial Americans. Future studies are needed to further investigate the relationship between health disparities and changes in race across the life course beyond early adulthood.

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Table 1

Weighted Sample Proportions Add Health Sample Wave 1 (1994) and Wave 3 (2003)

	Wave 1 (%)	Wave 3 (%)
White	74.84	74.85
Black	16.64	16.95
Native	0.57	0.71
Asian	3.50	3.61
Other	0.82	---
Multiracial	3.62	3.89

Note. N = 7,957.

Table 2

Cross-Tabulations of Racial Categorization Self-Report in Wave 1 and Wave 3

Wave 3						
Wave 1	White	Black	Native	Asian	Multiracial	Total
White	4,987	5	2	3	131	5,128
Black	10	1,751	5	0	46	1,812
Native	7	1	32	2	8	50
Asian	8	1	12	499	19	539
Other	28	12	2	14	6	62
Multiracial	110	87	10	24	135	366
Total	5,150	1,857	63	542	345	7,957

Table 3

Sample Characteristics of Racial Categorization Add Health (1994–2003)

	Unweighted Sample Size	Weighted Sample Proportion (%)
Non-switching monoracial	7,269	0.92
<i>Monoracial Majority</i>	4,987	
<i>Monoracial Minority</i>	2,282	
Switching monoracial	137	0.02
Non-switching multiracial	109	0.01
Switching multiracial	442	0.05
<i>Diversifier</i>	236	
<i>Consolidator</i>	206	
Total	7,957	

Note. N = 7,957.

Table 4

Multivariate Logistic Regression to Predict Fair/Poor Self-Rated Health by Independent Variables of Sample Present in Multivariate Analysis

	Model 1 OR 95% CI	Model 2 OR 95% CI	Model 3 OR 95% CI	Model 4 OR 95% CI
Variable				
Consistent monoracial	1.0	1.0	1.0	1.0
Switching monoracial	0.98 0.47–2.03	0.94 0.44–2.01	0.94 0.44–2.00	0.94 0.44–2.10
Consistent multiracial	1.35 0.43–4.25	0.84 0.23–3.02	0.84 0.23–3.02	0.83 0.22–3.03
Switching multiracial: consolidator	1.17 0.65–2.10	1.01 0.51–1.98	1.01 0.51–1.98	1.01 0.51–1.99
Switching multiracial: diversifier	0.45 0.19–1.06	0.29* 0.10–.85	0.29* 0.10–0.85	0.30* 0.10–0.85
Childhood SES				
Mother's education				
Less than high school		1.0	1.0	1.0
High school diploma		0.56*** 0.44–0.71	0.56*** 0.43–0.71	0.56*** 0.44–0.72
College graduate		0.47*** 0.36–0.61	0.47*** 0.36–0.61	0.48*** 0.36–0.62
Nativity				
Foreign born			1.00 0.52–1.92	0.98 0.51–1.88
Sex				
Female				0.94 0.78–1.14
Age				1.03 0.96–1.11

Note. SES = socioeconomic status. $N = 7,957$;

* $p < .05$,

** $p < .01$,

*** $p < .001$.