Letters

RESEARCH LETTER

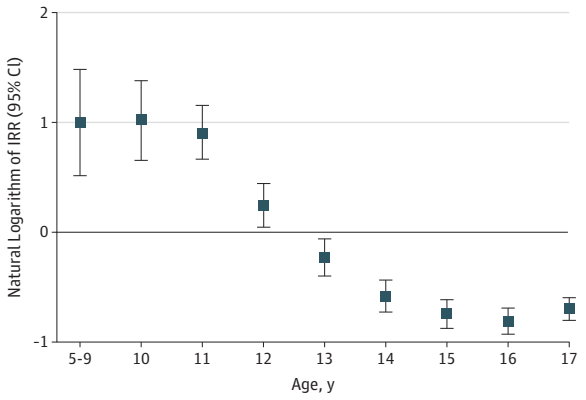
Age-Related Racial Disparity in Suicide Rates Among US Youths From 2001 Through 2015

Suicide rates in the United States have traditionally been higher among white than black individuals across all age groups.[1] However, suicide rates increased from 1993 to 1997 and 2008 to 2012 among black children aged 5 to 11 years (from 1.36 to 2.54 per million) and decreased among white children of the same age (from 1.14 to 0.77 per million).[2] The existing literature does not adequately describe the extent of age-related racial disparities in youth suicide, and understanding racial differences is critical to developing targeted prevention efforts. Therefore, we compared age-specific suicide rates between black and white youths from 2001 through 2015.

Methods | Data for which suicide was listed as the underlying cause of death among youths aged 5 to 17 years from January 1, 2001, through December 31, 2015, were obtained from the Web-based Injury Statistics Query and Reporting System (WISQARS) of the Centers for Disease Control and Prevention.[3] Annual number of deaths was extracted by sex, age, and race (black or white). Suicide rates were calculated using population estimates obtained from WISQARS. Age-specific incidence rate ratios (IRRs), corresponding natural logarithms, and 95% CIs comparing suicide rates between black and white youths were estimated using negative binomial regression. Analyses were performed using Stata/IC statistical software (version 13.1; StataCorp) and a 2-tailed significance level of $P < .05$. This study was not considered to be human subjects research by the institutional review board of Nationwide Children's Hospital, Columbus, Ohio.

Results | We identified 1661 suicide deaths among black youths (1225 boys [73.8%] and 436 girls [26.2%]) and 13 341 suicide deaths among white youths (9916 boys [74.3%] and 3425 girls [25.7%]) in the United States from 2001 through 2015. During this period, the suicide rate was approximately 42% lower among black youths (1.26 per 100 000) than among white youths (2.16 per 100 000). However, this racial difference was strongly moderated by age (**Figure** and **Table**). Among children aged 5 to 12 years, black children had a significantly higher incidence of suicide than white children (IRR, 1.82; 95% CI, 1.59-2.07), whereas from 13 to 17 years, the suicide rate was approximately 50% lower among black youths than among white youths (IRR, 0.51; 95% CI, 0.48-0.53). This pattern of results was similar in analyses stratified by sex (Table). No evidence suggested that the observed age-related racial differences in suicide rates changed from 2001 through 2007 and from 2008 through 2015 (IRR, 1.05 [95% CI, 0.77-1.42; $P = .76$] for race × period interaction in 5- to 12-year-old individuals; IRR, 1.04 [95% CI, 0.93-1.17; $P = .49$] for race × period interaction in 13- to 17-year-old individuals).

Figure. Comparison of Suicide Incidence Rates Between Black and White Youths in the United States From 2001 to 2015 by Age



Squares indicate the estimated natural logarithm of the age-specific incidence rate ratio (IRR); vertical lines, 95% CI. The reference group is white youth. The 95% CIs that do not include zero are considered to be statistically significant.

Discussion | Our findings provide further evidence of a significant age-related racial disparity in childhood suicide and rebut the long-held perception that suicide rates are uniformly higher among white than black individuals in the United States.[1] Analyses revealed that the suicide rate among those younger than 13 years is approximately 2 times higher for black children compared with white children, a finding observed in boys and girls. The large age-related racial difference in suicide rates did not change during the study period, suggesting that this disparity is not explained by recent events (eg, economic recession).

Although findings highlight an important opportunity for more targeted intervention, these data are limited and cannot elucidate potential mechanisms for observed age-related racial differences. We lacked information on key factors that may underlie developmental racial differences in suicide, including access to culturally acceptable behavioral health care[4] or the potential role of death due to homicide among older black adolescents[5] as a competing risk for suicide in this subgroup. Future studies should aim to clarify whether risk and protective factors identified in studies of primarily white adolescent suicide decedents are associated with suicide in black youths and how these determinants change throughout childhood and adolescence.[6]

Our findings underscore the need to explore potential race-related differences in mechanisms of suicide and to develop more effective suicide detection and prevention efforts for black children. Ongoing surveillance efforts must reflect the

Table. Comparison of Suicide Rates Between US Black and White Youths by Age and Sex, 2001-2015

Age, y	Youth Suicides, No. (Rate per 1 Million Persons)		IRR (95% CI)[a]
	Black	White	
All			
5-9	26 (0.53)	45 (0.19)	2.73 (1.69-4.43)
10	47 (4.68)	79 (1.68)	2.79 (1.95-4.00)
11	101 (9.93)	190 (4.00)	2.48 (1.95-3.16)
12	129 (12.57)	471 (9.86)	1.28 (1.05-1.55)
13	167 (16.16)	979 (20.37)	0.79 (0.67-0.93)
14	194 (18.69)	1625 (33.65)	0.56 (0.48-0.64)
15	252 (24.25)	2496 (51.48)	0.47 (0.41-0.54)
16	317 (30.49)	3372 (69.20)	0.44 (0.39-0.49)
17	428 (41.13)	4084 (83.39)	0.49 (0.45-0.54)
Boys			
5-9	22 (0.88)	40 (0.34)	2.62 (1.56-4.41)
10	42 (8.24)	67 (2.78)	2.97 (2.02-4.36)
11	70 (13.55)	154 (6.33)	2.14 (1.62-2.84)
12	91 (17.45)	336 (13.72)	1.27 (1.01-1.60)
13	122 (23.24)	649 (26.34)	0.88 (0.73-1.07)
14	129 (24.47)	1117 (45.09)	0.54 (0.45-0.65)
15	164 (31.07)	1760 (70.71)	0.44 (0.37-0.52)
16	238 (45.07)	2512 (100.33)	0.45 (0.39-0.51)
17	347 (65.62)	3281 (130.17)	0.50 (0.45-0.56)
Girls			
5-11[b]	40 (1.17)	53 (0.33)	3.53 (2.34-5.32)
12	38 (7.53)	135 (5.80)	1.30 (0.91-1.86)
13	45 (8.85)	330 (14.10)	0.63 (0.46-0.86)
14	65 (12.73)	508 (21.60)	0.59 (0.46-0.76)
15	88 (17.20)	736 (31.19)	0.55 (0.44-0.69)
16	79 (15.44)	860 (36.30)	0.43 (0.34-0.54)
17	81 (15.83)	803 (33.78)	0.47 (0.37-0.59)

Abbreviation: IRR, incidence rate ratio.

[a] White race is the reference group. 95% CIs that do not include 1.00 are considered to be statistically significant. In analyses stratified by sex, the suicide rate among youths aged 5 to 17 years from 2001 through 2015 was 41% lower among black (0.67 per 100 000) than among white girls (1.14 per 100 000) and 42% lower among black (1.83 per 100 000) than among white boys (3.13 per 100 000). Among girls, the black-to-white IRR of suicide among those aged 5 to 12 years was 1.94 (95% CI, 1.49-2.52), whereas the IRR among those aged 13 to 17 years was 0.51 (95% CI, 0.46-0.57). In boys, the black-to-white IRR of suicide among those aged 5 to 12 years was 1.79 (95% CI, 1.53-2.09), whereas the IRR among those aged 13 to 17 years was 0.51 (95% CI, 0.47-0.54). The overall pattern of results was similar across US regions (Northeast, South, Midwest, and West) in analyses stratified by age group (those aged 5-12 years and 13-17 years) and when restricted to non-Hispanic youth.

[b] Suicide rates were estimated among youths aged 5 to 11 years to ensure stable rate estimates for analyses.

dynamic association between race and age-related risk for youth suicide.

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Accepted for Publication: February 7, 2018.

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Published Online: May 21, 2018. doi:10.1001/jamapediatrics.2018.0399

Author Contributions: Dr Bridge had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.
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Obtained funding: Bridge.
Administrative, technical, or material support: Bridge, Horowitz.
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Conflict of Interest Disclosures: Drs Bridge and Sheftall reported receiving honoraria for participation in a Substance Abuse and Mental Health Services Administration–sponsored webinar addressing suicide prevention for African American children. No other disclosures were reported.

Funding/Support: This study was supported by grant R01-MH093552 from the National Institute of Mental Health, National Institutes of Health (Dr Bridge).

Role of the Funder/Sponsor: The sponsor had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

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