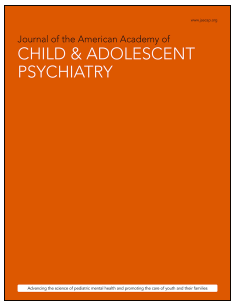
Journal Pre-proof



Online Racism and Mental Health Among Black American Adolescents in 2020

Juan Del Toro, PhD, Ming-Te Wang, EdD

PII: S0890-8567(22)00361-6

DOI: https://doi.org/10.1016/j.jaac.2022.07.004

Reference: JAAC 3886

To appear in: *Journal of the American Academy of Child & Adolescent Psychiatry*

Received Date: 21 October 2021

Revised Date: 27 April 2022

Accepted Date: 12 July 2022

Please cite this article as: Del Toro J, Wang M-T, Online Racism and Mental Health Among Black American Adolescents in 2020, *Journal of the American Academy of Child & Adolescent Psychiatry* (2022), doi: https://doi.org/10.1016/j.jaac.2022.07.004.

Online Racism and Mental Health Among Black American Adolescents in 2020

RH = Online Racism and Mental Health

Juan Del Toro, PhD, Ming-Te Wang, EdD

Supplemental Material

Accepted July 12, 2022

Drs. Del Toro and Wang are with the University of Pittsburgh, Pennsylvania.

We worked to ensure race, ethnic, and/or other types of diversity in the recruitment of human participants. We worked to ensure that the study questionnaires were prepared in an inclusive way. 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 sex and gender balance in our reference list. 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.

This research was supported by Grants 1315943 and 1561382 from the National Science Foundation to Dr. Wang, Grant 201600067 from the Spencer Foundation to Dr. Wang, and Grant 202100287 from the Spencer Foundation to Dr. Del Toro.

This article is part of a special series devoted to addressing bias, bigotry, racism, and mental health disparities through research, practice, and policy. The series is edited by Assistant Editor Eraka Bath, MD, Deputy Editor Wanjikũ F.M. Njoroge, Associate Editor Robert R. Althoff, MD, PhD, and Editor-in-Chief Douglas K. Novins, MD.

The research was performed with permission from the University of Pittsburgh's Institutional Review Board.

Drs. Del Toro and Wang served as the statistical experts for this research.

Author Contributions
Conceptualization: Del Toro
Data curation: Wang
Formal analysis: Del Toro, Wang
Funding acquisition: Wang
Methodology: Wang
Software: Del Toro

Supervision: Wang
Writing – original draft: Del Toro
Writing – review & editing: Del Toro, Wang

Disclosure: Drs. Del Toro and Wang have reported no biomedical financial interests or potential conflicts of interest.

Correspondence Juan Del Toro, PhD, Learning Research and Development Center, 3420 Forbes Ave, Office #511C, Pittsburgh, PA 15260; e-mail: juan.deltoro@pitt.edu

Abstract

Objective: To determine whether rates of online racial discrimination changed over the course of 2020 and their longitudinal effects on Black youth's mental health.

Method: This longitudinal study collected 18,454 daily assessments from a nationally representative sample of 602 Black and White adolescents in the United States (58% Black, 42% White; M_{age} = 15.09, SD_{age} = 1.56) across 58 days during the heightened racial tensions between March and November 2020.

Results: Black youth experienced increases in online racial discrimination, and these increases were not fully explained by time spent online nor general cybervictimization experiences. Online racial discrimination predicted poorer same- and next-day mental health among Black youth but not among White youth. Black youth's mental health did not predict their online racial discrimination experiences.

Conclusion: Online racial discrimination has implications for shaping mental health disparities that disadvantage Black youth relative to their White peers. Programs can be implemented to decrease online hate crimes, and health providers (e.g., pediatricians, psychiatrists) should develop procedures that mitigate the negative mental health effects following online racial discrimination experiences.

Key words: online racism, Black adolescent development, mental health, ecological momentary assessment.

Introduction

In 2020, the killings of Breonna Taylor, George Floyd, and other Black Americans at the hands of White civilians and law enforcement sparked an uprising against racial injustice that was met with fierce opposition from White nationalists and domestic terror groups in the United States. Not only did these groups become more prominent, but they also became more active in online spaces through Zoom-bombing (i.e., unwanted intrusion during a video-conference call)[1] and online message boards (e.g., 8kun), where race-related hate crimes were coordinated under the guise of anonymity.[2] Unfortunately, youth navigated online spaces to connect with peers during social distancing mandates and school closures brought about by the COVID-19 pandemic, potentially increasing youth's exposure to online racism. To date, scientists have fallen short in documenting the nature of racism during this period.[3] To understand the context and consequences of online racism, the present study is one of the first to examine how rates of online racial discrimination changed throughout this period and how such discrimination predicted mental health longitudinally among a nationally representative sample of Black adolescents.

Because of historic systemic inequities, Black youth navigate stress associated with racial discrimination.[4,5] Racial discrimination is the behavioral component of racism and is the differential treatment based on race or on inadequately justified factors other than race that creates disparities in power, resources, and opportunities between racial groups.[6,7] Interpersonal racial discrimination may have consequences for minoritized groups' psychological adjustment because it directly activates stress processes and erects barriers between individuals and resources.[8,9] Discrimination can also result in a greater hopelessness and increased vigilance that indirectly activates stress processes.[8–10] Indeed,

racial discrimination has been found to be a robust predictor of maladaptive academic, physical, and psychological outcomes.[11,12]

Although there is a rich body of literature addressing racial discrimination in offline settings, less is known about the frequency of online racial discrimination during the COVID-19 pandemic. As COVID-19-related public health restrictions contributed to an increase in adolescents' internet use,[13] online spaces may have been primary settings for discrimination during the 2020 racial unrest. Online racial discrimination is a specific form of racial discrimination that occurs on Internet-based social media or direct messaging platforms.[14,15] It includes disparaging remarks, symbols, images, or behaviors that inflict harm through the use of computers, cell phones, and other electronic devices.[15] As perpetrators of discrimination become more cognizant of negative stereotypes about Black youth, discrimination is more likely to unfold over time. For instance, Black citizens have reported racial discrimination following stereotypes about their racial group members as carriers of COVID-19.[16,17] Thus, online racial discrimination may expectedly increase over time, but no study has empirically captured such change during this particular sociohistorical period.

A larger issue in the literature is the lack of longitudinal research addressing the consequences of online racial discrimination on mental health as most extant studies have been cross-sectional.[14,18] Online spaces have become prominent developmental contexts for youth during the COVID-19 pandemic; yet, only a single study has documented the lasting effects of online racial discrimination on adolescents' mental health.[18] A pre-pandemic study followed a sample of Black and Latino adolescents over a three-year period and found that direct online racial discrimination was unrelated to self-esteem, depressive symptoms, and anxiety.[18] These null findings are likely attributable to the study's timespan, as the negative effects of online

racism may have deteriorated over a three-year period. Considering adverse events predict more immediate than distal outcomes,[19] we examined whether online racial discrimination predicted same-and next-day mental health symptoms among Black youth.

The present study had two primary research goals: (a) Examine how the frequency of online racial discrimination changed prior to and following the 2020 racial unrest and (b) determine whether online racial discrimination predicted mental health longitudinally among a nationally representative sample of Black youth. We predicted that, on average, online racial discrimination would increase throughout the study period. Furthermore, due to stigma, stress, and hypervigilance,[8,9] we hypothesized that Black youth who experienced online racial discrimination would report decrements in their same-and next-day mental health. In addition to our core research goals, we examined whether youth's poor mental health occurred prior to and contributed to their online racial discrimination perceptions and whether the associated mental health consequences of online racial discrimination emerged among same-aged White youth.

Method

Participants

Our study participants include a nationally representative sample of 602 self-identified Black and White adolescents (58% Black; 39% boys; 71% qualified for free lunch; M_{age}=15.09, SD_{age}=1.56, age-range=12-18). Given our interest in examining online racial discrimination experiences among Black adolescents, we used the White sample for descriptive purposes and exploratory comparisons with the Black sample. Thus, our analytic sample included 351 Black adolescents (40% boys; 85% qualified for free lunch; M_{age}=14.78, SD_{age}=1.52).

Procedure

The study worked with a survey company to recruit a nationally representative sample of adolescents via random sampling. Out of those contacted for participation (*n*=1,150), 602 adolescents and their primary caregivers participated. All consented adolescents and their primary caregivers provided demographic information and completed baseline measures. Adolescents took approximately 5-10 minutes to complete a 52-item daily survey between 5 p.m. and 12 a.m. using their internet-capable devices across 58 days over four waves in 2020: Wave 1 (i.e., 14 days; March 2–15), Wave 2 (i.e., 14 days; April 8–21), Wave 3 (i.e., 15 days; May 18–June 1), and Wave 4 (i.e., 15 days; October 19–November 2). Figure 1 presents key dates of 2020 and the study design. Adolescents received $40 for their participation at each wave. During Wave 1, the primary aim was to understand how daily environmental and psychosocial stressors contribute to adolescents' well-being and overall school adjustment. When school closures occurred nationwide following the Wave 1 assessment, the principal investigators pivoted the mission of the study to capture COVID-19 related stressors and their links with students' daily well-being and school adjustment in the context of pandemic-related school closures and stay-at-home orders. To increase the sample size and buffer against attrition over waves, we recruited new participants at each wave. All materials and procedures were reviewed and approved by the authors' university institutional review board.

Measures

Daily Online Racial Discrimination

Each day, adolescents reported whether they experienced online racial discrimination, which was a single item from the *Online Victimization Scale* (OVS).[15] The OVS is a validated measure of adolescents' experiences with online general, sexual, and racial victimization (see Supplement 1, available online). Drawing from the OVS and considering our research questions,

we focused on the *Individual Online Racial Discrimination* subscale as the primary independent variable. For the subscale, adolescents used a two-point Likert scale to report on their daily and direct encounters of victimization based on their racial identification (0=*no,* 1=*yes*; i.e., "Over the past 24 hours, did anyone say or post mean or rude things about you because of your race or ethnic group online?").

Daily Mental Health Symptoms

Mental health was assessed each day using adolescents' self-reported depressive symptoms, anxiety, stress, and exhaustion/tiredness. Depressive symptoms and anxiety were assessed using the Profile of Mood States (POMS) Questionnaire[20] with a five-point Likert scale (1=not at all, 5=extremely). Each measure demonstrated acceptable internal consistency (depressive symptoms: two-item; e.g., "Today, how often did you feel depressed or sad," r=0.95, R_{Change}=0.98; anxiety: two-item; e.g., "Today, how often did you feel anxious," r=0.93, R_{Change} = 0.97). After our reliability and validity assessments of these shortened versions of the POMS subscales (see Supplement 2, available online), a mean score was created for both depressive and anxiety indices within each day and coded such that higher values indicated worse mental health symptoms. Stress was a single item from the Daily Stress Scale[21] (i.e., "Overall, how stressful was your day?" 1=not at all, 4=very stressful). Adolescents also reported the degree to which they felt tired (one-item; i.e., "Overall, how tired did you feel today?" 1=*not at all*, 5=*very much*).[22]

Covariates

We accounted for potential third variable confounds that could bias the link between online racial discrimination and youth's mental health. Between-person covariates included youth's gender (0=*girl*, 1=*boy*), age (range=12-18), parent-reported eligibility for free/reduced-

priced lunch (0=participant eligible for free/reduced-price lunch, 1=participant ineligible for free/reduced-priced lunch), and cohort (i.e., wave in which youth were recruited). To specify that the variations of the mental health symptoms were attributed to online racial discrimination, within- and between-person covariates included time spent on social media (one-item; "How much time over the last 24 hours did you spend using social media."; 1=less than one hour, 11=ten or more hours) and whether youth experienced general cyber-victimization (one-item; "Over the past 24 hours, were you cyberbullied?" 0=no, 1=yes; see SI for a validity assessment of our OVS subscales). To account for possible time and fatigue effects of study participation and sleep behaviors affected by the COVID-19 pandemic, within-person covariates included time (i.e., day of the study; range=0–57), whether the survey was on the weekend (0=weekday, 1=weekend), last night's sleep quality (one item; i.e., "How well did you sleep last night?" 1=very bad, 5=very good),[23] and last night's sleep quantity (one item; range = 0–24 hours;[23] see Table S1, available online, for a description of the covariates for our sample of Black and White adolescents).

Missing Data

As is common in all research contexts, our longitudinal design included missing data. Among the sample of 602 Black and White adolescents, 265 (44%) adolescents participated in Wave 1, 391 (65%) in Wave 2, 387 (64%) in Wave 3, and 341 (57%) in Wave 4. These participation rates were shaped by rates of adolescents who opted in and out of the study in later waves. Specifically, 265 (44%) were recruited in Wave 1, 216 (36%) in Wave 2, 94 (16%) in Wave 3, and 27 (4%) in Wave 4 (see the SI for comparisons on key constructs by wave of recruitment). Since they were first recruited into the study, 307 (55%) participants did not miss any waves, 135 (22%) missed one wave, 57 (9%) missed two waves; and 103 (17%) missed

three waves (see SI for retention rates by wave of recruitment). A Little's missing completely at random (MCAR) test suggested that the data were missing completely at random, χ^2 (16)=24.77, p=0.07. Considering Little's MCAR test was trending significance, we explored potential missing data patterns at the wave and daily levels. After controlling for wave of recruitment, partial correlations indicated that younger adolescents were more likely to participate in all waves than their older-aged peers (r=-0.11, p<0.05), but no relations emerged between participation and adolescents' race (r=0.03, p=0.53), gender (r=-0.07, p=0.16), and eligibility for free/reduced-priced lunch (r=-0.01, p=0.89). After controlling for covariates, partial correlations indicated that study participation was unrelated to our key outcomes, such as depressive symptoms (r=-0.08, p=0.11), anxiety (r =0.01, p=0.80), stress (r =-0.07, p=0.13), tiredness (r=-0.06, p=0.23), and online racial discrimination (r=0.00, p=0.98).

We also assessed participation rates at the daily level. Since they were first recruited into the study, adolescents on average missed 2 daily diaries, and this low rate of missingness is reflected in the daily level participation within each wave (see Supplement 3, available online). After accounting for wave level participation, partial correlations indicated that daily level participation was unrelated to adolescents' race (r=0.03, p=0.53), gender (r=-0.07, p=0.10), or eligibility for free/reduced-priced lunch (r=0.04, p=0.27), but younger adolescents completed more daily assessments than their older-aged peers (r=-0.14, p<0.001). After accounting for these demographic differences, partial correlations indicated that daily level participation was unrelated to depressive symptoms (r=0.00, p=0.67), anxiety (r=-0.01, p=0.29), stress (r =-0.01, p=0.73), tiredness (r=-0.01, p=0.36), and online racial discrimination (r=-0.01, p=0.15). Considering that our data were characterized as missing at random,[24] we used full information maximum likelihood to retain all 602 adolescents. In Supplement 3 and Table S2 (available

online), we re-estimated our models using multiple imputation as a sensitivity analysis, and our results stayed the same.

Analytic Plan

All analyses were conducted in *Mplus* version 8.3,[25] using TYPE=TWO LEVEL to account for the nested structure in which 58 daily assessments were nested within 351 adolescents. In doing so, we estimated multi-level models with fixed effects and a random intercept for each dependent variable and assigned time to Level 1 and adolescents to Level 2, while positioning the random intercepts to reflect adolescent-level intercepts of the dependent variables. The intra-class correlations presented in Table S3 (available online) justified our multi-level modeling approach. These multi-level models enabled us to adopt a quasi-experimental framework and treat each adolescent like his/her own control group.[26] Specifically, after controlling for between-person differences in online racial discrimination experiences, we examined within-person differences associated with online racial discrimination and, specifically, whether adolescents who experienced online racial discrimination at any day also experienced poor mental health symptoms relative to days when they did not experience online racial discrimination. We first examined whether the frequency of online racial discrimination changed for Black youth over the course of the 58-day study period and whether these changes operated similarly to changes in time spent online and general cybervictimization.

Next, we estimated two multi-level models that examined the relations between online racial discrimination and youth's mental health at Level 1. In two of these multi-level models, we examined whether adolescents who reported online racial discrimination also reported same-day (i.e., Model 1) and next-day (i.e., Model 2) changes relative to their own average on mental health symptoms. In both models, the four mental health outcomes (i.e., depressive symptoms,

anxiety, stress, and tiredness) were coded as continuous dependent variables, freely estimated at Levels 1 and 2, and regressed on all covariates at Levels 1 (e.g., day, weekend, last night's sleep quality and quantity, time spent online, and online racial discrimination) and 2 (e.g., gender, age, free-lunch eligibility, and cohort). Level-1 predictors were group-mean centered, and Level-2 predictors were grand-mean centered.[26,27] These predictors were either continuous (i.e., Level 1: day, last night's sleep quality and quantity, and time spent online; Level 2: age and time spent online) or dichotomous (i.e., Level 1: weekend, online racial discrimination, and general cybervictimization; Level 2: gender, free-lunch eligibility, cohort, online racial discrimination, and general cybervictimization).

To support our inferences, we conducted several sensitivity analyses. For instance, we excluded prior-day mental health outcomes in our analytic models, because methodologists suggest that including lagged dependent variables introduce error in multi-level models.[28] Nonetheless, we tested whether our results held when we controlled for prior-day mental health outcomes in the models. In addition, to establish temporal precedence among our key constructs and test alternative hypotheses, we examined whether poor mental health predicted next-day's online racial discrimination perceptions and whether the pattern of findings replicated in a sample of White adolescents.

Results

Descriptive Statistics

Table 1 presents descriptive statistics for online racial discrimination, alternative online experiences, and mental health symptoms. Across all four waves, 158 (45%) Black youth reported at least one instance of online racial discrimination. On average, Black youth experienced two incidents of online racial discrimination throughout the study period. The

average count of online racial discrimination was stable between Waves 1 and 2 [$\Delta\chi^2(1)=0.18$, $p=0.67$], increased between Waves 2 and 3 [[$\Delta\chi^2(1)=19.76$, $p<0.001$], and stabilized thereafter [$\Delta\chi^2(1)=0.50$, $p=0.48$]. Although youth's average time spent online increased between Waves 1 and 2 [$\Delta\chi^2(1)=21.66$, $p<0.001$], it was stable between Waves 2 and 3 [$\Delta\chi^2(1)= 0.88$, $p=0.35$] and between Waves 3 and 4 [$\Delta\chi^2(1)= 2.29$, $p=0.13$]. The average count of general cybervictimization experiences was stable throughout the pandemic [Waves 1 and 2: $\Delta\chi^2(1)= 0.64$, $p=0.42$; Waves 2 and 3: $\Delta\chi^2(1)= 0.06$, $p=0.80$; Waves 3 and 4: $\Delta\chi^2(1)= 0.11$, $p=0.74$]. In addition, the percentage of participants experiencing online racial discrimination increased from 8% at Wave 1 to 22% at Wave 4; this finding suggests that the increase in online racial discrimination was not solely attributable to individual youth reporting re-occurring instances of online racial discrimination across time.

Table 2 presents zero-order bivariate correlations among key constructs that varied within-person and between-persons. Without controlling for any covariates, youth who experienced online racial discrimination also reported poor mental health symptoms (i.e., depressive symptoms, anxiety, stress, and tiredness). Notably, the weak relation between online racial discrimination and cybervictimization suggests that they are distinguishable constructs.

Online Racial Discrimination and Mental Health

The top half of Table 3 presents unstandardized coefficients for our multi-level models examining the same-day effects of online racial discrimination on youth's mental health after we controlled for within-and between-person covariates. In the within-person fixed effects of the model, we found that Black adolescents who experienced online racial discrimination at any day also reported increased same-day depressive symptoms, anxiety, and stress relative to days when

they did not experience online racial discrimination. Online racial discrimination was unrelated to same-day within-person changes in tiredness.

The bottom half of Table 3 presents unstandardized coefficients for our multi-level models examining the next-day effects of online racial discrimination on youth's mental health after we controlled for within-and between-person covariates. In the within-person effects of the model, Black adolescents who experienced online racial discrimination at any day also reported increased next-day depressive symptoms, anxiety, and stress relative to days when they did not experience online racial discrimination. Again, online racial discrimination was unrelated to next-day within-person changes in tiredness.

Both models produced acceptable fit indices (see Table 3), and the sizes of the within-person fixed effects were small (β-range=.06-.08). Notably, in both models, online racial discrimination was associated with increased same- and next-day depressive symptoms, anxiety, and stress, but online racial discrimination was unrelated to same- and next-day tiredness. However, improved sleep quality the night before was associated with lower levels of depressive symptoms, anxiety, and stress. Thus, sleep disruption is likely an important outcome in addition to depressive symptoms, anxiety, and stress, even in the absence of tiredness as an outcome.

Sensitivity Analyses

Since there are concerns about the inclusion of lagged dependent variables,[28] we examined whether our online racial discrimination continued to predict same- and next-day mental health after we controlled for prior-day mental health to account for the autocorrelation of daily diary observations; ultimately, the pattern of results stayed the same (see Table S4, available online).

We conducted additional analyses to determine whether adolescents' poor mental health symptoms contributed to their racial discrimination experiences or made them more prone to attribute unfair treatment to racial discrimination. After controlling for our covariates, neither mental health outcome at the within- nor between-person level predicted online racial discrimination longitudinally (see Table S5, available online).

In addition, we examined the degree to which the present findings extended to White adolescents. Only 61 White adolescents reported at least one online racial discrimination instance, and the prevalence of participants reporting online racial discrimination among White adolescents was low and stable across waves (i.e., 8% in Wave 1, 4% in Wave 2, 7% in Wave 3, and 11% in Wave 4). We also found that online racial discrimination did not predict White youth's mental health at either the within- or between-person levels (see Table S6, available online), and these results reliably differed from those found among Black youth, $\Delta\chi^2(6)= 46.49$, $p<.001$.

Discussion

The present study examined whether the rate of online racial discrimination changed over the course of the racial unrest in the U.S. from March to November 2020. Using a national sample, we found that Black youth reported increases in online racial discrimination during this time. In addition, Black youth who experienced online racial discrimination reported poorer same-and next-day mental health.

One-in-two Black youth experienced at least one instance of online racism during the study period. This rate is observably higher than a prior documented study, which found that 38% of Black American adults reported at least one offline discrimination experience between March and June 2020.[16] Our rate was expectedly higher, as we covered a wider time period and

focused on rates of racial discrimination among youth in online settings. Although adolescents may have been more likely to experience online, as opposed to offline, discrimination due to public health measures associated with COVID-19 school closures and social distancing mandates, these youth may have also experienced racial discrimination in offline contexts as well. This reality unfortunately means that youth's total exposure to racial discrimination could be even higher and may be underestimated in this study.

In addition, Black youth reported increases in online racial discrimination over time. Notably, these increases were not solely explained by increased time spent online nor by general cyber-victimization experiences. Recall that Breonna Taylor's and George Floyd's deaths sparked worldwide protests over the killings of innocent and unarmed Black Americans in the hands of law enforcement. Because these protests were met with opposition, youth who were attuned to such events may have also experienced such opposition as discriminatory and may have also fallen victim to unwanted online harassment.

Black youth who experienced at least one instance of online racial discrimination also reported poorer same- and next-day mental health. Consistent with the literature,[4,5] online discrimination that targeted youth's racial identities likely activated threat responses and reminded Black youth about their lack of power within a racially stratified society.[5] In addition, online racial discrimination may have been coupled with offline discrimination,[29] such as direct and vicarious offline harassment across contexts that adolescents face throughout any given day, including school figures, peer groups, and extracurricular activities.[30,31] In turn, this amalgamation of negative online and offline encounters across youth's life courses may have led Black youth to experience heightened stress and hopelessness.[10,32] Whereas past research documented non-significant longitudinal effects of direct online racial discrimination across a

three-year period,[18] we found immediate same-and next-day decrements in mental health following online racist events. This attention to timing suggests that there may be a critical period following racial discrimination experiences when youth's mental health is particularly vulnerable. Critics may contend that youth's mental health could contribute to a sensitivity to discriminatory experiences; however, our evidence did not support such a claim. Rather, our evidence indicated that online spaces may be a particularly dangerous setting for adolescents, especially considering the salient processes of racial identity development during this period.[33] To prepare racially minoritized youth and their families to cope with these adverse experiences, psychiatrists and clinicians should recognize online spaces as developmental contexts with immediate consequences for youth's mental health.[34,35]

No discernable effect of online racial discrimination emerged for White youth. This finding is unsurprising as White youth belong to a racial group that has more power, wealth, and privilege; hence their racial identity is less susceptible to threats than Black youth.[5] Supporting this possibility, the frequency of online racial discrimination experiences was lower for White youth than for Black youth. In addition, the absence of threat to their racial identity may explain why White youth are less attuned to race and see diversity as less self-relevant, which could have resulted in White youth's less vulnerability to online racial discrimination. Indeed, studies have found that White youth are less affected by race-related experiences than their Black peers.[31,36]

The present study was not free of limitations. For instance, we solely examined online racial discrimination; therefore, we cannot rule out the possibility that offline discrimination also increased during this period. Second, our study was a series of daily diaries across eight months during the COVID-19 pandemic; for this reason, we have a restricted snapshot of online racial discrimination in a particularly nuanced social context. Third, Black youth were not the only

ones experiencing racism during this period, as other racial minority youth (e.g., Asian Americans) have experienced racism as well.[16] Future studies should investigate whether the impact of online discrimination on mental health identified in this study can be generalized to other racial minority groups. Fourth, since we recruited new participants at each wave, not all participants had the opportunity to participate in all possible waves. For this reason, some adolescents had fewer opportunities to report on online racism, and the uncertainty associated with missing data may have dampened significant relationships. Thus, the present study's observed rate of online racial discrimination and its associated consequences are likely conservative estimates. Fifth, because our data primarily relied on self-report measures, our study is susceptible to standard concerns regarding social desirability bias. Yet, our pattern of findings aligns with studies that have used non-survey measures of discrimination and adolescents' adjustment outcomes.[37–39] Also, the intensive longitudinal nature of the present study provided us with a 58-day snapshot of youth experiences, which is a relatively short time period. Scholars should consider a more long-term longitudinal study to understand whether and how our findings hold over the course of adolescence. Lastly, to reduce respondent burden and attrition given the intensity of the daily-diary study, some important constructs, including vicarious online racial discrimination, were not measured in the present study. Considering the health impacts associated with vicarious racism,[40] scholars should examine this type of racial discrimination in future studies.

Clinical Implications

Our findings have immediate implications for clinical practice. We found that racial discrimination was associated with increases in same- and next-day mental health among a non-clinical sample of Black adolescents. Although the magnitude of these effect sizes was relatively

small, the present study's effect sizes were similar to those found in longitudinal studies with wider time frames (e.g., yearly intervals).[33,41] However, our effect sizes were on average larger than those found in prior studies using daily-diary study designs.[42,43] It is worth noting, though, that these prior daily-diary studies focused on offline racial discrimination only while the present study examined racial discrimination in online settings. As such, youth's chronic exposure to online settings may exacerbate the impact of racial discrimination on youth's mental health. Importantly, these daily effects may accrue and over time contribute to clinically significant levels of impairment. Because the litany of mental health issues associated with racial discrimination includes suicidality,[44] clinicians should be especially attuned to the ways in which their racially minoritized adolescent patients process instances of discrimination over time, especially in the case of repeated incidents.

Given the prevalence of discrimination experienced by racial minority youth in today's society, clinicians should receive training on culturally sensitive assessments and effective communication skills to use when patients' racial trauma arises in clinical settings.[45,46] These professionals may also benefit from systematic training in racial literacy and resources to help youth cope with racially traumatic events within communities.[45,47] In addition, practitioners may want to give special attention to understanding how processes of ethnic-racial socialization have operated within families. When parents feel under-prepared to discuss racism and racist events, family conversations about these topics may contribute to greater externalizing and internalizing symptomatology among youth.[48] Importantly, conversations about racial discrimination would be incomplete without discussing practical approaches to cope with race-related stressors in daily life. Therefore, both clinicians and parents should consult the ethnic-racial socialization literature

about how, when, and what to discuss with youth during critically important conversations about race, racism, and discrimination.

Online racial discrimination has been documented as the most frequent discrimination experience among Black youth[49] yet it has been sparingly addressed by health providers' anti-racism aefforts.[34,35] During our assessment periods in 2020, we found that the frequency of online racial discrimination increased throughout the U.S. In addition, online racial discrimination was linked to poorer same- and next-day mental health among Black youth. Because of the prevalence of online racism and its associated consequences for developing youth, social media companies have a responsibility to address hate speech in online spaces. Considering these same hate crimes are legal offenses in offline spaces, it is time to consider whether the same legal ramifications should extend to online hate crimes. In addition to these policy actions on behalf of social media platforms, health providers can play an active role in helping adolescents cope with online hate speech. Moreover, training on racial trauma is needed among mental health experts,[46] and members of online communities need accessible tools that encourage the reporting of online racism.[50] To address the mental health repercussions following online racial discrimination, pediatricians and clinicians should acknowledge and discuss practices that help Black youth cope with such widespread discrimination,[46] because in America, it is not a question of whether these youth will encounter discrimination, but when.

References

1. Nakamura L, Stiverson H, Lindsey K. *Racist Zoombombing*. Routledge; 2021.

2. Klein A. Social Networks and the Challenge of Hate Disguised as Fear and Politics. *J Deradicalization*. 2021;(26):1-33.

3. Berenbaum MR. PNAS and prejudice. *Proc Natl Acad Sci*. 2020;117(29):16710-16712. doi:10.1073/pnas.2012747117

4. Spencer MB, Dupree D, Hartmann T. A phenomenological variant of ecological systems theory (PVEST): A self-organization perspective in context. *Dev Psychopathol*. 1997;9(4):817-833. doi:10.1017/S0954579497001454

5. García Coll C, Lamberty G, Jenkins R, et al. An integrative model for the study of developmental competencies in minority children. *Child Dev*. 1996;67(5):1891-1914.

6. National Research Council. *Measuring Racial Discrimination*. The National Academies Press; 2004. doi:10.17226/10887

7. Paradies YC. Defining, conceptualizing and characterizing racism in health research. *Crit Public Health*. 2006;16(2):143-157. doi:10.1080/09581590600828881

8. Clark R, Anderson NB, Clark VR, Williams DR. Racism as a stressor for African Americans: A biopsychosocial model. *Am Psychol*. 1999;54(10):805-816. doi:10.1037/0003-066X.54.10.805

9. Link BG, Phelan JC. Conceptualizing stigma. *Annu Rev Sociol*. 2001;27:363-385. doi:10.1146/annurev.soc.27.1.363

10. Saleem FT, Anderson RE, Williams M. Addressing the "myth" of racial trauma: Developmental and ecological considerations for youth of color. *Clin Child Fam Psychol Rev*. 2019;23(1):1-14. doi:10.1007/s10567-019-00304-1

11. Benner AD, Wang Y, Shen Y, Boyle AE, Polk R, Cheng YP. Racial/ethnic discrimination and well-being during adolescence: A meta-analytic review. *Am Psychol*. 2018;73(7):855-883. doi:10.1037/amp0000204

12. Priest N, Paradies Y, Trenerry B, Truong M, Karlsen S, Kelly Y. A systematic review of studies examining the relationship between reported racism and health and wellbeing for children and young people. *Soc Sci Med*. 2013;95:115-127. doi:10.1016/j.socscimed.2012.11.031

13. Fernandes B, Biswas UN, Tan-Mansukhani R, Vallejo A, Essau CA. The impact of COVID-19 lockdown on internet use and escapism in adolescents. *Rev Psicol Clínica Con Niños Adolesc*. 2020;7(3):59-65.

14. Tynes BM, Del Toro J, Lozada FT. An unwelcomed digital visitor in the classroom: The longitudinal impact of online racial discrimination on academic motivation. *Sch Psychol Rev*. 2015;44(4):407-424. doi:10.17105/spr-15-0095.1

15. Tynes BM, Rose C, Williams D. The development and validation of the online victimization scale for adolescents. *Cyberpsychology*. 2010;4.

16. Ruiz N, Horowitz J, Tamir C. Many Black and Asian Americans say they have experienced discrimination amid the COVID-19 outbreak. *Pew Res Cent*. Published online 2020.

17. Gillard S, Dare C, Hardy J, et al. Experiences of living with mental health problems during the COVID-19 pandemic in the UK: a coproduced, participatory qualitative interview study. *Soc Psychiatry Psychiatr Epidemiol*. Published online 2021:1-11. doi:10.1007/s00127-021-02051-7

18. Tynes BM, English D, Del Toro J, Smith NA, Lozada FT, Williams DR. Trajectories of online racial discrimination and psychological functioning among African American and Latino adolescents. *Child Dev*. 2020;91(5):1577-1593. doi:10.1111/cdev.13350

19. Kraft MA. Interpreting effect sizes of education interventions. *Educ Res*. 2020;49(4):241-253. doi:10.3102/0013189X20912798

20. McNair D, Lorr M, Droppleman L. Manual for the profile of mood states (POMS). In: Educational and Industrial Testing Service; 1971.

21. Zeiders KH. Discrimination, daily stress, sleep, and Mexican-origin adolescents' internalizing symptoms. *Cultur Divers Ethnic Minor Psychol*. 2017;23(4):570-575. doi:10.1037/cdp0000159

22. Walker LS, Garber J, Smith CA, Van Slyke DA, Claar RL. The relation of daily stressors to somatic and emotional symptoms in children with and without recurrent abdominal pain. *J Consult Clin Psychol*. 2001;69(1):85-91. doi:10.1037/0022-006X.69.1.85

23. Buysse DJ, Reynolds CF 3rd, Monk TH, Berman SR, Kupfer DJ. The Pittsburgh sleep quality Index: A new instrument for psychiatric practice and research. *Psychiatry Res*. 1989;28(2):193-213.

24. Enders CK. Dealing with missing data in developmental research. *Child Dev Perspect*. 2013;7(1):27-31. doi:10.1111/cdep.12008

25. Muthén LK, Muthén BO. *Mplus User's Guide*. Eighth. Muthén & Muthén; 1998.

26. Bolger N, Laurenceau JP. *Intensive Longitudinal Methods: An Introduction to Diary and Experience Sampling Research*. Guilford Press; 2013.

27. Curran PJ, Bauer DJ. The disaggregation of within-person and between-person effects in longitudinal models of change. *Annu Rev Psychol*. 2011;62:583-619. doi:10.1146/annurev.psych.093008.100356

28. Allison P. Don't put lagged dependent variables in mixed models. Published 2015. statisticalhorizons.com/lagged-dependent-variables

29. Lozada FT, Seaton EK, Williams CD, Tynes BM. Exploration of bidirectionality in African American and Latinx adolescents' offline and online ethnic-racial discrimination. *Cultur Divers Ethnic Minor Psychol*. Published online 2020:No Pagination Specified-No Pagination Specified. doi:10.1037/cdp0000355

30. Hughes D, Harding JF, Niwa EY, Del Toro J, Way N. Racial socialization and racial discrimination as intra- and inter-group processes. In: Rutland A, Nesdale D, Brown CS, eds. *The Wiley-Blackwell Handbook of Group Processes in Children Adolescents*. Wiley; 2017:243-268.

31. Del Toro J, Wang MT. The roles of suspensions for minor infractions and school climate in predicting academic performance among adolescents. *Am Psychol*. Published online 2021. doi:10.1037/amp0000854

32. Jones SCT, Anderson RE, Gaskin-Wasson AL, Sawyer BA, Applewhite K, Metzger IW. From "crib to coffin": Navigating coping from racism-related stress throughout the lifespan of Black Americans. *Am J Orthopsychiatry*. 2020;90(2):267-282. doi:10.1037/ort0000430

33. Del Toro J, Hughes D, Way N. Inter-relations between ethnic-racial discrimination and ethnic-racial identity among early adolescents. *Child Dev*. Published online 2020. doi:10.1111/cdev.13424

34. Cénat JM. How to provide anti-racist mental health care. *Lancet Psychiatry*. 2020;7(11):929-931. doi:10.1016/S2215-0366(20)30309-6

35. Robles-Ramamurthy B, Coombs AA, Wilson W, Vinson SY. Black children and the pressing need for antiracism in child psychiatry. *J Am Acad Child Adolesc Psychiatry*. 2021;60(4):432-434. doi:10.1016/j.jaac.2020.12.007

36. Levine CS, Markus HR, Austin MK, Chen E, Miller GE. Students of color show health advantages when they attend schools that emphasize the value of diversity. *PNAS Proc Natl Acad Sci U S Am*. 2019;116(13):6013-6018. doi:10.1073/pnas.1812068116

37. Adam EK, Heissel JA, Zeiders KH, et al. Developmental histories of perceived racial discrimination and diurnal cortisol profiles in adulthood: A 20-year prospective study. *Psychoneuroendocrinology*. 2015;62:279-291. doi:10.1016/j.psyneuen.2015.08.018

38. Del Toro J, Fine A, Wang MT, et al. The longitudinal associations between paternal incarceration and family well-being: Implications for ethnic/racial disparities in health. *J Am Acad Child Adolesc Psychiatry*. 2021;0(0). doi:10.1016/j.jaac.2021.08.005

39. Huynh VW, Huynh QL, Stein MP. Not just sticks and stones: Indirect ethnic discrimination leads to greater physiological reactivity. *Cultur Divers Ethnic Minor Psychol*. Published online 2017:No Pagination Specified. doi:10.1037/cdp0000138

40. Heard-Garris NJ, Cale M, Camaj L, Hamati MC, Dominguez TP. Transmitting trauma: A systematic review of vicarious racism and child health. *Soc Sci Med 1982*. 2018;199:230-240. doi:10.1016/j.socscimed.2017.04.018

41. English D, Lambert SF, Ialongo NS. Longitudinal associations between experienced racial discrimination and depressive symptoms in African American adolescents. *Dev Psychol*. 2014;50(4):1190-1196. doi:10.1037/a0034703

42. Hoggard LS, Byrd CM, Sellers RM. The lagged effects of racial discrimination on depressive symptomology and interactions with racial identity. *J Couns Psychol*. 2015;62(2):216-225. doi:10.1037/cou0000069

43. Seaton EK, Iida M. Racial discrimination and racial identity: Daily moderation among Black youth. *Am Psychol*. 2019;74(1):117-127. doi:10.1037/amp0000367

44. Argabright ST, Visoki E, Moore TM, et al. Association between discrimination stress and suicidality in preadolescent children. *J Am Acad Child Adolesc Psychiatry*. Published online August 20, 2021:S0890-8567(21)01355-1. doi:10.1016/j.jaac.2021.08.011

45. Anderson RE, Stevenson HC. RECASTing racial stress and trauma: Theorizing the healing potential of racial socialization in families. *Am Psychol*. 2019;74(1):63-75. doi:10.1037/amp0000392

46. Galán CA, Tung I, Tabachnick AR, et al. Combating the conspiracy of silence: Clinician recommendations for talking about racism-related events with youth of color. *J Am Acad Child Adolesc Psychiatry*. 2022;61(5):586-590. doi:10.1016/j.jaac.2022.01.001

47. Del Toro J, Wang MT. School cultural socialization and academic performance: Examining ethnic-racial identity development as a mediator among African American adolescents. *Child Dev*. Published online November 2020. doi:10.1111/cdev.13467

48. Wang MT, Henry DA, Smith LV, Huguley JP, Guo J. Parental ethnic-racial socialization practices and children of color's psychosocial and behavioral adjustment: A systematic review and meta-analysis. *Am Psychol*. Published online 2019:Advance online publication. doi:10.1037/amp0000464

49. English D, Lambert SF, Tynes BM, Bowleg L, Zea MC, Howard LC. Daily multidimensional racial discrimination among Black U.S. American adolescents. *J Appl Dev Psychol*. 2020;66. doi:10.1016/j.appdev.2019.101068

50. Eschmann R. Digital resistance: How online communication facilitates responses to racial microaggressions. *Sociol Race Ethn*. 2020;0(0):2332649220933307. doi:10.1177/2332649220933307

Figure 1: Key Dates of 2020 in the United States and Study Design

Table 1: Descriptive Statistics of Key Measures among 351 Black Adolescents and 10,639 Daily Diaries

	Wave 1	Wave 2	Wave 3	Wave 4	
Continuous measures	Mean (*SD*)	Mean (*SD*)	Mean (*SD*)	Mean (*SD*)	Range
Depressive symptoms	1.63 (0.74)	1.58 (0.80)	1.52 (0.73)	1.47 (0.65)	1-5
Anxiety symptoms	1.76 (0.76)	1.57 (0.70)	1.56 (0.67)	1.62 (0.69)	1-5
Stress	1.88 (0.58)	1.55 (0.58)	1.52 (0.56)	1.69 (0.65)	1-4
Tiredness	2.42 (0.74)	2.10 (0.74)	2.03 (0.69)	2.11 (0.83)	1-5
Time spent online (Hours)	3.88 (2.64)	5.21 (2.63)	5.05 (2.61)	4.74 (2.54)	0-24
Categorical measures	Sum or %	Sum or %	Sum or %	Sum or %	Total
Counts of online racial discrimination incidents	42.00	85.00	224.00	318.00	669.00
% of participants reporting online racial discrimination	8.00	13.40	21.10	21.70	45.00
Count of cybervictimization experiences	16.00	42.00	35.00	29.00	107.00
% of participants reporting general cybervictimization	2.30	6.80	4.60	4.60	16.00

Table 2: Zero-Order Bivariate Correlations among Key Study Variables among the Sample of 351 Black Adolescents and 10,639 Daily Diaries

Within-person variables		1	2	3	4	5	6	7	8	9	10	11
1	Online racial discrimination	1										
2	Depressive symptoms	.15**	1									
3	Anxiety symptoms	.16**	.59**	1								
4	Stress	.12**	.43**	.45**	1							
5	Tiredness	.08**	.31**	.30**	.38**	1						
6	Time spent online	.10**	.11**	.08**	.09**	.06**	1					
7	Cybervictimization	.17**	.15**	.18**	.12**	.06**	.09**	1				
8	Day	.12**	-.08**	-.04**	-.05**	-.08**	.03*	-.01	1			
9	Weekend	.01	-.04**	-.05**	-.08**	-.06**	.01	.01	.05**	1		
10	Last night's sleep quality	-.06**	-.32**	-.26**	-.30**	-.44**	-.06**	-.04**	.10**	.03**	1	
11	Last night's sleep quantity	.00	-.10**	-.06**	-.05**	-.12**	-.04**	.02	.47**	.01	.16**	1
Between-person variables		1	2	3	4	5	6	7	8	9		
1	Boys	1										
2	Age	-.12*	1									
3	Eligible for free lunch	-.08	.02	1								
4	Cohort 2 (vs Cohort 1)	.09	-.02	.00	1							
5	Cohort 3 (vs Cohort 1)	-.02	-.05	-.03	-.38**	1						
6	Cohort 4 (vs Cohort 1)	.06	-.13*	-.29**	-.25**	-.25**	1					
7	Online racial discrimination	-.11*	.10	.02	.03	.04	-.05	1				
8	Time spent online	-.17**	.15**	-.03	.03	.08	-.03	.17**	1			
9	Cybervictimization	-.10	.01	-.02	.13*	-.04	.01	.33**	.06	1		

Note: $*p < .05$; $**p < .01$; $***p < .001$.

Table 3: Multi-Level Models Predicting Same-Day and Next-Day Mental Health Symptoms across 58 Days among 351 Black Adolescents and 10,639 Daily Diaries

Same day outcomes	Depressive symptoms		Anxiety		Stress		Tiredness	
Fixed effects	Estimate (*SE*)	95% *CI*	Estimate(*SE*)	95% *CI*	Estimate (*SE*)	95% *CI*	Estimate (*SE*)	95% *CI*
Within-person								
Day	.00 (.00)	[-.01, .00]	.00 (.00)	[-.01, .01]	.00 (.00)	[.00, .00]	-.01 (.01)	[-.01, .00]
Weekend	-.07 (.01)***	[-.10, -.04]	-.08 (.01)***	[-.11, -.05]	-.14 (.02)***	[-.17, -.11]	-.11 (.02)***	[-.15, -.07]
Last night's sleep quality	-.11 (.02)***	[-.14, -.08]	-.06 (.01)***	[-.09, -.03]	-.10 (.01)***	[-.13, -.08]	-.34 (.02)***	[-.38, -.29]
Last night's sleep quantity	.00 (.00)	[-.01, .01]	.00 (.00)	[-.01, .01]	.00 (.00)	[-.01, .01]	-.01 (.00)**	[-.01, -.01]
Online racial discrimination	.18 (.05)***	[.08, .29]	.17 (.05)**	[.07, .26]	.14 (.04)**	[.05, .22]	.07 (.04)	[-.01, .16]
Time spent online	.01 (.01)	[-.01, .03]	.00 (.01)	[-.02, .01]	-.01 (.01)	[-.03, .01]	.01 (.01)	[-.01, .03]
Cybervictimization	.20 (.13)	[-.06, .45]	.34 (.09)***	[.16, .52]	.18 (.08)*	[.02, .33]	.04 (.14)	[-.24, .32]
Between-person								
Boys	-.08 (.07)	[-.21, .05]	-.02 (.06)	[-.14, .11]	.00 (.05)	[-.10, .11]	-.05 (.07)	[-.18, .08]
Age	.10 (.02)***	[.05, .15]	.07 (.02)***	[.03, .11]	.05 (.02)**	[.02, .09]	.07 (.02)***	[.03, .11]
Eligible for free lunch	.06 (.08)	[-.10, .21]	.07 (.07)	[-.07, .21]	.06 (.06)	[-.05, .18]	.15 (.08)	[-.01, .29]
Cohort 2 (vs Cohort 1)	-.14 (.08)	[-.29, .01]	-.20 (.07)**	[-.34, -.06]	-.35 (.06)***	[-.47, -.23]	-.25 (.08)**	[-.40, -.10]
Cohort 3 (vs Cohort 1)	.06 (.13)	[-.19, .30]	-.09 (.10)	[-.29, .11]	-.18 (.09)*	[-.35, -.01]	-.15 (.10)	[-.35, .05]
Cohort 4 (vs Cohort 1)	.02 (.15)	[-.28, .31]	-.10 (.14)	[-.37, .18]	-.18 (.13)	[-.43, .08]	.12 (.20)	[-.28, .51]
Online racial discrimination	.22 (.07)**	[.08, .37]	.17 (.07)**	[.04, .30]	.11 (.05)*	[.01, .22]	.14 (.07)*	[.01, .28]
Time spent online	.02 (.02)	[-.01, .06]	.03 (.02)	[-.01, .06]	.04 (.01)**	[.01, .07]	.02 (.02)	[-.01, .06]
Cybervictimization	.19 (.10)	[-.01, .38]	.31 (.11)**	[.10, .51]	.15 (.08)	[-.01, .31]	.04 (.09)	[-.14, .21]
Random effects								
Within-person								
Residual-intercept	.42 (.03)***	[.36, .47]	.39 (.02)***	[.35, .43]	.43 (.02)***	[.39, .48]	.70 (.03)***	[.64, .76]

Between-person								
Intercept	1.92 (.12)***	[1.68, 2.16]	1.81 (.11)***	[1.58, 2.04]	2.09 (.09)***	[1.90, 2.28]	3.45 (.13)***	[3.19, 3.70]

Model fit indices: χ^2 (25) = 122.62, p < .001, RMSEA = .01 CFI = .98, $SRMR_{within}$ = .01, $SRMR_{between}$ = .05

Next day outcomes	Depressive symptoms		Anxiety		Stress		Tiredness	
Fixed effects	Estimate (*SE*)	95% *CI*	Estimate (*SE*)	95% *CI*	Estimate (*SE*)	95% *CI*	Estimate (*SE*)	95% *CI*
Within-person								
Day	.00 (.00)	[.00, .00]	.00 (.00)	[.00, .00]	.00 (.00)	[.00, .00]	-.01 (.01)	[-.01, .01]
Weekend	-.07 (.01)***	[-.09, -.04]	-.08 (.01)***	[-.10, -.05]	-.14 (.02)***	[-.17, -.11]	-.11 (.02)***	[-.15, -.07]
Last night's sleep quality	-.11 (.02)***	[-.14, -.08]	-.05 (.01)***	[-.08, -.03]	-.09 (.01)***	[-.12, -.06]	-.33 (.02)***	[-.38, -.29]
Last night's sleep quantity	.00 (.00)	[-.01, .01]	.00 (.00)	[-.01, .01]	.00 (.00)	[-.01, .01]	-.01 (.00)**	[-.01, -.01]
Online racial discrimination	.16 (.05)**	[.06, .26]	.14 (.05)**	[.04, .24]	.16 (.04)***	[.07, .24]	.01 (.04)	[-.07, .09]
Time spent online	.01 (.01)	[-.01, .02]	.00 (.01)	[-.01, .02]	.00 (.01)	[-.01, .02]	.00 (.01)	[-.02, .02]
Cybervictimization	.19 (.09)*	[.01 .38]	.20 (.08)*	[.04, .36]	.16 (.09)	[-.01, .33]	.25 (.13)	[-.02, .51]
Between-person								
Boys	-.08 (.07)	[-.22, .06]	-.02 (.07)	[-.14, .11]	.00 (.06)	[-.11, .11]	-.04 (.08)	[-.19, .11]
Age	.11 (.02)***	[.06, .16]	.08 (.02)***	[.03, .12]	.06 (.02)**	[.03, .10]	.11 (.02)***	[.06, .16]
Eligible for free lunch	.07 (.08)	[-.08, .23]	.08 (.07)	[-.06, .22]	.08 (.06)	[-.04, .20]	.20 (.09)*	[.02, .38]
Cohort 2 (vs. Cohort 1)	-.17 (.08)*	[-.32, -.01]	-.22 (.08)**	[-.36, -.07]	-.37 (.06)***	[-.50, -.24]	-.34 (.08)***	[-.50, -.18]
Cohort 3 (vs. Cohort 1)	.04 (.13)	[-.22, .30]	-.09 (.10)	[-.30, .11]	-.19 (.09)*	[-.37, -.01]	-.19 (.12)	[-.43, .05]
Cohort 4 (vs. Cohort 1)	.00 (.16)	[-.31, .31]	-.10 (.15)	[-.39, .18]	-.16 (.13)	[-.42, .11]	.06 (.22)	[-.37, .50]
Online racial discrimination	.25 (.07)**	[.10, .40]	.19 (.07)**	[.06, .32]	.13 (.06)*	[.02, .24]	.21 (.08)**	[.06, .36]
Time spent online	.03 (.01)*	[.01, .06]	.03 (.01)*	[.01, .06]	.04 (.01)**	[.02, .07]	.04 (.02)*	[.01, .08]
Cybervictimization	.17 (.10)	[-.03, .37]	.31 (.11)**	[.10, .52]	.14 (.08)	[-.03, .31]	-.01 (.10)	[-.21, .20]
Random effects								
Within-person								

Residual-intercept	.42 (.03)***	[.36, .47]	.39 (.02)***	[.35, .43]	.43 (.02)***	[.39, .48]	.70 (.03)***	[.64, .76]
Between-person								
Intercept	1.47 (.10)***	[1.26, 1.67]	1.57 (.10)***	[1.38, 1.76]	1.72 (.08)***	[1.56, 1.89]	2.12 (.11)***	[1.91, 2.33]

Model fit indices: $\chi^2(25) = 82.93$, $p < .001$, RMSEA = .01 CFI = .99, $SRMR_{within} = .01$, $SRMR_{between} = .05$

Note: SE = Standard error.

$*p < .05$; $**p < .01$; $***p < .001$.