

Exposure to Racism on Social Media and Acute Suicide Risk in Adolescents of Color: Results From an Intensive Monitoring Study



To the Editor:

Youth of color are often exposed to racism at both systemic and individual levels. Interpersonal racial/ethnic discrimination is the behavioral manifestation of individual racism.^{1,2} While direct individual experiences of racism (eg, comments directed at the individual) have deleterious effects for the socioemotional well-being of youth of color,³ research also points to the negative effects of broader exposure to racism (eg, viewing racist comments, images, or videos online^{1,2}) that is not experienced directly. Now that social media (SM) has become a prominent and ubiquitous source of social interactions for adolescents, research on the influence of racism on youth must contend with this new medium. This is especially the case for youth of color, particularly Black and Hispanic/Latine youth, who report more SM use than White youth who do not identify as Hispanic/Latine.⁴ The unique features of SM, including its permanence, publicness, and personalized algorithms, may increase both direct and indirect experiences of online racism for youth of color, particularly due to its constant availability and highly visual nature, which likely expose and re-expose youth of color to a variety of online racist experiences. Approximately 20% of all Black adolescents sampled in a large national survey reported that they were the target of online bullying or harassment because of their racial or ethnic identity.⁴ Indeed, exposure to direct and indirect online racism is

associated with negative mental health outcomes for youth of color,^{5,6} including posttraumatic symptoms, depression, and anxiety.

Importantly, suicide rates have increased in recent years among youth of color, specifically among Black youth.⁷ Previous research has identified exposure to racism as an important risk factor for suicidal thoughts in youth of color⁸ and young adults.² However, this research has examined exposure to racism as a distal factor (eg, factors that may not immediately precede suicidal thoughts, but can exacerbate risk). The dynamic nature of suicidal thoughts and behaviors has led to an emphasis on understanding short-term, proximal risk factors (eg, factors that immediately precede the onset of suicidal thoughts) to prevent suicide.⁹ There is a critical dearth of research examining proximal risk factors for suicidal thoughts that are unique to youth of color. SM use and experiences, including direct and indirect racism exposure, also likely fluctuate over short time periods, which may make these events potential proximal predictors of suicidal thoughts in youth of color in addition to distal risk factors. However, no known studies have examined whether exposure to racism on SM is associated with suicidal ideation on a weekly or daily basis, especially among adolescents of color. Intensive longitudinal monitoring studies, which include repeated measurement of experiences in individuals using methods such as daily surveys or ecological momentary assessment, can capture individual fluctuations in both SM racism (direct experiences and exposure) and its proximal impacts on suicidal ideation. Thus, the present study aimed to examine the acute effects of exposure to racism on SM on suicidal ideation (passive and active) and depressed mood among adolescents of color.

Diversity & Inclusion Statement: *We worked to ensure race, ethnic, and/or other types of diversity in the recruitment of human participants. We worked to ensure sex and gender balance in the recruitment of human participants. One or more of the authors of this paper self-identifies as a member of one or more historically underrepresented racial and/or ethnic groups in science. One or more of the authors of this paper self-identifies as a member of one or more historically underrepresented sexual and/or gender groups in science. One or more of the authors of this paper*

received support from a program designed to increase minority representation in science. We actively worked to promote inclusion of historically underrepresented racial and/or ethnic groups in science in our author group. While citing references scientifically relevant for this work, we also actively worked to promote inclusion of historically underrepresented racial and/or ethnic groups in science in our reference list. While citing references scientifically relevant for this work, we also actively worked to promote sex and gender balance in our reference list.

METHOD

This study was conducted as part of an ongoing 8-week intensive longitudinal study focused on understanding the effects of SM on suicide risk among adolescents. Adolescents (aged 14-17) were recruited throughout the United States using paid ads on Instagram (see Supplement 1, available online, for sample recruitment ad). Eligible participants were in grades 9 to 12, were fluent in English, used SM, and had an Android smartphone (due to larger study procedures of objectively capturing application usage patterns possible only on Android due to iPhone restrictions). At the time of data analysis, 61 participants completed study procedures in the larger ongoing study. Given the focus on youth of color in this study, 26 adolescents who identified as White, non-Hispanic/Latine were not included. The current study included the 35 adolescents who identified as youth of color, including Asian (17%), biracial (20%), Black (34%), or Hispanic/Latine (29%); biracial teens primarily identified as White-Hispanic/Latine or Black and White. The mean (SD) age of the adolescents was 16.06 (1.06) years, and 70% identified as female, with 49% identifying as LGBTQ+ (lesbian, gay, bisexual, transgender, queer, and others) (eg, 46% identifying as sexual minority and 31% identifying as transgender or nonbinary). The sample was socioeconomically diverse based on adolescents' perceived societal standing on a 1-to-10 scale of perceived socioeconomic status (mean [SD] = 5.20 [1.73]; range = 1-10).

Following completion of the online screener to determine eligibility, eligible participants and their parent/legal guardian completed assent and consent. Participants completed a baseline survey, which included demographic questions, recent suicidal ideation, and depression symptoms. Adolescents then completed 8 weeks of intensive monitoring, including daily and weekly surveys. Adolescents completed daily surveys assessing whether or not they had passive death wish ("Today, I wished I was dead") or active suicidal thoughts ("Today, I thought about killing myself") that day, with responses of yes (1) or no (0). Participants also completed daily surveys of depressed mood. On weekly surveys, participants responded to the following question: "Did you experience or see others experience discrimination because of their race or ethnicity on SM this week (eg, comments, videos, pictures)?" The adolescents could select more than one response: "No"; "Yes, I experienced this" (ie, direct racism); "Yes, I saw others experience this" (ie, indirect exposure to racism). For this study, exposure to racism on SM was coded as yes (1) and no (0). On weekly surveys, participants reported average daily SM hours that week. Supplement 1 (available online) provides more details about study measures, including references, example items,

and psychometric properties. To ensure participant safety, all participants completed a safety plan at baseline and received crisis resources throughout the study. Participants who indicated active suicidal thoughts in daily surveys were contacted by the study team within 24 hours to assess risk. Additional details about safety procedures are included in Supplement 1, available online. Participants were compensated for their time after the baseline survey and completion of intensive monitoring protocol. This work was approved by the Rutgers University Institutional Review Board.

Analytic Plan

We evaluated whether weekly exposure to SM racism was associated with daily suicidal ideation (passive and active) and depressed mood, controlling for daily hours on SM and baseline-reported suicidal ideation and depression symptoms. Logistic and linear multilevel modeling with variables was conducted using R 4.3.1 lme4 package with random intercepts.¹⁰ Outcomes (depressed mood and active/passive suicidal thoughts) were within-person daily variables (level 1). Predictors included within-person weekly assessments of SM exposure to racism (level 2). Baseline measures were between-person covariates (level 3). Variability in study outcomes was calculated using intraclass coefficients to indicate variance at between- and within-person levels.

RESULTS

Participants completed daily and weekly surveys (median completion = 7.00 weeks; mean [SD] = 6.46 [2.52] weeks). Surveys over all 8 weeks were completed by 40% of participants; 1,379 evening reports of suicidal ideation and 219 total weekly reports of online racism were completed. Results indicated that most adolescents of color (63%) were exposed to racism on SM as reported on at least 1 weekly prompt over the 8-week period, with most adolescents reporting exposure on a mean (SD) of 2.34 (2.57) weeks out of the 8 study weeks (range = 0-8 weeks). Only 11 total reports of direct SM racism were endorsed (ie, endorsed "yes, I experienced this"), which precluded further analyses. In total, 37% of adolescents reported having passive death wish and 34% reported active suicidal ideation at any time during the study period. Adolescents reported a mean (SD) of 5.95 (3.55) hours using SM each week (range = 15 minutes to 15 hours). There was significant within-person variability of suicidal thoughts (61% within), whereas between-person variability was greater in depressed mood (70% between).

Consistent with hypotheses (Table 1), significant within-person effects were found for SM exposure to racism and the occurrence of suicidal ideation, including both

TABLE 1 Weekly Social Media (SM) Exposure to Racism and Daily Suicidal Thoughts and Depressed Mood

| Predictors | Passive SI | | | Active SI | | | Depressed mood | | |
|------------------------------|------------|---------------|----------|-----------|---------------|----------|----------------|----------------|----------|
| | OR | CI | <i>p</i> | OR | CI | <i>p</i> | Estimates | CI | <i>p</i> |
| (Intercept) | 0.00 | 0.00 to 0.01 | <.001 | 0.00 | 0.00 to 0.02 | <.001 | −0.50 | −1.25 to 0.25 | .19 |
| SM racism exposure | 6.55 | 1.77 to 24.15 | <.01 | 6.11 | 1.83 to 20.43 | <.01 | −0.10 | −0.38 to 0.18 | .47 |
| SM hours | 0.93 | 0.79 to 1.09 | .36 | 0.77 | 0.63 to 0.95 | .01 | 0.06 | 0.02 to 0.09 | .01 |
| Baseline SI | 1.02 | 0.99 to 1.05 | .35 | 1.03 | 1.00 to 1.06 | .04 | −0.02 | −0.04 to −0.00 | .03 |
| Baseline depression symptoms | 1.06 | 1.01 to 1.11 | .03 | 1.02 | 0.98 to 1.07 | .38 | 0.10 | 0.06 to 0.13 | <.001 |
| Random effects | | | | | | | | | |
| σ^2 | 3.29 | | | 3.29 | | | 2.36 | | |
| τ_{00} | 1.09 | | | 0.53 | | | 1.05 | | |

Note: OR = odds ratio; SI = suicidal ideation.

passive ($B = 1.88$, $SE = 0.67$, $p = .005$) and active ($B = 1.81$, $SE = 0.61$, $p = .003$) thoughts, even when controlling for weekly reported time of SM use and baseline levels of suicidal ideation and depression symptoms. In particular, youth had about 6 times greater likelihood of having suicidal ideation on weeks they were exposed to SM-based racism (Table 1). However, there were no effects on weekly depressed mood ($B = -0.10$, $SE = 0.14$, $p = .47$) when they were exposed to racism on SM.

DISCUSSION

Preliminary results from this study suggest that exposure to SM-based racism may be a proximal risk factor for suicidal ideation among adolescents of color. While previous research has shown racism to be a distal risk factor for suicidal ideation and behavior,^{2,8} the current study used intensive monitoring to show that SM exposure to racism may be proximally related to suicidal ideation on an individual level. Results also suggest that exposure to racism on SM is highly prevalent among adolescents of color, with a particular emphasis on indirect exposure, which was the predominant form in our sample. This finding is consistent with previous research, which shows that indirect online exposure to racism is most common among adolescents.¹ Interestingly, SM exposure to racism was not related to depressed mood, in contrast to prior work.^{5,6} This may be due to the assessment of momentary depressed mood in the current study. Assessing daily depressed mood or a full range of depression symptoms may better capture the proximal relation between SM racism and suicidal ideation, particularly given racial/ethnic differences in depression symptom endorsement.¹¹ It also is possible that other mechanisms may be impacting how exposure to racism affects suicidal

ideation, such as perceived burdensomeness, which has been shown to mediate the relation between online racism and suicidal ideation among emerging adults² and may similarly have proximal effects.

The current study has several notable limitations, which make the findings preliminary. Of note, the sampling strategy did not specifically recruit LGBTQ+ adolescents; however, SM algorithms may have disproportionately presented recruitment ads to LGBTQ+ teens due to high rates of engagement with mental health-related content online in this population. Given the high rates of LGBTQ+ youth in the current study, it is unclear how these findings would generalize to the broader population of adolescents of color in the United States. Additionally, restriction to only users of Android smartphones may further impact the representativeness of the sample, given the potential difference in SM use and demographic characteristics. However, we observed a broad range of socioeconomic status in our sample, which may be influenced by the large range of price points for Androids compared with iPhones. Our smaller sample size precluded investigation into intersectionality of identities or within-individual racial/ethnic groups who may have unique experiences of SM-based racism. Finally, this study did not investigate the role of other important individual and contextual factors in the relation between exposure to SM racism and suicide ideation, such as family relationships or racial socialization, racial/ethnic identity development, and offline racial discrimination, as well as critical factors of personal resiliency, coping mechanisms, and supportive resources. Further research should approach this work with a strengths-based framework to evaluate factors that buffer against the proximal impacts of SM racism on suicidal ideation, particularly with larger samples across developmental stages.


Overall, preliminary findings highlight the importance of racism, particularly indirect exposure through SM, in proximal suicide risk among adolescents of color. As SM is an important part of life for adolescents, future research needs to understand mechanisms through which SM exposure to racism affects suicide proximally and distally and explore the beneficial aspects of SM as potential protective factors. Clinicians, educators, and parents should consider directly asking adolescents about their SM experiences of racism (direct and indirect) and work with adolescents to build coping strategies when they encounter online racist experiences,¹² particularly if they have suicidal ideation. Future research should explore the SM platforms where online racism is most occurring, as well as adolescents' responses to online racism when experienced, which remain critical to inform interventions. While SM may be a place of meaningful connection and positive experiences, it also can expose youth to racist content that can increase risk, particularly that which targets their identity. Further research is needed to understand the proximal and distal risk that SM exposure to racism has on suicide risk among youth and to investigate how SM use should be addressed within clinical settings, as well as at a broader, systemic level to reduce racist content on SM.

CRedit authorship contribution statement

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Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

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