

**Social Media and Mental Health: The Relationship Between the Passive Consumption of
Racially Biased Information and Stress on Twitter Amongst Major College Ethnic Groups**

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Abstract

With Twitter's rapidly increasing popularity, it has recently increased the likelihood of the passive consumption of racial information which could affect stress. However, no extant studies have looked at the correlation between these two aspects. The current study sought to answer whether Twitter use increases how often select ethnic groups in Daytona State College vicariously and/or passively consume racial information and if this consumption may be a critical stressor that may pointedly relate to the onset of stress. Guided by the Perceived Stress Scale (Cohen et al., 1983) and the Life Experiences and Stress Scale (Harrell 1994), researchers conducted an online survey of 60 Daytona State College students assessing their perceptions of life stress and perceptions of racism. The results of this study indicate that while all ethnic groups experienced similar, moderate levels of stress and perceived racism, still, there is a weak relationship between the passive consumption of racial information on Twitter and stress. While our results were limited by our sample size, and survey instrument, they contradict existing research (Soto et al., 2011; Cater & Murphy, 2015) which suggest that minority groups experience higher levels of perceived racism and therefore, higher levels of stress. Future researchers should focus primarily on minority ethnic groups to determine if their minority identity would affect their interpretation of online racial information.

Keywords: passive consumption, perceived racial information, anxiety, social media, twitter, mental health, racial battle fatigue.

Social Media and Mental Health: The Relationship Between the Passive Consumption of Racially Biased Information and Stress on Twitter Amongst Major College Ethnic Groups

In recent years, social media has become a common way to propel some social movements. Among multiple social media platforms, Twitter has been increasingly used by Americans as a platform to get news –most Twitter users don’t tweet often. 42% of U.S. adults on Twitter say they use the site to discuss politics at least some of the time. By comparing social media platforms, it is evident that Twitter has the most news focused users (Hughes & Wojcik, 2019). A hashtag list released by Twitter on their 10-year anniversary shows two of their top three hashtags were directly related to issues of race. Six in ten race-related tweets were tied to current events (Anderson, 2016). One of the notable hashtags #BlackLivesMatter, which is often used in connection with police-related deaths of African Americans, has emerged on Twitter roughly 3.7 million times per day from May 26 to June 7, after George Floyd’s death on May 25 (Anderson et al., 2020). Social media has become a sociopolitical source for deliberations of racism and its consumption, and individuals’ responses to both the former and the latter (Tynes, 2015).

Twitter use among College Students

Among the 22% of U. S. adults who use Twitter, the percentage of the age group from 18 to 29 is significantly high, accounting for 38% (Perrin & Anderson, 2019). According to Developmental Psychology, ages 18 – 29, the time period starting in the late teens through the twenties, is defined as emerging adulthood (Arnett, 2000). Past studies have shown that emerging adulthood is a distinct time period, when the individual experiences instability due to major changes in their everyday lives - moving away from home, attending college, or engaging in romantic relationships. The accumulation of confusion and loneliness during their journey of

self-exploration makes a great impact on their psychological maturity (Arnett, 2015). The association between social media use and college students' mental health has been examined by scholars since technology and social media are ubiquitous in this age group's daily life. The result of this examination shows the use of multiple social media platforms is independently associated with anxiety (Primack et al., 2017).

Social Media and Mental Health

Carr and Hayes (2015) define social media as “the various internet-based activities that enable users to interact with others, verbally and visually (as cited in Keles et al., 2019, p. 79). Although its use broadens individuals' views in an unexpected way, it has brought about issues related to mental and physical health. Past studies have found that there is a strong relationship between social media use and some psychological variables, such as depression, anxiety, sleeping disturbance, and global health (Primack et al., 2017; Karaman, M., 2019; Shensa et al., 2018).

As reported in Ridout & Campbell (2018), the years of adolescence and young adulthood, although a particularly vulnerable period, is the prime occurrence of mental health issues arising (Introduction section). Over the past decade, Anderson & Jiang (2018) reported that social media has become an important part of individuals' lives with “45% of teens reporting that they are online on a near-constant basis.” It has detrimental consequences in regard to development such as “lower educational attainment, school dropout, impaired social relationships, and increased risk of substance abuse, mental health problems and suicide” (Copeland et al., 2014; Gore et al., 2011; Hetrick et al., 2016, as cited in Keles et al., 2019, p. 79). Therefore, studying and determining the onset of these issues so as to support those who suffer from mental health is becoming the primary focus of many public health organizations.

According to The World Health Report (2004), “Mental health is defined as a state of well-being in which people understand their abilities, solve everyday life problems, work well, and make a significant contribution to the lives of their communities” (as cited in Karim et al., 2020, Introduction section). Mental health professionals therefore suggest that “potential causal factors from social media can be considered when cooperating with patients who have been diagnosed with anxiety or depression” (Karim et al., 2020, Conclusions section).

GAD and Racial Battle Fatigue

Generalized Anxiety Disorder (GAD) appeared as a diagnostic category in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) in 1980. Before the DSM though, the rise of modern psychiatry in the late 18th century, many scholars examined the phenomenon of GAD, namely, persistent free-floating anxiety followed by nervous apprehension or concern about several circumstances of everyday life. (Crocq, 2017, p. 107). Anxiety was supposed to be a danger signal sensed and generated by a threat from inside the personality by the "conscious part" of the personality; the different ways in which patients tried to manage this anxiety resulted in different kinds of reactions. With GAD, “anxiety reaction” was characterized by nervous anticipation and often correlated with somatic symptomatology—different from usual fear or apprehension. Somatic symptomatology just refers to the physical health conditions which are correlated with GAD. According to the Anxiety and Depression Association of America (2019), GAD is diagnosed when a person finds it hard to control worry for far more days than not, as well as experiencing it for at least six months and feeling three or more DSM specific symptoms, such as difficulty controlling worry, muscle tension, sleep disturbance (difficulty falling/staying asleep, restless, unsatisfying sleep), irritability, and concentration problems.

Racial Battle Fatigue (RBF) is a concept being discussed in the research field as the study of how social environments can perpetuate race-related stressors, and the effects of racism on individuals in society, more specifically students of color (as well as faculty of color) as they try to progress and/or move up in life. The further developed theory of RBF as defined by Smith et al. (2007) is that racial battle fatigue, primarily in black people, is “the result of constant physiological, psychological, cultural, and emotional coping with racial microaggressions in less-than-ideal and racially hostile or unsupportive environments” (as cited in Soto et al., 2011, p. 3).

General social climates, such as organizations, policies, activities, traditions, groups and individuals, are repetitive race-related stressors that adversely affect the health and academic success of students of color and the professional efficiency and promotion of faculty of color. Soto et al. (2011) describes symptoms of racial battle fatigue as being similar to those of anxiety, such as “constant anxiety and worrying, increased swearing and complaining, intrusive thoughts, difficulty in thinking coherently, and hypervigilance” (p. 260).

Current Study

With over 1.3 billion currently existing accounts and 320 million monthly active users – users who frequently upload content and initiate direct interactions with other people (Burnell et al., 2019) – the social media platform Twitter is growing fast (Iqbal, 2020). Although Tsukayama (2016) states that Twitter’s popularity and importance is diminishing due to waning investments, Perrin & Anderson (2019) reports that “there are no major vicissitudes in the percentage of internet users who have active accounts.” Nevertheless, the primary form of engagement on Twitter is passive consumption – described by Burnell et al. (2019) as “browsing without direct social interaction” – accounting for a lump sum of 75.38 % of its users (Introduction section).

Moreover, active social media use is suspected to be positively correlated with improved subjective well-being, whereas passive consumption is suspected to be especially detrimental to people as their self-evaluations of social recognition may become skewed by the information shared online (Burnell et al., 2019).

While many studies have examined the relationship between perceived racism and stress, there are few studies that have looked at the correlation between these two aspects on Twitter. Moreover, there are numerous studies that have examined the impact of social media use on mental health. However, the researchers are particularly focused on the effects of the passive consumption of racially biased information on Twitter user's mental health across major college ethnic groups.

This research aims to question, and answer, whether social media use – particularly Twitter – increases how often select ethnic groups in Daytona State College vicariously and/or personally experience racism through the viewing of racially biased information. By examining the relationships between Twitter use and general stress, we propose that the direct experience of the passive consumption of racially biased information on Twitter may be a critical stressor that may pointedly relate to the onset of stress which may possibly result in Generalized Anxiety Disorder (GAD) among African Americans and Hispanics/Latinos.

Compared to traditional university students, community college students have more severe psychological concerns and less support from institutional mental health resources. With the negative influence of poor mental health, college students tend to withdraw from their life, either dropping out of college or engaging in risky behavior (Katz et al., 2014). We hypothesize that there is a significant correlation between Black or African American and Hispanic/Latino

students' levels of stress and their consumption of racially biased information on Twitter, while the same online information is less likely to cause Caucasian students' stress.

Hypotheses

Guided by Meyer's (2003) Minority Stress Model (MSM) suggesting that that stigma, prejudice, and discrimination create a hostile and stressful social environment that cause mental health problems, the following hypotheses are posited (p. 674):

H1: For Twitter users who self-identify as Caucasian there is not a relationship between the passive consumption of racially biased information and stress.

H2: For Twitter users who self-identify as Black or African American there is a relationship between the passive consumption of racially biased information and stress.

H3: For Twitter users who self-identify as Hispanic/Latino there is a relationship between the passive consumption of racially biased information and stress.

Methods

Sample

In the current study, participants (n = 60 ; aged 18 – 36+; Twitter user; Black or African American, Hispanic/Latino, Caucasian; 72 % female, 23 % male, 0 % trans female, 0 % trans male, 5 % non-binary, 0 % preferred to not answer) were enrolled in a minimum of one class at Daytona State College, both face-to-face and online in the Fall of 2020.

The proposed study required that participants met the above criteria at the time of the survey completion. Thus, those who did not identify as Black or African American (for example, Jamaican, Haitian, Nigerian, Ethiopian, or Somalian), or Hispanic/ Latino (for example, Mexican or Mexican American, Puerto Rican, Cuban, Salvadorian, Dominican, or Columbian), or White

(for example, German, Irish, English, Italian, Polish or French) were excluded. This is due to the fact that according to the Daytona State College Student Population Stats website, the demographic breakdown of the main student body is 62% white, 17.1% Hispanic/Latino, and 12.7% Black or African American. Therefore, the research mainly focuses on these three ethnic groups. Furthermore, those who identified as a non-Twitter user ($n = 85$), as minors ($n = 13$), or were not registered and enrolled in courses at Daytona State College ($n = 2$), were excluded.

In the case that there was missing data, it was replaced with zeros for calculation purposes so as to ensure that there were no errors.

Instruments

The survey asked participants to answer four basic demographic questions in order of age (18 – 23, 24 – 29, 30 – 35, 36 and older), student status/enrollment, gender, and ethnicity.

Participants were asked, “Do you use Twitter as a social media platform? In other words, do you have a Twitter account that you actively engage on, posting content and/or viewing others content?” Following this, participants were divided into one of three sections based on their identified ethnicity. Each section required that the participant answer the exact same questions obtained from two different scales (further discussed below).

Perceived Stress Scale

In the current study, researchers measured participants’ general stress using the Perceived Stress Scale (Cohen et al., 1983) as a reference. The PSS was utilized to determine how unpredictable and stressed participants found their lives by asking questions about their feelings and thoughts in the last month (Cohen et al., 1983). The 10 questions were of a general nature and were comparatively free of content specific to a subpopulation. Each of these questions were administered using a 5-point Likert scale in which participants’ answers ranged from 0 = *Never*

to 4 = *Very often*. When examining the outcomes of this section of the survey, questions four, five, seven, and eight's numerical values were reversed. Therefore, "never" indicated a positive result or the value of four and "very often" indicated a negative result or the value of zero. Scores were collectively combined for each ethnic group to make a general conclusion and effectively answer the posited hypotheses. Scores could range from 0 – 40 with higher scores reflecting higher perceptions of life stress, and lower scores reflecting lower perceptions of life stress, in this case as a result of the racially biased information perceived on Twitter.

Life Experiences and Stress Scale

Harrell's (1994) 8-item Life Experiences and Stress Scale, a subscale from the Racism and Life Experiences Scale (RaLES), was used to assess participants' perceptions of racism (as cited in Seaton et al., 2009, p. 410). It was used to assess multiple dimensions of negative racism experiences (and other racism related concepts) that are posited to impact the psychological well-being of major DSC ethnic groups. Harrell (1997) stated that it "also operationalizes the idea that there are at least three types of racism experiences that parallel common conceptualizations of sources of stress: life event/episodic stress, daily hassles, and chronic/contextual stress" (Introduction section). The questions were modified to include questions about Twitter as the study focused on determining if perceived racism on Twitter was a mediator of anxiety. For example, "In general, how much stress has racism caused you during your lifetime?"; "Overall how much do you think racism affects the lives of people of your same racial or ethnic group?" were changed to "In general, how much stress has racism, perceived over the Twitter platform, caused you during your lifetime?"; "Overall, how much do you think race-related content on Twitter (such as racial slurs, hate speech, etc.) affects the lives of people of your same racial ethnic group?". Participants were required to answer each question using a

5-point Likert scale. Scores could range from 0 – 32 in which a summary score was obtained using the mean of the eight questions, with higher scores demonstrating greater experiences with racism.

Procedures

Researchers contacted various professors at Daytona State College to digitally share their survey to their classes. Additionally, the survey was shared across the DSC Quanta Honors program. If the participant agreed to participate in the study, they were directed to the Google Form survey document via a provided link. Furthermore, participants had the option to terminate participation at any time if they did not wish to continue to partake in the study. Overall, survey conduction lasted a total of eight days.

Results

The researchers aimed to determine if there was a relationship between the passive consumption of racially biased information and stress on Twitter amongst major ethnic student populations in Daytona State College. These three groups reported no statistically significant findings however, there were notable trends in the data.

Overall, the most common participant age range was 18 - 23 years old, and across all ethnic groups, there were significantly more women (n = 43) than men (n = 14).

Table 1

Mean Scores on the Perceived Stress Scale Questions by Ethnicity

	Sample size	Mean	SD
Black or African American	10	24.80	3.85
Hispanic/Latino	15	26.73	7.56

Caucasian	32	25.91	7.03
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Table 1 suggests that all ethnic groups experienced similar, moderate perceived levels of stress. While the mean score of Hispanic/Latino participants was the highest among all three ethnic groups $\bar{x} = 26.73$ (SD = 7.56), Caucasian participants had a score of $\bar{x} = 25.91$ (SD = 7.03). Whereas, Black or African American participants had the lowest levels of perceived stress $\bar{x} = 24.80$ (SD = 3.85), almost 2 points lower than that of Hispanic/Latino's and more than one point lower than Caucasian participants' mean scores.

Table 2

Mean Scores on the Life Experiences and Stress Scale Questions by Ethnicity

	Sample size	Mean	SD
Black or African American	10	19.80	5.01
Hispanic/Latino	15	21.13	7.61
Caucasian	32	16.63	6.72

Table 2 suggests that all ethnic groups experienced moderate levels of perceived racism - through information - on the Twitter platform. While the mean score of Hispanic/Latino participants was the highest among all ethnic groups $\bar{x} = 21.13$ (SD = 7.61), Black or African American participants, the other minority group, followed closely with a score of $\bar{x} = 19.80$ (SD = 5.01). Whereas, Caucasians scored a below average mean score of $\bar{x} = 16.63$ (SD = 6.72).

Table 3

Correlation between Perceived Racial Information on Twitter and Stress by Ethnicity

	r ²	r value	P value
Black or African American	0.09	0.29	0.41
Hispanic/Latino	0.08	0.28	0.31
Caucasian	0.01	0.07	0.70

Table 3 suggests that there was no statistically significant correlation between the passive consumption of racially biased information and stress on Twitter across all ethnic groups. While $r < 0.3$ across all groups therefore suggesting a weak positive linear correlation, with Caucasian participants r value ($r = .07$) suggesting a very weak linear correlation. Moreover, in response to the researcher's hypothesis, $p > 0.05$ across all ethnic groups suggests that the passive consumption of racially biased information on Twitter did not have a statistically significant relationship with stress.

Discussion

American college students universally use social media to not only communicate with friends, but also to express and consume toxic and racist information in America. Chan (2017) stated that “heightened racial tensions across college campuses and the United States have increased the volume of racial discourse on social media” (p. 163). Using the various free, unrestricted online platforms for expression and perception, social media sites (including Twitter) have sparked deliberations of modern-day race relations and racism among users. Few studies have looked at the manifestation of the relationship between perceived racial information and stress on social media – particularly Twitter; therefore, the primary aim of the present study was to determine whether the passive consumption of racially biased information on Twitter is a

mediator of stress in a sample of black or African American, Hispanic/Latino, and Caucasian students.

In the current study, no correlation between either of the ethnic groups was found between the passive consumption of racially biased information on Twitter and stress levels. Therefore, findings from this study did not support hypotheses two and three. Moreover, there were no significant differences between the three major ethnic groups. This is different from previous studies which had suggested that minorities, like African Americans and Afro Caribbeans, have much more experience passively consuming racial information and therefore associate with poorer health conditions (Soto et al., 2011).

The levels of perceived racism through the viewing of racially biased information online in the current sample are consistent with extensive studies that demonstrate a higher prevalence of perceived racism among minority groups, in this case Black or African Americans and Hispanic/Latinos compared to Caucasians (Keum & Miller, 2018; Keum & Miller, 2017; Woo et al., 2019). This is a general pattern of finding, now supported by a considerable body of literature (Shepherd et al., 2018; Nyborg & Curry, 2003). Since scores for the Life Experiences and Stress subscale questions could range from 0 - 32, a closer look at their means found that the magnitude of the difference of the passive consumption of racially biased information on Twitter was somewhat striking. This is because it was relatively high among the Black or African American ($x = 19.80$) and Hispanic/Latino ($x = 21.13$) minority groups and although moderate amongst the Caucasian ($x = 16.63$) sample group, it was more than three points lower than its closest competitor.

Since participants represented the three major ethnic groups at Daytona State College, we anticipated that the groups would conform to cultural biases and “belong to a group that

fundamentally shapes the way we interpret and attribute the behavior of others” (Vallone, Ross, & Lepper, 1985. p. 577). Therefore, when confronted with the same racially biased information, each group would be expected to interpret the information in a way which is unique to their racial group. These perceptual discrepancies have consequences for policy attitudes, decisions about how best to combat racial inequality, and beliefs about whether inequality persists (Cater & Murphy, 2015). Moreover, this finding strongly suggests that affiliates of minority groups may endure experiences that are unambiguously different from their non-minority equivalents - that is, the passive consumption of racially biased information on Twitter is a fairly common incidence.

The findings of the levels of general stress among the respective minority groups were not supportive of previous research which suggests that minority groups tend to experience higher levels of stress than their non-minority counterparts (Soto et al., 2011). Mean scores on the Perceived Stress Scale indicated that all the respective ethnic groups experience similar levels of stress with Hispanic/Latinos having the highest mean score of 26.73, Caucasians following with a mean score of 25.91, and shockingly, Black or African Americans having the lowest mean score of 24.80. Not only does this indicate that general stress is a similar experience for all race groups, but it also suggests that general stress is not something that individuals know how to accurately deal with. Although racial battle fatigue is conceptually linked to GAD, our findings in the current study are not conclusive of this.

Moderate levels of stress among all ethnic groups, irrespective of the fact that they were not pointedly correlated with the passive consumption of racially biased information on Twitter, may lead to negative health implications in the future. These include but are not limited to: constant anxiety and worrying, increased swearing and complaining, intrusive thoughts,

difficulty in thinking coherently, and hypervigilance - all symptoms of GAD (Soto et al., 2011). Given such findings, it is plausible to state that it is pertinent that health professionals lend support for the development of programs that address maladaptive consequences associated with general stress to enhance effective preventative health strategies and possibly prevent the onset of GAD.

Limitations

While this study faced its fair share of limitations, the primary limitation was the instrument used to measure the passive consumption of racially biased information and general stress amongst participants. The instrument in itself was not effectively designed to determine the relationship due to the scales used, thus resulting in less opportunity for the researchers to promote the survey to their targeted audience. Moreover, due to the nature of the survey questions, Google Forms was not configured so that no item could be skipped. Thus, participants could choose to skip a question or terminate participation at any time. This resulted in missing data (as participants failed to answer all of the questions).

Another limitation is that the survey was strictly limited to the distribution among DSC students, preventing the overall number of participants in the study. Closely related to sample participants' DSC student status, researchers were faced with the limitation that DSC's student demographics is largely made up of Black or African Americans, Hispanic/Latinos, and Caucasians accounting for 91.8% of their overall student population. Not only did this restrict the researchers to only study certain population groups but it also presented data analogous with the collected demographic data from participants. Thus, with a larger sample of Caucasian participants, it resulted in their responses being more indicative of their actual levels of perceived stress $\bar{x} = 25.91$, while the small sample of Black or African American participants did not allow

researchers to fully investigate this phenomenon. Moreover, this outcome is largely attributed to the researcher's examination of the relationship between the passive consumption of racially biased information on Twitter and its correlation with stress and not based on direct experiences of racism and stress. The online racially biased information is not necessarily related to one's real life experience or experiences which directly threaten one's daily life.

Suggestions for Future Research

Many of the suggestions for future research are related to the limitations of this study. Although significant findings were not rendered with this design, longitudinal studies that assess the passive consumption of racially biased information on Twitter over long periods of time could provide greater insight into its use and possibly determine when and how it leads to the onset of general stress among college students. Moreover, future studies can delve into the relationship between perceived racism – through the passive consumption of racially biased information on Twitter – and different ethnic groups' reactions, especially when it comes to dealing with the same event or some ambiguous situation. There are likely important cultural aspects as well as psychological aspects that need to be considered as it is important for people from different races to have conversations about their divergent perceptions of racism.

Additionally, a future study might focus primarily on minority ethnic groups to see whether their minority identity would affect their interpretation of online racially biased information. Also, a sample of non-Twitter users can be included as a control group in this study to determine how other racism related variables (those not on Twitter) may trigger general stress. Furthermore, research indicates that 56 % of U.S. Twitter users are men, and 44 % are women (Iqbal, 2020), thus gender can be included in a future study so as to determine if gender will moderate the relationships between Twitter use and anxiety, such that overall men will observe

racism and appraise such events as more stressful compared to women. Future researchers are encouraged to replicate and distribute this study among more colleges allowing for a larger sample group so that a more comprehensive set of data can be gathered so as to determine if there is indeed a correlation between the passive consumption of racially biased information on Twitter and stress.

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