ABSTRACT

Title of Thesis: RACISM IN DIGITAL ERA: DEVELOPMENT AND INITIAL VALIDATION OF THE PERCEIVED ONLINE RACISM SCALE (PORS V1.0)

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Racism continues to thrive on the Internet. Yet, little is known about racism in online settings and the potential consequences. The purpose of this study was to develop the Perceived Online Racism Scale (PORS), the first measure to assess people's perceived online racism experiences as they interact with others and consume information on the Internet. Items were developed through a multi-stage process based on literature review, focus-groups, and qualitative data collection. Based on a racially diverse large-scale sample (N = 1023), exploratory and confirmatory factor analyses provided support for a 30-item bifactor model with the following three factors: (a) 14-item PORS-IP (personal experiences of racism in online interactions), (b) 5-item PORS-V (observations of other racial/ethnic minorities being offended), and (c) 11-item PORS-I (consumption of online contents and information denigrating racial/ethnic minorities and highlighting racial injustice in society). Initial construct validity examinations suggest that PORS is significantly linked to psychological distress.

RACISM IN DIGITAL ERA: DEVELOPMENT AND INITIAL VALIDATION OF
THE PERCEIVED ONLINE RACISM SCALE (PORS V1.0)

by

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Chapter 1: Introduction

Racism, or the acts, beliefs, and societal structures that denigrate individuals based on their racial/ethnic group affiliation, continues to thrive on the Internet (Hughey & Daniels, 2013; Lewis, Cogburn, & Williams, 2013). For instance, the website "Geography of Hate" tracked over 150,000 accounts of publically available racist tweets across the United States (U.S.) in just one year (Stephens, 2013). As people use Twitter to provide instant real-time updates related to what they are doing or thinking, many of these racist tweets provided a window into people's unspoken racist beliefs (Chaudhry, 2015; Picca & Feagin, 2007). This is one of the many examples of how racism has extensively penetrated the cyberspace.

Many have contended that racist speech has become explicit and common in the online space (Breckheimer, 2001; Van Blarcum, 2005). The internet has been dubbed as a "safe haven" free from having to think about political correctness and being called "racist" due to a sense of anonymity (Daniels, 2013; Hughey & Daniels, 2013). Along with ineffective content moderation, online anonymity has been suggested to minimize social restrictions and inhibitions usually present in offline face-to-face interactions (Joinson, 2007; Santana, 2014; Suler, 2004). These conditions enable users to freely and publically disclose their racist ideologies with little accountability (Hardaker, 2010).

Yet, online racism has received scant attention. The dearth of knowledge is surprising given the significance of the Internet in everyday behaviors and attitudes

(Raacke & Bonds-Raacke, 2008). The majority of the global population and nearly

73% and 59% of respective Internet users in the United States (U.S.) and Canada are

connected everyday with higher rates of usage observed among racial minority adults

such as African Americans and Hispanics (Berkman, 2013; Pew, 2014; PMB, 2010).

To advance knowledge on online racism, scholars have called for empirical attention

on racism experiences on the Internet (Daniels, 2013, 2015; Hughey & Daniels, 2013;

Goldsmith & Wu, 2006; Lewis, Cogburn, & Williams, 2015; Tynes, 2007). Filling

this gap may shed light on the potential risks of online racism, given that racism is

linked to direct and indirect psychosocial and physical costs such as isolation,

socioeconomic loss (e.g., poverty), psychiatric symptoms, and health risks (e.g., high

blood pressure) for racial/ethnic minority groups (Karlsen & Nazroo, 2002; Okazaki,

2009; Pascoe & Richman, 2009; Williams & Mohammed, 2009). Consistent with

mental health costs of racism, initial studies into racial/ethnic aspects of online

victimization in the field of cyberbullying have documented evidence for poorer

psychosocial functioning (e.g., depression, anxiety) in adolescents (Tynes et al., 2008;

Tynes, Umana-Taylor, Rose, Lin, & Anderson, 2012; Umana-Taylor, Tynes,

Toomey, Williams, & Mitchell, 2015).

In contributing to this emerging area of racism, our goal was to develop a

psychometrically sound measure to assess online racism experiences as people

interact with others and consume information on the Internet. Importantly, the

definition of racism used in the current study takes into consideration the racial

hierarchy and power dynamics present in multiracial/ethnic societies between the

societal privileges sustained by the dominant group compared to the oppression

experienced by the non-dominant groups (e.g., Harrell, 2000; Williams &

Mohammed, 2009). Thus, our perspective of racism reflected the social and political

reality of the maltreatment, unjust burden, discrimination, and hindrance in the lives

of racial/ethnic minority groups (Carter, 2007; McConahay, 1986; Sue et al., 2007).

Online Racism

Despite the lack of empirical attention, the presence of online racism is not

new. Since the inception of the Internet, racist representations have been consistently

regarded as a commonly observable phenomenon transmitted in various forms

alongside the evolution of online social platforms (Daniels, 2013, 2015; Hughey &

Daniels, 2013). For instance, Back (2002) introduced the concept of cyber racism.

Cyber racism was coined to describe how the Internet technology was being used by

White nationalists to justify a racist culture and propagandize White supremacy.

Consequently, Internet users were exposed to online-mediated contents (e.g., texts,

photos) representing these messages and ideologies, signifying a unique experience of

perceived racism in online settings compared to offline face-to-face incidents.

Beyond cyber racism, the rapid advancement of online social platforms and

Internet technologies have created many different ways in which people may convey

and perceive racism on the Internet, whether through the interactions in online social

platforms or the information consumed in light of the vast contents available online.

Qualitative studies on online discourses have documented common and explicit

interpersonal exchanges of overt and subtle racist messages between Internet users.

For example, these exchanges have been observed in the discussion of American

Indians and African American athletes, exchanges among adolescents, and through

racist jokes and hateful speeches in social media platforms and discussion forums (Chaudhry, 2015; Cleland, 2013; Gerstenfield, Grant, & Chiang, 2003; Harrison et al., 2010; Steinfeldt et al., 2010; Tynes et al., 2004; Weaver, 2011). More overt and violent forms of these exchanges have been coined as "flaming" and "trolling," denoting online specific text-based insults among Internet users (Bomberger, 2004; Walther, 2009). "Flaming" refers to heated, hostile online insults during quick and successive of back and forth exchanges. "Trolling" refers to the intention of deliberately starting arguments and upsetting people by posting inflammatory content.

Conversely, subtle messages of racial microaggressions and those implying colorblind ideologies have also been observed in the aforementioned qualitative studies (e.g., Cleland, 2013; Gerstenfield et al., 2003; Harrison et al., 2010; Steinfeldt et al., 2010). Racial microaggressions refer to insults that demean people's racial heritage and messages that nullify the experiential reality of people of color (Sue et al., 2007). Colorblindness refer to denial of racism and the racial privileges (Neville, Lilly, Duran, Lee, & Browne, 2000). In particular, Daniels (2015) theorized the salience of colorblind racism on the Internet based on the assumption that the Internet is a place where various demographic identities such as race, gender, and other physical traits may lose visibility and significance. Based on this assumption, Daniels suggested that Whites and other majority groups may more conveniently dismiss issues of race and racism on the Internet. In support of this assumption, Tynes and Markoe, (2010) found that White undergraduate students high in colorblind attitudes were more likely to disregard racist contents in social media and even affirm and

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make fun of the racist practices compared to African American students with lower colorblind attitudes.

In addition to racist encounters in online interactions, studies have demonstrated the availability of various types of online information related to the denigration of racial/ethnic minorities and racial injustice in society. In addition to the White supremacy movements on the Internet (Back, 2002), the Internet is full of information that can be perceived to be racist (Daniels, 2013; Hughey & Daniels, 2013). Often without notice, people may encounter information and organizations available online that can spur negative reactions and feelings related to racism (David-Ferdon & Hertz, 2007). For example, these encounters may include: (1) content (e.g., videos, photos, and articles) reporting on controversial online or offline racist events (e.g., police brutality on racial/ethnic minorities; Milner, 2013), (2) information on systemic issues of racism (e.g., disparities in healthcare; Feagin & Bennefield, 2014), (3) online organizations (e.g., online hate groups) propagandizing racist motives through online-mediated means (e.g., White supremacy groups; Daniels, 2009), and (4) negative or stereotypical portrayals of people of color in everyday online media (Chau & Xu, 2007). As a result, it is important to note that information on multiple levels of racism ranging from personal to systemic may be more readily available on the Internet. This is a potentially important aspect of racism on the Internet that studies to date have missed due to their predominant focus on offline interpersonal racism (Paradies, 2006; Pascoe & Richman, 2009).

Measurement of Perceived Online Racism

Our review of the relevant literature suggests that online racism experiences can involve multiple levels ranging from personal to systemic. Accordingly, existing racism measures on these domains can help inform the characterization and development of the PORS. Racism perceived through online interactions (e.g., receiving a racist post) bear resemblance to the offline interpersonal racism captured in existing measures. This domain is also the most studied aspect in the current array of racism measures (Paradies, 2006) and has been the focus among the most widely used measures such as the Experiences of Discrimination (Krieger, Smith, Naishadham, Hartman, & Barbeau, 2005), the Everday Discrimination Scale (EDS; Forman, Williams, & Jackson, 1997; Essed, 1991), and the Schedule of Racist Events (Landrine & Klonoff, 1996). Likewise, the presence of subtle racism messages conveying racial microaggressions or colorblind ideologies in online interactions may be informed by existing measures capturing these concepts such as the Racial and Ethnic Microaggressions Scale (REMS; Nadal, 2011) and the Colorblind Racial Attitudes Scale (Neville et al., 2000). An important implication to the interaction component is that these racist exchanges can be widely and conveniently available for other people to observe given the open nature of the Internet. Thus, the vicarious aspect of racism (i.e., observations of racism incidents via other people's interactions) may be a significant component of online racism and perhaps more substantial compared to offline occurrences. Existing measures such as the Index of Race-Related Stress (IRRS; Utsey, 1999) and the Racism and Life Experiences Scale (RaLES; Harell, 1997) have examined this domain of racism, although their focus is tailored to the offline interpersonal context. The IRRS and the RaLES are also among

the few measures that actually assess perceived group or systemic levels of racism. These overarching domains of racism may also constitute a significant experience of perceived online racism. This point is especially important as the Internet provides a medium where people may more readily and easily perceive various types of information highlighting the group and systemic impact of racism than in their offline activities. Overall, we anticipated that these domains may be associated with the ways people perceive racism on the Internet.

Of note, we were able to find only one measure relevant to assessing online racism. Tynes, Rose, and Williams (2010) developed the Online Victimization Scale (OVS) for cyberbullying experiences that adapted 4-item and 3-item subscales to assess individual and vicarious online racial discrimination. Although the OVS provides an adequate headway into studying online racism, there are major limitations. The OVS focuses on overt interpersonal aspects and misses potentially meaningful components such as online racism perceived through content or information consumption activities and presence of subtle racism. Further, the salience of the overt interpersonal aspect is also narrow due to the small item contents and may be limited in representing the breadth and depth of perceived online racism described in our review. This limitation is traced to the fact that the OVS adapts a cyberbullying framework related to intentional aggression among adolescents rather than a racism-specific conceptualization. In relation, we were confused regarding the intended audience of the measure and the definition of racism as majority of the participants were White. Although we agree that interpersonal aggression may be committed based on racial differences, our perspective on the definition of racism

incorporates the overarching injustice stemming from the racial hierarchy in society

(e.g., Harrell, 2000). The significance of this definition becomes even more important

when we start to consider the various types of online information available on the

group or systemic impact of racism for which the burden rests on the shoulders of the

racial/ethnic minority members. Thus, we were concerned with the scope of the OVS

as a racism measure. Lastly, the psychometric properties of the measure seem to be

weak (e.g., individual subscale reliability estimate of .66) as the authors did not

utilize best practices in scale development.

In addition to considering the aforementioned points, a major impetus for

developing the PORS was to create an ecologically valid measure of online racism

that reflects the unique online activities that shape people's perception. Foremost, the

mode of online racism is markedly different from offline racism. Online racism

occurs through unique activities in which people come together and interact in online

settings such as discussion forums, social network sites, news websites, chat rooms,

and blogs. Contrary to face-to-face interactions in offline settings, some of the major

forms of information communicated in online interactions include texts, photos, and

videos. Posting, accessing, and sharing texts, photos, and videos thus represent the

basis of online interactions. Sharing, in particular, has become a potent societal

influence due to the power of "trending" on social media (e.g., Twitter; Becker,

Naaman, Gravano, 2011), or the effectiveness in propagating controversial incidents

at an exponential rate by the collective sharing efforts among people. For example,

racial controversies such as police brutalities (Graham, 2015) have become

"trending" topics and gained widespread attention across the United States as a result

of this process. Similarly, coming across, accessing, and perceiving online information and contents racist in nature are also unique aspects unaccounted for in existing measures of racism. Furthermore, studies have documented that the content-driven nature of the internet allows perpetrators to conveniently devise creative contents to convey racist messages, such as coded languages (e.g., using acronyms for racial slurs) and ambiguous writings (e.g., poems with prejudicial connotations; Hughey & Daniels, 2013; Steinfeldt et al, 2010). As such, none of the available measures adequately assess the racial discriminations and prejudicial attitudes mediated through online-specific activities. Adapting existing measures may be beyond the scope of conducting simple modifications of the items or the contexts (e.g., workplace) that they assess. For example, measures such as the Perceived Ethnic Discrimination Questionnaire (Brondolo et al., 2005) or the General Ethnic Discrimination Scale (Landrine, Klonoff, Corral, Fernandez, & Roesch, 2006) contains items that are too specific to the offline activities such as experiences at stores (e.g., "Clerk or waiter ignored you") or face-to-face interactions (e.g., "Made you feel like an outsider because of appearance," "Made rude gestures"). To account for a nuanced understanding and assessment of online racism, a new measure may be the most conceptually and psychometrically appropriate in satisfying the unique aspects of online racism.

The Present Study

On the basis of our review, our aim was to develop and test the initial psychometric properties of the Perceived Online Racism Scale (PORS). In Study 1, we first developed the items for PORS and conducted an exploratory factor analysis

(EFA) to examine its initial factor structure. We then conducted a confirmatory factor analysis (CFA) to investigate the adequacy of the 30-item three-factor model of the PORS. Our CFA also included examination of competing models and the adequacy of PORS as a general measure across major racial/ethnic groups, gender, and age groups in our sample. Lastly, we examined the construct validity of PORS.

We also examined the construct validity of PORS. Regarding convergent validity, we hypothesized that PORS would correlate significantly and positively with an existing general measure of perceived racial discrimination that is mostly based on offline interpersonal experiences. Given that PORS shares the definition of racism with existing measures of racism, we anticipated this positive association. However, as online and offline elements of racism is assumed to have some distinctions, we predicted that the factors would correlate with an existing general racism measure at moderate to moderately high effect sizes (between .3 to .6). We hypothesized that the magnitude of the positive correlation with the Information (PORS-I) factor would be lower than the correlations with the other PORS factors given that the act of consuming information may be the most distinctive when compared to traditional focus on interpersonal discriminations in offline racism (Paradies, 2006). Accordingly, we hypothesized that the magnitude of the positive correlation with the Interaction-Personal (PORS-IP) factor would be the strongest among the PORS factors given the similar interpersonal focus in online and offline contexts. Subsequently, we hypothesized that the magnitude of positive correlation with the Vicarious (PORS-V) factor would fall between the other two factors.

For criterion related evidence, we hypothesized that the factors of PORS would significantly and positively correlate with psychological distress and perceived stress. Given that PORS measures an extension of perceived racism experiences on the Internet, we expected the factors to be significantly associated with negative mental health outcomes based on the literature on the mental health costs of offline racism (Lee & Ahn, 2011; Pieterse, Todd, Neville, & Carter, 2012). Similarly, we hypothesized that the factors would significantly and positively correlate with belief in an unjust world (BUW) on the basis that perceived offline racism predicted such outcome (Liang & borders, 2012). We were particularly interested with the outcome of BUW given that the mass influences of media and social media has been suggested as a powerful vehicle in shaping people's perceptions of society (Vallone, Ross, & Lepper, 1985). In testing the discriminant validity among the subscales, we anticipated that the significance and the magnitude of the relationships with BUW may differ based on the characteristics of the factors. Given that the PORS-V and PORS-I contained items describing observations of other racial/ethnic minorities being discriminated and access to information about racial injustice at the societal level, we hypothesized that these factors may be more significantly associated with BUW than the PORS-IP that is more focused on individual level interactions.

Finally, we tested the incremental validity of PORS as a measure of perceived online racism over and above the effects of a general measure of perceived racism. We hypothesized that the factors of PORS would explain additional unique variance in psychological distress, perceived stress, and BUW.

Chapter 2: Literature Review

Racism

> I look to a day when people will not be judged by the color of their skin, but
>
> by the content of their character. –Martin Luther King Jr.

Ever since these words highlighted the importance of solving racial problems

in the United States (U.S.), significant strides have been made in promoting greater

racial equality and respect for racial/ethnic differences. Nonetheless, continued social

and racial justice efforts against racism remain an essential collective endeavor

considering the rapid growth of the U.S. as a multiracial/ethnic nation (D'Souza,

1995). The 2008 U.S. Census Bureau report indicated that about 35 million

Americans identified as Blacks, about 10 million as Asians, and another 35 million as

Latino/a. Together, the total reflects nearly one third of the U.S. population. These

numbers have been projected to increase through 2050, as approximately 15% of the

Americans will be Black, 8% Asian, and 25% will be Latino/a (Passel & Cohn,

2008). Given the salience of racial/ethnic diversification in the U.S., issues stemming

from racial/ethnic differences and relations have been prevalent and racism has been

of much focus in social sciences.

Scholars have considered various definitions in studying racism (e.g., Bulhan,

1985; Jones, 1972; Krieger, 2000; Rothenberg, 1988) stemming from the unsettling

debate on the topic (Farley, 1988). Most definitions, however, revolve around a

similar theme describing the acts of denigration of individuals based on their

ethnic/racial group affiliation. Clark, Anderson, Clark and Williams (1999) gave a general definition of racism as "beliefs, attitudes, institutional arrangements and acts that tend to denigrate individuals or groups because of phenotypic characteristics or ethnic group affiliation" (p. 805). Research on racism extends this definition by incorporating racial hierarchy and power dynamics present in multiracial/ethnic societies based on the historical context of racism. Harrell (2000) outlines the centrality of power in her definition of racism as:

> A system of dominance, power, and privilege based on racial group designations: rooted in the historical oppression of a group defined or perceived by dominant-group members as inferior, deviant, or undesirable; and occurring in circumstances where members of the dominant group create or accept their societal privilege by maintain structures, ideology, values, and behavior that have the intent or effect of leaving nondominant-group members relatively excluded from power, esteem, status, and/or equal access to societal resources. (p. 43).

Thus, perpetuation of racism has often or almost always been the subject of maltreatment, unjust burden, discrimination, and hindrance towards the lives of racial/ethnic minority groups.

For racial/ethnic minority groups residing in countries espousing diversity and multiculturalism (e.g., U.S., Canada), racism presides as a social and political reality (Bell, 1992; 2005; McConahay, 1986; Takaki, 1993). Cassidy, O'Conner, Howe, and Warden (2004) highlighted that racial/ethnic minority groups may likely grapple with persistent experiences of prejudice and discrimination every day. These experiences

span both attitudinal and behavioral ways in which racism can be perpetuated (Dovido & Gaertner, 1986). Racial/ethnic discrimination (e.g., unfair treatment due to racial/ethnic affiliation; Tatum, 1995) is a major example of racism-related behavioral practice while racial/ethnic prejudice (e.g., negative judgments and attitudes toward certain racial/ethnic groups; Quillian, 1995) represents racist attitudes. Some of the other major processes that reflect racism include: social exclusion (Hagendoorn, 1993), racial/ethnic stereotyping (oversimplified and distorted image or label of racial/ethnic traits; Steele & Aronson, 1995), stigmatization (mark of disgrace or shame associated with racial/ethnic stereotypes or traits; Link & Phelan, 2001), and microaggression (daily commonplace derogatory racial slights; Sue, 2010). These micro level phenomena can be distinguished from racism in that racism provides an overarching context of persistent injustice and inequality within which these activities are the vehicles of perpetuation and maintenance of racism (Lott & Maluso, 1995).

Domains of Racism

Jones (1972) suggests three broad domains in categorizing the many forms and manifestations of racism: individual, institutional, and cultural. The individual domain explains the acts of racism or racism-related human behaviors that can stem from individual beliefs in the racial hierarchy in which racial/ethnic minority groups are designated as inferior. These beliefs can also manifest at the institutional level and reflected through systemic oppression and societal exploitation of those deemed racially/ethnically inferior. The cultural domain encompasses these forms as a concept of inherent ideology of cultural superiority that seeks to judge other cultures as inferior thereby maintaining the status quo of the dominant culture. Together, these

categories epitomize the insidious and enduring nature of racism deeply rooted hierarchically in society.

In further elucidating a more tangible mechanism of how the aforementioned forms of racism can manifest, Harrell (2000) outlines four general domains within which people can be exposed to racism. First, racism can manifest at the interpersonal level, which is further divided into direct and vicarious domains. Direct refers to racism experienced through interactions with other people. On the other hand, vicarious is associated with observation and report of incidents of racism via other people's actions, nonverbal behaviors, and verbal statements. Second, racism can also occur within a collective domain that highlights the systemic impact on large groups of people. These experiences can be perceived through data on racial disparities in various societal systems such as access to education, unemployment rates, and racial/ethnic bias in the criminal justice system. Third, the cultural-symbolic domain exemplifies racism that persists through systematic characterization and impressions of the nondominant racial/ethnic groups through various mass communication outlets such as entertainment media and symbolic legacies such as art and literature. Lastly, the socio-political domain ascribes influences of racism on political systems and legislative processes that work to maintain the status quo of the dominant group. Various political policies and practices can be implemented to consistently sideline and marginalize racial/ethnic minority groups. In sum, exposure to racism can occur across the four contexts and adversely affect the lives of racial/ethnic minority groups.

Both frameworks (Jones, 1972; Harrell, 2000) reviewed here represent the extent to which racism has been generally and broadly conceptualized across interpersonal and larger societal contexts in the literature. Whereas the interpersonal domain pertains to the relational aspects of human beings, various macro level domains span the ways that racism can be present in a larger societal context. While these domains can be differentiated based on context (e.g., political systems, media), together, their collective influence results in the systemic oppression of racial/ethnic minority populations. For example, in Harrell (2000)'s framework, both the cultural-symbolic and socio-political domains are ways in which racism can impact various racial/ethnic groups and serve as examples for the collective domain. The cultural-symbolic domain, in particular, can perpetuate stereotypes and underrepresentation of racial/ethnic minority groups by maintaining the systemic privileges of the majority groups' cultural and social norms over those of the racial/ethnic minority groups. Thus, the term systemic or institutional racism (e.g., Feagin, 2013; Phillips, 2011) has been used frequently to describe and study the racial/ethnic bias and inequality present at the societal level.

Perceived Racism

In recent decades, perceived racism has received the most empirical attention in studying the impact of racism. Adapting the framework of stress and coping model (Lazarus, 2000; Lazarus & Folkman, 1991; Lazarus & Folkman, 1984), scholars have studied racism as a stressor through the self-appraisal strategy that has been significant in demonstrating people's exposure to stress. Thus, perceived racism, or self-reported racism, has been conceptualized as the subjective experience of

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prejudice or discrimination (Clark et al., 1999). Given the subjectivity, the perception may include not only identification of explicit forms of racism but also other subtler forms of racism such as belief systems and symbolic representations depending on the experience. Exposure across individual and systemic racism has been assessed in studying perceived racism (Brondolo, Rieppi, Kelly, & Gerin, 2003); for instance, experiences that reflect interpersonal incidents or perceptions of institutional biases collective in nature such as differential access to the goods, services, and opportunities in society for groups designated as racial/ethnic inferior (Phillips, 2011). In general, the concept refers to the perception of being targeted for negative treatment because of one's race/ethnicity.

The assessment of perceived racism through subjective self-report methods has been the most common approach to studying people's exposure to racism (Brondolo, Gallo, & Myers, 2009; Landrine, Klonoff, Corral, Fernandez, & Roesch, 2006; Williams 1995; Williams & Mohammed 2009). Beyond general experiences of racism, researchers have made immense strides in developing population-specific measures (e.g., racism faced by Black individuals) and those that pertain to the nuanced behavioral and attitudinal practices (e.g., discrimination, stereotyping, prejudice) of racism (Atkins, 2014; Bastos, Celeste, Faerstein, & Barros, 2010; Krieger, 1999; Paradies, 2006; Utsey, 1998). A review by Atkins (2014) found that 46 measures each assessing some form of perceived racism had been developed in the past three decades, with a sharp increase in the number of empirical interest overtime. Some of the more widely used and psychometrically validated measures include the Everyday Discrimination Scale (EDS; Forman, Williams, & Jackson, 1997; Essed,

1991), Experience of Discrimination (Krieger, Smith, Naishadham, Hartman, Barbeau, 2005), Schedule of Racist Events (Landrine & Klonoff, 1996), Racism and Life Experiences Scale (Harrell, 1997), the Perceived Racism Scale (McNeilly et al., 1995), and the Perceived Ethnic Discrimination Questionnaire (PEDQ; Brondolo et al., 2005). Most were developed from the perspective of African Americans although more recent measures have tapped into the experiences of other racial/ethnic groups (e.g., Subtle and Blatant Racism Scale for Asian American College Students; Yoo, Steger, & Lee, 2010) and experiences shared across multiple racial/ethnic minority groups (e.g., Perceived Ethnic Discrimination Questionnaire; Brondolo et al., 2005). Other features and characteristics of the measures have varied across the parameters of length of instruments (number of items), administration method (self or interviewer administered), sample size, and the time frame (e.g., experiences of racism in the past 6 months, past year) of recall (Paradies, 2006). Collectively, these measures have been instrumental in the ongoing investigation evaluating racism as a predictor for negative mental and physical health as well as indirect influences on various social and economic deficits (Atkins, 2014; Bastos et al., 2010; Brondolo et al., 2003; 2009; Lewis, Cogburn, & Williams, 2015; Paradies, 2006; Williams & Mohammed, 2009). The below sections review some of the major costs of racism identified through research on perceived racism.

Research on Perceived Racism and Physical Health

The past decade has seen substantial research investigating the pathways between experiences of racism and the impact on physical health (Brondolo et al., 2003; 2009; Lewis et al., 2015; Paradies, 2006). Growing literature and

epidemiological attention has documented compelling evidence outlining the detrimental effects of racism on physical health. Using self-report measures and objective assessment of psychophysiological parameters, studies have found a positive relationship between racism and cortisol levels (e.g., stress), blood pressure, and heart rate responses (Brondolo et al., 2008; Clark 2000; Dolezsar, McGrath, Herzig, & Miller, 2014; Fang & Myers 2001; Guyll, Matthew, & Bromberger, 2001; Harrell, Hall, & Taliaferro, 2003; McNeilly et al. 1995; Richman, Kohn-Wood, & Williams, 2007; Tull, Sheu, Butler, & Cornelius, 2005). These elevations have been linked to the development of stress-related disorders including hypertension and other cardiovascular disease (Matthew, Salomon, Kenyon, & Zhou, 2005; Treiber et al., 2003).

Such outcomes have been deemed especially concerning given that some of these conditions operate as silent diseases (i.e., disease or disorder that produces no clinically obvious signs or symptoms) such as carotid intima media thickness (Troxel, Matthews, Bromberger, & Sutton-Tyrrell, 2003), coronary artery calcification (Lewis et al., 2006), visceral fat (Lewis, Kravitz, Janssen, & Powell, 2011), and inflammation (Lewis, Aiello, Leurgans, Kelly, & Barnes, 2010). Further, studies have also documented biological indicators of poor health and premature aging through increased allostatic load (e.g., physiological consequences due to chronic stress; Brody et al., 2014), shorter telomere lengths of the chromosomes (e.g., increased risk of cancer; Chae et al., 2014), increased oxidative stress (e.g., influx of free harmful free radicals; Szanton et al., 2012), and dysregulations in cortisol level (Zeiders, Hoyt, & Adams, 2014).

Beyond direct physical health risks, racism has also been considered to indirectly influence other risky health behaviors (Brondolo et al., 2009). Studies have found that perceived racism has been consistently linked to smoking and substance abuse (Borrell et al., 2007; Choi, Harachi, Gillmore, & Catalano, 2006; Landrine & Klonoff, 2000), less use of preventive services such as cholesterol testing or mammography (Hausmann, Jeong, Bost, & Ibrahim, 2008; Trivedi & Ayanian, 2006), and noncompliant behaviors to prescribed medical procedures (Casagrande, Gary, LaVeist, Gaskin, & Cooper, 2007; Thrasher, Earp, Golin, & Zimmer, 2008). At the institutional level, scholars have also noted the effects of racial disparities in health care as precursor to indirect physical health risk for racial/ethnic minority groups (Smedley, Stith, & Nelson, 2003). Racism has been identified as an influential factor in the patient-provider relationship (Benkert & Peters, 2005; Peters, 2004). For example, health care providers held differential attitude towards some racial/ethnic groups (e.g., African Americans) with the relationship being moderated by level of systemic racism (Greer, Brondolo, & Brown, 2014). Mistrust in the health care system has also been documented among racial/ethnic minority groups (Benkert, Peters, Clark, & Keves-Foster, 2006; Benkert, Hollie, Nordstrom, Wickson, & Bins-Emerick, 2009). In sum, the deleterious impact of racism on physical health appears to be multidimensional and one that requires consideration of multiple points of intervention and prevention.

Research on Perceived Racism and Mental Health

Along with physical health outcomes, mental health is another domain consistently and significantly impacted by racism. In fact, a review by Paradies

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(2006), suggested that experiences of racism may have more detrimental consequences on mental health than physical health. A more recent, updated meta-analysis by Pascoe and Richman (2009) however concluded that the effects were on par in general. Regardless, extensive literature has characterized the harmful influences in various dimensions of mental health and psychological well-being (Paradies 2006, Schmitt, Branscombe, Postmes, & Garcia, 2014, Williams & Mohammed 2009).

As a potent stressor, experiences of racism has been linked with emotional consequences including painful feelings of anger, nervousness, sadness, and hopelessness (Brondolo et al., 2009). Not surprisingly, scores of studies have documented the positive associations between perceived racism and psychological distress (e.g., Kwate, Valdimarsdottir, Guevarra, & Bovbjerg, 2003; Miller, Yang, Farrell, & Lin, (2011); Sellers, Caldwell, Schmeelk-Cone, & Zinnerman, 2003) and mental disorders such as depression (e.g., Finch, Kolody, & Vega, 2000; Liu & Lau, 2013; Noh & Kaspar, 2003) and anxiety (e.g., Utsey & Payne, 2000; Bowen-Reid & Harrell, 2002). Other DSM-IV psychiatric disorders such as premenstrual dysphoric disorder (Pilver, Kasl, Desai, & Levy, 2011), psychosis (Oh, Yang, Anglin, & DeVylder, 2014), eating disorders (Durso, Latner, & Hayashi, 2012), posttruamtic stress disorder (Seng, Lopez, Sperlich, Hamama, & Meldrum, 2012; Ellis, MacDonald, Lincoln, & Cabral, 2008) has also been linked to racism. Adverse effects have also been documented in other general areas of mental health indicators such as life satisfaction (e.g., Utsey, Payne, Jackson, & Jones, 2002; Valentine, Silver, & Twigg, 1999), self-esteem (e.g., Barry & Grillo, 2003; Harris-Britt, Valrie, Kurtz-

Costes, & Rowley, 2007), and quality of life (Utsey et al., 2002). Most studies have been cross-sectional in nature but one longitudinal study (Brown et al., 2000) found that higher levels of depression at one year follow-up was preceded by greater reports of discrimination experiences. As with physical health, evidences point to overwhelmingly negative effects of racism on mental health in various domains of psychological functioning.

Indirect Costs of Racism

In addition to the direct influences on physical and mental health outcomes, scholars have also posited that racism can indirectly influence the lives of racial/ethnic minority groups (Williams & Mohammed, Leavell, & Collins, 2010). Most notably, institutional or systemic forms of racism may contribute to the socioeconomic disadvantages (e.g., poverty) sustained by racial/ethnic minority groups (Karlsen & Nazroo, 2002; Shavers & Shavers, 2006). For example, many minority groups such as African Americans and Latino/as with marked socioeconomic disadvantages may continue to be stripped of any socioeconomic gain or upward movement in society due to the differential access to the goods, services, and opportunities in society for groups designated as racial/ethnic inferior (Phillips, 2011). Residential segregation that results in concentration of poverty for certain racial/ethnic minority groups (Williams & Collins 2001; Acevedo-Garcia et al. 2003) is a prime example of an unending economic hardship that can also give rise to increased exposure to environmental toxins, poor quality housing, lack of educational resources, and criminal victimization (Schulz, Williams, Israel, & Lempert, 2002; Williams & Mohammed, 2009). For those higher up in the socioeconomic class, these

institutional barriers may appear as hardships in economic or career (e.g., glass ceilings) advancements (Harrell, 2000) as well as racial disparities in education (Farkas, 2003; Mickelson, 2003).

It should be noted that racism presents as a collective deficit to the multiracial/ethnic societies for both minority and majority racial/ethnic groups. Most studies thus far (and reviewed in this manuscript) have explicated the consequences of racism for racial/ethnic minority groups. Spanierman & Heppner (2004) developed the Psychosocial Costs of Racism to Whites Scale to examine the various self-report experiences of deficits for White members of the society. The measure builds on the principles of Kivel (1996) who outlined the various domains of costs to White individuals: loss of culture, distorted picture of history, loss of relationships, distorted sense of danger and safety, lower self-esteem, and spiritual depletion. Goodman (2001) also discussed the deficits in psychological (i.e., issues in mental health and authentic sense of self), social (i.e., loss of relationships), moral and spiritual (i.e., loss of moral and spiritual integrity), intellectual (i.e., loss of developing full range of knowledge), and material and physical domains (i.e., loss of safety, resources, and quality of life). While Whites may be exempt from the everyday dealings with racism that racial/ethnic minorities may face, research suggests that racism is a detriment to everyone in society and that it would be difficult to overcome without the collective efforts of the society (Goodman, 2001; Kivel, 2002).

Ongoing Examination of Perceived Racism

Blatant and subtle racism

In the past few decades, social scientists have posited that racism in the U.S. has shifted from direct, overt activities to more covert, implicit manifestations (DeVos & Banaji, 2005; Dovidio, Gaertner, Kawakami, & Hodson, 2002). Contrary to blatant, outright forms of racism that are easily identifiable from the victim's perspective, implicit racism refers to unconscious racial/ethnic biases, expectations, or tendencies that may affect a person's behaviors and attitudes towards race-related experiences without awareness of their prejudicial implications (Dovidio, Kawakami, Smoak, & Gaertner, 2008). In fact, a recent meta-analysis of helping attitudes towards White and Black individuals found that implicit racism persists even though overall explicit racism appears to have diminished (Saucier, Miller, & Doucet, 2005). Modern definitions of racism such as aversive racism (i.e., negative evaluations of racial/ethnic minorities by means of persistent avoidance of interaction with other racial/ethnic groups; Gaertner & Dovidio, 1986), and racial microaggressions (i.e., brief and commonplace daily verbal, behavioral, or environmental indignities that communicate derogatory racial insults often without awarenenss of the perpetrator; Sue et al., 2007) all aim to capture some aspect of unintentional or intentional racism that are less socially visible or transmitted through indirect ways (e.g., purposefully making people of color wait longer at a restaurant).

Racial microaggression

Of note, racial microaggression (Pierce, Carew, Pierce-Gonzalez, & Willis, 1978) is a one aspect of subtle racism that has gained significant empirical attention. In the field psychology, Sue and colleagues (2007) have defined racial microaggressions in the form of microinsults, microinvalidations, and microassaults.

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Microassaults refer to the explicit and intentional discrimination such as use of racial slurs. Sue and colleagues (2007) state "microassaults are explicit racial derogations characterized primarily by a violent verbal or nonverbal attack meant to hurt the intended victim through name-calling, avoidant behavior or purposeful discriminatory actions" (p. 278). Microinsults refer to the verbal and nonverbal behaviors that convey discriminatory and denigrating messages to people of color. Sue and colleagues (2007) defined microinsults as "behaviors/verbal remarks or comments that convey rudeness, insensitivity and demean a persons' racial heritage or identity" (p. 278). Finally, microinvalidations represent the often unconscious verbal statements that lead to negative messages to people of color even though these messages may have been said with good intentions. Sue and colleagues (2007) defined microinvalidations as, "verbal comments or behaviors that exclude, negate or nullify the psychological thoughts, feeling or experiential reality of a person of color" (p. 278). It is crucial to scrutinize RM as they have shown to inflict greater harm than overt racism as chronic stressors that deny racial/ethnic realities (Sue, 2010). It is crucial to scrutinize RM as they have shown to inflict greater harm than overt racism as chronic stressors that deny racial/ethnic realities (Sue, 2010).

Future directions in racism research

Despite significant advances in understanding the influences of perceived racism on various domains of social, psychological, and physical outcomes, major issues and topics still remain. A recent review by Lewis and colleagues (2015) outlines handful of gaps in current knowledge that requires further attention on studying perceived racism or self-report accounts. First, research on perceived racism,

mostly conducted through the use of self-report assessments, has to explore ways to address the reliance on participants' observations and report that may be subject to biases such as self-selection bias (i.e., increased motivation and willingness to report racism experiences; Schmit, 1997), minimization bias (reporting less racism experiences than actual), and vigilance bias (reporting more than actually exists). Second, personality characteristics (e.g., neuroticism, extraversion) have received little attention on its potential to influence how racism may be perceived, reported, and coped with. Most studies have focused on traits related to hostility and anger (Beatty et al., 2011; Brondolo et al., 2011; Lewis et al., 2013) and only one study has looked at interaction between racism and personality traits (Barnes et al., 2012). Third, major empirical discrepancies exist in whether "race" has to be primed in self-report assessments of racial discrimination or better captured as part of the overall discrimination experience (Krieger, 2012). Fourth, scarce knowledge exists on racism experiences perceived by those with intersecting identities of multiple marginalized statuses (e.g., race, gender, sexual orientation) despite its common nature among racial/ethnic minority individuals. Fifth, a more comprehensive assessment of racism experiences may be called for to study the course of its impact across the lifespan from developmental periods to older age in a longitudinal manner. Lastly, more nuanced variables of interest to studying perceived racism such as stress and mental disorder outcomes relevant to racial experiences needs to be teased apart from general distress.

Online racism as an emerging area

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Notwithstanding these suggestions, a glaring limitation of the current body of literature is that research has been limited to assessing reports of offline racism experiences in traditional community-based or laboratory settings that does not necessarily reflect the changing social trends in today's society. Exposure to racism should also be conceptualized parallel to the methods of social interactions and communications that evolve with the advances in society (e.g., technology). Thus, the current study based on this review is devoted to investigating one emerging area in the realm of online experiences. Little to no attention has been paid to the experiences of racism that occur in the online context in today's digital age (Daniels, 2013; Hughey & Daniels, 2013; Lewis et al., 2015; Tynes, 2007). Research that attends to the unique aspects of online racism is needed in order to more fully understand the current general trend of how racism operates in present society. Factors such as increased anonymity may permit people to express explicit and/or intentional racism more frequently in the online environment. Thus, we next review the role of anonymity in conceptualizing online racism.

Persistence of Racism on the Internet

Effects of anonymity

Many have contended that explicit racist speeches have become a mainstay in the online space, a "safe haven" (Breckheimer, 2001; Van Blarcum, 2005) free from having to think about being politically correct and not appearing prejudiced compared to face-to-face interactions (Daniels, 2013; Picca & Feagin, 2007; Gaertner & Dovidio, 1986). Considerable anonymity and ineffective content moderation enables users to freely disclose their racist ideologies for the public to witness (Hughey &

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Daniels, 2013; Tynes, Reynolds, & Greefield, 2004) and feel little accountability for their harmful behaviors (Hardaker, 2010; Jenkins, 2002; Suler, 2004). As one of the earliest and most discussed concepts in studying online interactions (Boczkowski 1999; Friedman, Khan Jr., & Howe, 2000), anonymity has been suggested as a major cause of such phenomena, providing a sense of identity protection or social distance from others when interacting in online environments (McKenna & Bargh, 2000; Joinson, 2007; Santana, 2014; Suler, 2004).

Online anonymity, defined by Lapidot-Lefler & Barak (2012), refers to online unindentifiability, or "the realistic condition of being unknown to online partners in terms of identifying personal details, such as gender, weight, age, occupation, ethnic origin, residential location, and so on" (p.435). Based on the wide range of information needed to identify a person online, online users may still remain relatively anonymous even when using their real names or revealing parts of their identity (Bargh, Mckenna, & Fitzsimons, 2002; Chester & Bretherton, 2007; Giles, 2006; Valkenburg, Schouten, & Peter, 2005). The relative robustness of online anonymity has been considered a major determinant of the online disinhibition effect that may enable people to communicate hate messages and convey aggression with feeling little risk of being held responsible for their actions or facing societal ramifications (Hardaker, 2010; Siegel, Dubrovsky, Kiesler, & McGuire, 1986; Sproull & Kiesler, 1986; Suler, 2004). Scores of studies have documented other socially disinhibited behaviors including, but not limited to, cheating in online games (Chen & Wu, 2013), sexist attitudes toward women (Fox & Tang, 2014), and online

verbal aggression (e.g., "flaming" Appel, Stiglbauer, Batinic, & Holtz, 2014; Bomberger, 2004; Walther, 2009).

Online disinhibition

Theoretically, online disinhibition effect builds on the established literature suggesting that increased anonymity can foster disinhibited or radically different human behaviors that would not readily occur in non-anonymous conditions (Bargh & McKenna, 2004; Bargh et al., 2002; Joinson, 1998, 2001, 2007; Kiesler, 1986; Kiesler, Siegel, & McGuire, 1984; Siegel et al., 1986; Sproull & Kiesler, 1991; Zimbardo, 1969). Online disinhibition has been classified into toxic disinhibition, conveying rude, harsh, hateful, and threatening messages, and benign disinhibition, sharing personal information out of kindness and generosity (Suler, 2004). Online racism may be an outcome of the former category.

Suler (2004) extended the disinhibition phenomena to online interactions and outlined various reasons why people may be disinhibited, or act radically different when they go online beyond just simple anonymity (i.e., you don't know me). These include the ability to manipulate your online presentations, belief that rules do not apply, the ease of abandoning online interactions at any time, and taking online interactions less seriously. The multitude of precursors to online anonymity suggest that disinhibition may still happen even when some aspects of your identities (e.g., real names) are revealed. For example, people who may be limited to using real names in online interactions may still feel relatively disconnected from social norms or inhibitions and elect to post racist comments if they believe that rules do not readily apply to online interactions compared to offline contexts. A qualitative study

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conducted by Santana (2014) found that on the topic of immigration in online forums, anonymous commenters were twice as likely to register uncivil comments (65%) than non-anonymous commenters (35%). While the disinhibition effect seemed salient in the anonymous condition as hypothesized, it should be noted that 35% of the people still posted uncivil comments even after using their real names. Additional studies have also found persistence of these uncivil and hateful messages (Harrison et al., 2010; Meyer, 2004; Moore, Nakano, Enomoto, & Suda, 2012; Reinig & Mejias, 2004; Tateo, 2005) despite many platforms switching to using real names or personal social media accounts in order to make comments to increase accountability.

Deindividuation

In conjunction to disinhibition, effects of online anonymity can also foster some conditions that may yield greater likelihood for people to be hostile and aggressive towards the topic of racial issues and racial differences. The process is based on the theory of deindividuation (Festinger, Pepitone, & Newcomb, 1952), which generally has been established as people's loss of personal self-awareness and individuality in situations, such as group immersions, where one's identity becomes negligible. One recent proponent of the theory, the *Social Identity Model of Deindividuation Effect* (SIDE; Reicher, Spears, & Postmes, 1995), incorporated the social identity theory (Tajfel & Turner, 1979; Turner & Oakes, 1986) to postulate how people may present their identities and group memberships online amidst the anonymity and lack of social and physical cues. This extension of the deindividuation has been applied readily to study interactions in online settings.

When users become deindividuated (i.e., loss of individuality), the SIDE

model posits that Internet users attempt to actively recreate their social identity

(Turner & Oakes, 1986) by relying on their group norms such as race/ethnicity norms

when interacting with others (Postmes, Spears, Sakhel, & De Groot, 2001). Naturally,

the theory further posits that people exhibit heightened group norms as result of the

reliance on these norms. Hence, individuals may likely present themselves or judge

others in ways that they believe fits with their understanding of the racial norms or

stereotypes when navigating an anonymous online landscape lacking social and

physical cues. The theory has been useful in describing how people portray and

negotiate their racial/ethnic identities through online interactions (Lee, 2004;

Nakamura & Chow-White, 2012). However, this process has been found to evoke

greater intergroup differences due to display of heightened group norms and reliance

on stereotypes (Bomberger, 2004; Douglas & McGarty, 2001; Postmes, Spears, &

Lea, 2002) in online interactions. Both of these conditions may be influential in the

possibility of increased hostility and aggression on the topic of racial issues and racial

differences especially when coupled with the online disinhibition effect (e.g.,

lessening of social restrictions and inhibitions). Smith and Postmes (2009) for

instance found that the severity of discrimination exercised increased for groups who

endorsed higher prejudicial norms. Applying the SIDE model, people who are high

on prejudicial norms may be likely to display even greater levels of prejudicial

behaviors or attitudes online. As well, stereotyping has also been suggested as a

strong predictor for prejudicial attitudes when used in racial/ethnic context (Correll,

Park, Judd, & Wittenbrink, 2002; Dovidio, Kawakami, & Gaertner, 2002). Thus, one

might imagine that racism may be perpetuated more explicitly and commonly on the Internet due to the augmented racial/ethnic divide and reliance on racial/ethnic stereotyping, especially for those who are already high on prejudicial norms.

Deindividuation also has group level implications in how individual racist representations can come together and quickly escalate into a collective entity in online communities. Lee (2007) examined participants who were assigned to debate on a dilemmatic issue in deindividuated or individuated conditions and found that deindividuated people showed higher group identification and opinion polarization after the debate. Greater identification and consensus among the group members through positive evaluation of each other also suggested higher in-group favoritism. In other words, the author suggested that deindividuation may drive group polarization, in which a group of like-minded people may come together to confirm their opinions and form solidarity after having some sort of discussion or exchange. The end result is that people may become increasingly biased and extreme towards their opinions backed by the group mentality.

As interpreted further by Sunstein (2002), online group polarization may influence people to act out of character or behave radically different toward others who do not share the same beliefs or opinions. This process of group polarization on the Internet can certainly have benefits (Christopherson, 2007), such as greater solidarity for prosocial movements for equal human rights. However, it can also yield harmful implications including the polarizations of attitudes or opinions that perpetuate racism online. An extreme example is the influx of publically available White supremacist websites throughout the past decade (Daniels, 2009) highlighting

the group polarizations of those who outright deny racial equality. As more and more people come in contact with others who may share the prejudicial attitudes and norms, they may feel a strengthening of these principles due to group solidarity. From here, people may be more willing to chime in with racist comments in online interactions more so than in offline face-to-face interactions.

In summary, the outlined theoretical effects of online anonymity help explain the view that racism may be expressed more commonly and explicitly. Accordingly, for racial/ethnic minority individuals, racism may be perceived or felt more explicitly and commonly when they go online contrary to the notion that racism may be harder to identify and appear to be ambiguous in offline settings. Such distinction reiterates the importance of developing an assessment tool to capture the nuanced online experiences through which racism may be perceived in today's digital age and society.

Chapter 3: Method

Scale Development

Guided by best practices in measure development (DeVellis, 2003; Worthington & Whittaker, 2006), several steps were taken to generate items for PORS. First, the first author (Asian American male doctoral student) and the second author (Asian American male faculty member) reviewed relevant literature in racism, psychology, and interdisciplinary studies (e.g., social sciences and technology, computer-mediated communication) in identifying common themes of experiences relevant to online racism. Second, we also surveyed various social platforms (e.g., social media, online forums) and available online contents (e.g., online blogs, online news articles) to further identify online activities and contents relevant to racism. Third, we conducted an anonymous brief online qualitative survey advertised through social network sites (e.g., Facebook), listserv, and snowball sampling. The survey took 5 minutes to complete and asked eligible participants (i.e., self-identify as racial/ethnic minority and at least 18 years old) to provide qualitative responses to open-ended questions asking about how they experienced racism on the Internet. A total of 132 participants completed the survey. We conducted a content analysis on the qualitative responses to generate themes to further guide our item development. The following themes emerged which guided our item development: interpersonal communication of racist messages via online-mediated means (e.g., sending posts, videos, photos, and sharing content), blatant and subtle racist messages in online interactions, encounters with online multimedia contents (e.g., photos, videos) racist

in nature, observations of other racial/ethnic minority members being harassed in online interactions, online groups propagandizing racist ideologies (e.g., White supremacy), information on systemic racial/ethnic inequality (e.g., healthcare practices), "trending" content depicting offline or online racial violence, and the rampant and explicit nature of online racism compared to offline interpersonal racism. Broadly, the themes characterized racism experiences pertaining to (1) online interactions represented by both interpersonal and vicarious contexts, and (2) consumption of online information including information on systemic issues of racism.

Throughout the item development process, we focused on representing the major modes of online communication (e.g., text posts, pictures, videos) and common activities in various online social platforms (e.g., social media, online discussion forums) in order to generate items that are salient and generalizable to people's online experiences over time and context. Hence, we largely avoided wording or creating items that may only pertain to specific social platforms such as Twitter or Facebook. We were cautious about platform-dependent items due to the rapidly evolving nature of the online social landscape. These items may run the risk of being obsolete once that particular social platform loses popularity and use. Thus, we developed items that capture the general essence of similar and common activities across multiple online social and content platforms. For example, items represented general interactions in social network groups such as exposure to Internet memes (e.g., catchphrase or online media intended for rapid sharing) and exposure to "trending" content (i.e., topics that become popularized or controversial via collective sharing efforts on the Internet;

Becker, Naaman, Gravano, 2011) without being too specific to the context of certain online social and content platforms.

Additionally, we reviewed various offline racism measures in guiding the subtle and overt nature of our items. In particular, items representing subtle experiences of online racism were mostly guided by the available themes of racial microaggressions (which included a theme for colorblindness) explicated in current theoretical framework (Sue et al., 2007) and racial microaggression measures such as the REMS (Nadal, 2011) and the Inventory of Microaggressions Against Black Individuals (Mercer, Zeigler-Hill, 2011). We also reviewed various scales designed to assess the group and institutional aspects of perceived racism such as the Group Impact (GRP) subscale from the Racism and Life Experiences Scale (Harrell, 1997) in order to guide item generation regarding access to online information on racist ideologies and

systemic aspects of racial injustice.

The aforementioned steps resulted in an initial pool of 134 items. These items were subject to several rounds of internal focus groups with the authors' research lab members comprised of seven doctoral students experienced in studying racism and measure development and one faculty member who specialize in the study of racial/ethnic constructs and measurement. Two other program faculty members with expertise in racism, stigma, and measurement development also provided initial feedback. Items were revised based on the feedback regarding content validity, conciseness, grammar, reading level, and redundancy. Based on the revision, 14 items were removed while balancing inclusivity and comprehensiveness at this point. The

remaining 120 items were then sent to five expert reviewers specializing in the study of racism, measurement, and online studies. Based on expert feedback regarding content validity and item clarity, 16 items were further removed. The final item pool consisted of 104 items. An online reading level calculator indicated 6th grade level for the items. Overall, 76 items characterized racism experiences in online interactions and 28 items represented the ways people consume racially/ethnically offensive online contents. 52 of the 76 items for the online interaction experiences represented items based on racial microaggression. All the items started with the following stem: "In the past six months, I have…." The response format for PORS was a 5-point Likert-type scale ranging from 1 (*Never*) to 5 (*All the time*). The prompt for the measure read: "We are interested in your personal experiences of racism in online settings as you interact with others and surf the Internet. As you answer the questions below, please think about your online experiences in the past 6 months."

Procedure

Participants were invited to participate in an online survey hosted by Qualtrics advertised through multiple online communication platforms including listservs, discussion forums, social network sites (e.g., Facebook), and advertising outlets (e.g., Reddit). The inclusion criteria for the study were: (1) 18 years or older, and (2) self-identify as a racial/ethnic minority (e.g., African American/Black, Asian American/Asian, Hispanic American/Latino/a etc.). Participants were compensated either 50 cents via Amazon's Mechanical Turk (MTurk) or entered into a raffle for a chance to win an Amazon gift card. Mturk is a crowdsourcing service offered by Amazon through which researchers can pay users to complete tasks such as online

surveys. Studies have shown that MTurk allows researchers to collect data efficiently

from a diverse sample of population with comparable data reliability and quality

compared to traditional methods (Buhrmester, Kwang, Gosling, 2011; Mason & Suri,

2012). Given that people outside of the U.S. also have access to MTurk surveys, we

screened participants by their geo IP address to make sure that survey takers were

U.S. residents. The survey took 15 to 20 minutes to complete and consisted of the

item pool for PORS, construct validity measures, and response validity items (e.g.,

"Please choose always"). Participants were also provided with ample open-ended

space to voice any of their concerns, comments, and questions about the survey items.

Participants

The average age of the participants was 27.42 (*SD* = 9.77) and ranged from 18

to 67. About 33% (306) of the Participants self-identified themselves as

Black/African American, 20% (185) as East Asian/East Asian American, 17% (163)

as Hispanic/Latino/a American, 13% (125) as Southeast Asian/Southeast Asian

American, 11% (108) as Multiracial, 2.5% (26) Native American Indian/Alaskan

Native, 2% (19) Middle Eastern, 1% (9) Native Hawaiian, and .5% (5) other. About

59% (555) of the participants were women, 39% (372) men, and 2% (19) transgender.

Majority of the sample were heterosexual (85%; 803), followed by 6% (55) bisexual,

3% (23) gay, 2% (16) lesbian, 2% (15) uncertain, 1% (11) asexual, and 1% (9) queer.

Approximately 26% (249) identified as non-native English speaker and 36% (338) as

a first-generation college student. Regarding education level, about 41% (388)

indicated having received college education, 36% (336) had college degrees, and 14%

(130) had graduate or professional degrees (e.g., M.A., Ph.D., M.D.). About 34%

(319) were full-time employed, 39% (367) were students, and 19% (177) were part-time employed. The average income was $57,800. Participants were diverse in terms of geographic location, with 33% (312) Mid Atlantic, 21% (199) West Coast, 19% (180) South, 20% (189) East Coast, and 7% (66) Midwest. In terms of Internet use, participants' average number of hours online per day was 6.39 ($SD = 4.02$). On average per day, 2.49 hours ($SD = 2.61$) was spent on social network sites (e.g., Facebook), 1.20 hours ($SD = 2.08$) on forums and chat services, 1.79 hours ($SD = 3.13$) on browsing online media, and .94 hours ($SD = 1.96$) on gaming.

Measures

Demographic questionnaire

Participants completed a self-identifying questionnaire in the last section of the survey requesting the following information: age, race, gender, sexual orientation, education level, employment status, approximate income, social class, English as second language, geographic location of residence (e.g., city, state), and country of residence. We also asked following questions related to Internet use: hours online, device used to go online, and dependence on the Internet as a resource.

Psychological distress

Participants' level of psychological distress was measured using the Mental Health Inventory-5 (MHI-5; Veit & Ware, 1983). The MHI-5 contains 5 items and assesses overall mental health, with higher scores indicating higher levels of psychological well-being and lower scores indicating higher levels of psychological distress. For the current study, we reverse scored the items so that higher scores indicate higher levels of psychological distress. Participants report on the frequency

of the feelings related to mental health over the last month (e.g., "have you felt downhearted and blue?"). Responses are rated on a six-point Likert-type scale ranging from 1 (*all of the time*) to 6 (*none of the time*). The responses are summed and range from 5 to 30. The validity of the MHI-5 has been well supported as a screening tool for anxiety and depressive mood (Cuijpers, Smits, Donker, ten Have, & de Graaf, 2009; Rumpf, Meyer, Hapke, & John, 2001). MHI has been found to be significantly negatively correlated with stressful life events and positively correlated with social support and life satisfaction. Reliability coefficients have ranged from .89 (McHorney & Ware, 1995) to .96 (Veit & Ware, 1983) among predominantly White samples (Fischer & Shaw, 1999). Reliability coefficients for racially diverse populations have ranged upwards of .84 (Fischer & Bolton Holz, 2010; Heubeck, 2000; Khan, 2015; Meybodi et al., 2011). The Cronbach's alpha for the current sample was .85.

Perceived stress

We used the 10-item Perceived Stress Scale (PSS-10) to assess the extent to which situations in life are perceived as stressful (Cohen et al., 1983; Cohen & Williamson, 1988). The PSS-10 was designed to assess how unpredictable, uncontrollable, and overloading the life situations are for the participants over the last month. Participants rate their exposure to the stressful situations on a 5-point Likert-type scale ranging from 0 (*never*) to 4 (*very often*). A sample item reads, "How often have you been angered because of things that were outside of your control?" The responses are summed to generate a total score (ranging from 0 to 40), with higher scores indicating greater perceived stress. Internal reliabilities for the PSS-10 ranged

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from .78 to .91 in a racially/ethnically diverse nationally representative sample (Cohen & Janicki-Deverts, 2012). The measure has also been validated with nonclinical college-aged and the aging population with Cronbach's alphas ranging from .75 to .85 (Ezzati et al., 2014; Roberti, Harrington, & Storch, 2006; Taylor, 2015). Perceived stress has been significantly positively correlated with negative affect (e.g., anxiety), depression, and coping behaviors. The Cronbach's alpha for the current study was .86.

Perceived racism (offline)

The Perceived Ethnic Discrimination Questionnaire-Community Version Brief (PEDQ-CVB; Brondolo et al., 2005) is a 17-item Likert-type measure of general perceived racial discrimination with the following subscales: exclusion/rejection (4 items; e.g., "Have others ignored you or not paid attention to you?"), stigmatization/disvaluation (4 items; e.g., "Have people not trusted you?"), work/school Discrimination (4 items; e.g., "Have you been treated unfairly by coworkers or classmates?"), treatment/aggression (4 items; e.g., "Have others actually hurt you or tried to hurt you?"), and Police (1 item). PEDQ-CVB was selected for our study as it was designed as a general measure that can be used with adults in the community across racial/ethnic groups, and educational backgrounds. The full scale was used for our study. Participants rate their perceived exposure to discrimination items on a 5-point scale ranging from 1 (*almost never*) to 5 (*almost always*). Responses are summed and averaged (ranging from 1 to 5). Higher scores represent higher levels of perceived racial/ethnic discrimination. An additional instruction was introduced stating "Please think about your offline experiences (not online) of

racism." The PEDQ-CVB has been shown to converge with other racism measures and linked to negative mental health outcomes (Brondolo et al., 2005; Brondolo et al., 2008; Brondolo et al., 2015). The reliability estimates across the subscales ranged from .69 to .88 among Black and Latino samples (Brondolo et al., 2005a; Brondolo et al., 2005b) and .80 to .92 among Asian Americans (Yoo, Steger, & Lee, 2010). Full scale reliability estimates have ranged upwards of .90 in multiple racial/ethnic groups (Atkins, 2015; Fang, Friedlander, & Pieterse, 2015). The internal reliability estimate for the current sample was .94.

Belief in an unjust world

The 5-item Unjust Views Scale (UVS; Lench & Chang, 2007) assesses both personal ("The awful things that happen to me are unfair") and general beliefs ("People who do evil things get away with it") in an unfair world. Participants rate their responses on a 5-point Likert-type scale with responses ranging from 1 (*strongly disagree)* to 5 (*strongly agree*). Item scores are summed and averaged (ranging from 1 to 5). Higher scores indicate greater belief in an unfair world. The measure demonstrated discriminant validity with belief in a just world and positively correlated with use of denial, feelings of anger, likelihood judgments of negative events, and other disengagement coping strategies (Lench & Chang, 2007; Liang & Borders, 2012). The reliability estimates with multi-ethnic samples have ranged from .72 to .80 (Lench & Chang, 2007; Liang & Borders, 2012). The Cronbach's alpha for the current study was .65.

<u>*Data Preparation*</u>

A total of 2339 participants completed the survey. Of these, 732 (31%) were removed as they did not record any responses, and another 583 (25%) cases were removed for failing to answer the validity items correctly. One case was further removed for missing more than 10% of the data (Schlomer, Bauman, & Card, 2010), resulting in a sample size of 1023. Little's missing completely at random test suggested that missing data were missing completely at random, $\chi^2(985) = 969.960$, $p = .628$.

For factory analysis, we randomly split the sample into two using a 55% (545) to 45% (478) ratio (Wei, Alvarez, Ku, Russell, & Bonett, 2010). The first half of the sample ($n = 545$) was used for EFA and the second half ($n = 478$) of the sample was used for CFA. Missing value analysis for each of the split samples indicated 29 and 33 cases were missing less than 10% of the data. We imputed the missing values using the expectation-maximization algorithm in SPSS.

For construct validity tests, we used the full combined sample. Based on the missing data analysis of the combined sample, 77 cases (7.5%) were removed for missing more than 10% of the data. Of the remaining data, 4 cases (0.4%) were missing less than 5% of the data. We performed missing data imputation using the Expectation Maximization algorithm in SPSS. The resulting sample size for validity tests was 946.

Chapter 4: Results

EFA

Bartlett's test of sphericity was $\chi^2(5356) = 47999.56$, $p < .001$, and the Kaiser-Meyer-Olkin measure of sampling adequacy was .98, indicating that data were sufficiently factorable. We first conducted a parallel analysis to decide how many factors to retain. The resulting scree plot indicated a sharp "bend of the elbow" around 3rd to 5th factor mark. However, examination of the eigenvalues suggested the retention of 8 factors based on the eigenvalues that were greater than those obtained from simulating random data (O'Connor, 2000). Based on 10000 random data sets, the first 8 factors had raw data eigenvalues (42.90, 8.72, 3.24, 1.83, 1.49, 1.39, 1.24, 1.06) that were greater than the simulated random eigenvalues (1.27, 1.19, 1.14, 1.09, 1.05, 1.01, .98, .95).

Based on the results of the parallel analysis, we conducted an exploratory factory analysis (EFA) to explore the factor structure of the PORS using principal axis factoring with oblique rotation (promax). An eight-factor solution was extracted. Items were sequentially removed, only retaining items that met the following criteria: items with loadings higher than .50 and cross-loadings equal to or less than .20 (Costello & Osborne, 2005). The process of elimination resulted in a removal of five factors, leading to a 41 item three-factor solution. Factor 8 was removed as no items loaded. Less than three items loaded onto the Factors 4, 5, 6, and 7 and were also removed (Tabachnick & Fidell, 2007). We reviewed the scree plot and the

eigenvalues of the original eight-factor solution. The "bend of the elbow" indicated a three-factor structure and the extracted eigenvalues were greater than 1 for only the first three factors. The additional variances accounted by the five factors beyond the first three factors were 1.9%, 1.7%, 1.4%, 1.2%, and 1%, suggesting that the meaningfulness of these factors were very low in explaining the variances in the items.

Given that a three-factor structure appeared to fit the data better than the eight-factor model, we conducted a second EFA to examine the three-factor structure. Beyond satisfying our statistical criteria, the three-factor structure presented with theoretically meaningful interpretations. The factors represented (a) personal experiences of racism in online interactions (18 items; labeled Interaction-Personal; PORS-IP), (b) vicarious observations of other racial/ethnic minorities experiencing racism in online interactions (10 items; labeled Vicarious; PORS-V, and (c) consumption of online information (e.g., multimedia, online news) denigrating racial/ethnic minorities and highlighting the racial injustice in society (13 items; labeled Information; PORS-I). The three-factor solution resulted in the retention of 41 of the 104 items. The variances explained by each of these factors were 40.19%, 10.94%, and 3.69%, respectively. The reliability estimates were .951, .937, and .932, respectively.

Optimization of scale length

Our goal was to maximize the practicality of the measure by considering the potential trade-offs between scale length, reliability, and interpretability. Thus, we set out to optimize the scale length by deleting items based on the following criteria

recommended by Worthington and Whittaker (2006): (a) have the lowest factor loadings, (b) have the highest cross-loadings, (c) contribute the least to the internal consistency of the scale scores, and (d) have low conceptual consistency with other items on the factor. The optimization process resulted in a 30-item measure: 14 items for PORS-IP, 5 items for PORS-V, and 11 items for PORS-I (Table 1).

Descriptives and factor inter-correlations.

Based on our 30-item measure, the reliability estimates for PORS total and the subscales of PORS-IP, PORS-V, and PORS-I were .952, .941, .882, and .919, respectively. The respective mean of the summed scores were 62.72 ($SD = 21.07$), 21.42 ($SD = 9.80$), 11.96 ($SD = 5.08$), and 29.35 ($SD = 10.01$). Variance explained by PORS-IP, PORS-V, and PORS-I was 40.56%, 11.41%, and 3.12%, respectively. The factors were correlated moderately high with each other: $r_{IP-I} = .486$, $p < .001$; $r_{IP-IV} = .572$, $p < .001$; $r_{I-IV} = .700$, $p < .001$.

CFA

The omnibus test of multivariate normality (Small, 1980) suggested that data were not normal, $\chi^2(60) = 1376.90$, $p < .001$. Thus, we employed a maximum likelihood estimation with standard errors and chi-square test statistic that are robust to non-normality (Yuan & Bentler, 2000). We used Mplus 7.11 and specified an oblique model with three correlated factors. Examination of the model fit was guided by the following fit indices (Hu & Bentler, 1999): (a) comparative fit index (CFI; > .95 for good fit; .92-.94 for adequate fit), (b) the standardized root mean square residual (SRMR; < .08), (c) and the root mean square error of approximation (RMSEA; < .06). The results of the CFA suggested adequate to good fit to the data

for our three-factor oblique model (see Table 2). All items loaded significantly (p < .001) on the hypothesized latent factors and the loadings ranged from .61 to .83 (Table 1).

Test of competing models

We compared our three-factor oblique model to a number of alternative models. First, we considered a three-factor orthogonal model, a two-factor model, and a one-factor model for comparisons (Figure 1). We assessed each model's fit indices (CFI, RMSEA, SRMR) and conducted model comparisons based on (a) Satorra-Bentler scaled chi-square difference test, (b) Bayesian information criterion (BIC) values, and (c) Akaike Information Criterion (AIC) values. Smaller values of BIC and AIC values suggest better fit, with higher BIC and AIC values with more than 10 units suggesting lack of empirical support for goodness of fit (Burnham & Anderson, 2002; Kass & Raftery, 1995). All the alternative models showed poor fit to the data (see Table 2). The Satorra-Bentler scaled chi-square difference tests indicated that the oblique three-factor model had a significantly better fit to the data than the orthogonal model, SB $\chi^2(3) = 461.342$, $p < .001$, the two-factor model, SB $\chi^2(2) = 454.318$, p < .001, and the one-factor model, SB $\chi^2(3) = 1571.577$, $p < .001$. The superior fit of the three-factor oblique model was also demonstrated as the alternative models had greater AIC and BIC values of more than 10.

Second, we also considered the bifactor model (Figure 1) for comparison on the basis that when factors correlate highly ($r > .4$), the model may be represented as a bifactor model (Reise, 2012). The bifactor model would suggest that a general factor accounts for variance in all PORS items and that the three specific PORS

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factors would account for variance in respective subsets of PORS items (Reise, Morizot, & Hays, 2007). Thus, PORS may be represented as a single common construct while also retaining its multidimensionality. Evaluation of the fit indices indicated that the bifactor model exhibited better fit to the data than the three-factor oblique model with CFI = .937, RMSEA = .05, and SRMR = .043 (see Table 2). In comparison, the three-factor oblique model had a smaller BIC value than the bifactor model by more than 10 but the vice versa was true for the AIC value. Despite the discrepancy regarding the information criterion values, the Satorra-Bentler scaled chi-square difference test indicated that the bifactor model had a better fit to the data than the three-factor oblique model, SB $\chi^2(27) = 124.755$, $p < .001$. For the bifactor model, all items significantly loaded onto the general factor in the range of .28 to .72 and the specific factors in the range of .32 to .65. Of the 30 items, 24 items loaded onto the general factor at .50 or above. Concurrently, 13 out of 14, 7 out of 11, and 3 out of 5 items loaded above .40 for the PORS-IP, PORS-I, and PORS-V factors, respectively. Thus, the magnitude of the loadings suggested that the general factor and the three specific factors were meaningfully represented (Reise, 2012; Reise, Moore, & Haviland, 2010). Given the superior fit of the bifactor model, we decided to test the utility and construct validity of the general and specific factors of PORS.

Descriptives and factor inter-correlations

The Cronbach's alphas for the total score, PORS-IP, PORS-V, PORS-I were, .95, .95, .90, and .92, respectively. The respective means of the summed scores were 62.92 ($SD = 21.21$), 21.86 ($SD = 10.13$), 11.76 ($SD = 5.11$), and 29.31 ($SD = 9.91$). Higher scores indicated higher levels of perceived online racism. The factors

were correlated moderately high with each other: $r_{IP-I} = .514$, $p < .001$; $r_{IP-IV} = .613$, $p < .001$; $r_{I-IV} = .724$, $p < .001$. The PORS-IP factor correlated the least strongly with the PORS-I factor given their distinction in representing the interaction and information aspects of online racism. Given that the PORS-V factor contained both the interaction and information elements of observing others experience racism in their online experiences, it made sense that PORS-V would correlate strongly with both PORS-IP and PORS-I. The stronger correlation with PORS-I indicated that PORS-V may be characterized as more informative than interactive in nature. Based on these differences, we believe that each of the factors represent conceptually meaningful experiences of racism in online settings.

Model fit across race/ethnicity, gender, and age groups

Given that our purpose was to create a general measure, we conducted additional CFAs to investigate the adequacy of the 30-item bifactor model to assess the applicability across relevant demographic criteria (see Table 2). First, we tested the model fit across major racial/ethnic groups in our sample. The Black sample included participants who self-identified as Black/African American; the Asian Pacific Islander (API) sample included East Asian/East Asian American, Southeast Asian/Southeast Asian American, and Native Hawaiian; the Latino/a sample included Hispanic/Latino/a American; the Multiracial sample included biracial and multiracial participants. Second, we tested the model fit between samples of men and women. Third, we tested the model fit across age groups on the basis that Internet use demographics indicate greater usage and dependence among young adults (Fox & Rainie, 2014; Lenhart, Purcell, Smith, Zickuhr, 2010). We divided our sample

according to the age group brackets represented in the PEW Research Center's report

on Internet use (PEW, 2014). Considering the feasibility of sample size, we were able

to form two groups: users of ages 18 to 29 and users of ages 30 to 50. We were not

able to test the model with adults older than 50 years of age due to limited sample.

Model fit was evaluated based on the CFI, RMSEA, and SRMR fit indices

(Byrne, 2008; Hu & Bentler, 1999). The bifactor model exhibited adequate to good fit

across our samples of Black, Asian and Pacific Islanders (API), Latino/a, Multiracial,

men and women, and the age groups (18 to 29 years old and 30 to 50 years old).

However, the model fit for the Latino/a and Multiracial samples should be interpreted

with caution given the smaller sample sizes in relation to best practice

recommendations (Quintana & Maxwell, 1999; Weston & Gore, 2006). Overall, the

results suggest PORS as an adequate general measure of perceived online racism.

<u>*Construct Validity*</u>

Descriptives and internal reliability

Descriptive statistics, correlations, and Cronbach's alphas for the variables are

presented in Tables 3 and 4. Of note, there was a significant negative correlation

between the PORS-I and age, suggesting that older adults may perceive less racist

contents on the Internet. This is not surprising as Internet use has been shown to

decrease with age (PEW, 2014). Interestingly, total hours online and the hours spent

on social network sites, online forums, online media, and online games were all

significantly and positively correlated with the PORS subscales except again in the

relationships between PORS-I with hours spent on online forums and online gaming

(Table 4). This made sense given that the act of consuming online multimedia

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contents and information may be less apparent in online forums and games which
foster interactions between the users compared to the context of SNS and online
media which are specific platforms for users to share and disseminate contents. In
general, the effect sizes of the significant positive correlations were small (.07 to .16).
This suggest that greater number of hours spent online may not necessarily lead to
significant increases in the level of perceived online racism. We also examined the
factor means across the racial, gender, and age groups in our sample (Table 4). In
general, participants reported lower levels of PORS-IP and moderate levels of PORS-
V and PORS-I. Among racial groups, Black participants scored highest on all three
factors while Asian and Pacific Islander participants scored the lowest. In general,
men and women scored comparably; although, women appeared to score slightly
higher on PORS-V and PORS-I. The younger age group in our sample (ages 18 to 29)
scored slightly higher on all three factors.

Convergent evidence

　　Bivariate correlations between the PORS subscales and the PEDQ-CVB were
examined to assess convergent validity (Table 3). All of the PORS subscales and the
general factor correlated significantly ($p < .01$) and positively with PEDQ-CVB.
Thus, results supported the convergent validity of PORS with an existing general
measure of perceived racism. As anticipated, the correlations were of moderate to
moderately high effect sizes (.3 to .6), with the PORS-I correlating least positively
and PORS-IP correlating most positively with PEDQ-CVB. We used Zou (2007)'s
test of overlapping correlations from dependent groups (i.e., same group) to generate
a 95% confidence interval to assess the significance of the differences in the Pearson

correlation coefficients of PEDQ-CVB with each of the PORS subscales. The correlation with PORS-IP was significantly greater than the correlations with PORS-V (95% CI [.096, .185]) and PORS-I (95% CI [.160, .261]). The correlation with PORS-V was significantly greater than the correlation with PORS-I (95% CI [.027, .114]).

Criterion related evidence

Bivariate correlations between PORS and the hypothesized variables were examined. As hypothesized, all the subscales and the general factor were correlated significantly and positively with MHI-5, PSS, and UVS (Table 3).

Structural equation modeling (SEM) analyses

In addition to bivariate relationships, we used SEM to further examine our hypotheses for criterion and incremental validity evidence. We employed a maximum likelihood estimation with standard errors and chi-square test statistic that are robust to non-normality (Yuan & Bentler, 2000). We used SEM as it accounts for measurement error and allows simultaneous examination of the relationships between the general factor and the specific factors with outcome variables. For criterion evidence, we examined the relationships between the general factor and the specific factors of the PORS with each of our outcome variables (MHI5, PSS, UVS). For incremental evidence, we added PEDQ-CVB into each of the models to assess any changes in significance in predicting the outcome variables.

The measurement model had an acceptable to good fit to the data (see Table 2) and all items loaded onto the latent variables in the measurement model ($p < .001$). The path coefficients between the three PORS factors and the general factor with the

outcome variables are reported in Table 5. The general factor significantly predicted all three of our outcome variables (MHI-5, PSS, UVS). Beyond the general factor, PORS-IP significantly predicted MHI-5 and UVS, and PORS-V significantly predicted MHI-5 and PSS. Contrary to the hypotheses, PORS-I did not significantly predict any of the outcome variables. The differential relationships between the specific factors across the 3 outcome variables also demonstrated utility and some discriminant validity among the three PORS factors.

When PEDQ-CVB was added into the model, only the PORS-V factor accounted for additional unique variance in MHI-5. Although PORS-IP accounted for additional unique variance in PSS, we observed an inverse relationship. We suspected that there was a suppression effect given that the correlation between PSS and PORS-IP was significant and positive ($r = .21, p < .01$) and since a sign change (positive to negative) was observed for the path coefficient when PEDQ-CVB was added into the model. A suppressor variable is a type of third variable that exerts a suppression effect on another IV if its inclusion increases the magnitude of the regression between the IV and the DV (McKinnon, Krull, & Lockwood, 2000; Tzelgov & Henik, 1991). Thus, we were cautious in interpreting the relationship between PSS and PORS-IP in light of the suppression.

Chapter 5: Discussion

The PORS is the first measure to assess racism experiences in the online context. To our knowledge and review, no other measures of racism have been specifically conceptualized and designed to assess the unique ways people interact across online social platforms and consume online contents and information. We found support for a bifactor model of PORS with conceptually and psychometrically meaningful factors representing the various content areas that guided our item generation. Specifically, the Interaction-Personal (PORS-IP) factor characterized personal online racism experiences in online interactions. The Vicarious (PORS-V) factor described observations of online racism experiences that other racial/ethnic minority users encounter in their online interactions. The Information (PORS-I) factor operationalized the consumption of online content and information on denigrations of racial minorities including the reality of racial injustice at the group or societal level (e.g., healthcare, education). Finally, the general factor accounted for common variance across all items beyond the three PORS factors and may represent a general level of perceived online racism independent of the specific PORS factors. Based on our analyses using a diverse large-scale sample (N = 1023), initial psychometric properties of the PORS are promising. The three factors together accounted for nearly 55% of the variance in perceived online racism. All factor loadings were significant in our CFA and the bifactor model had good fit. The model also demonstrated adequate to good fit across racial/ethnic groups (Black, API, Latino/a, and

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Multiracial) gender (men and women), and age groups (18 to 29 and 30 to 50) in our sample, suggesting usefulness as a general measure. Across all of the studies, the subscales of PORS demonstrated high internal consistency, with Cronbach's alpha coefficients in the .90s range with the lowest being .88. We also found adequate four-week test-retest reliabilities suggesting stability of the PORS subscales across a short period of time. We believe that this stability suggests the persistent and consistent nature of online racism as a stressor. Lastly, the construct validity of PORS was also well represented in these studies.

One of our main findings from SEM is that the three PORS factors differentially predicted our criterion variables beyond the general factor. The literature on people's identification with online content is useful in interpreting these results. Research in online communication suggests that greater personal identification with online content may predict greater perceived relevance and risk of that material for an individual (Basil & Brown, 1995; Scarberry, Ratcliff, Lord, Lanicek, & Desforges, 1997). Depending on the degree to which individuals identify with certain online contents or online interactions, their levels of perceived online racism may be different across the specific factors. This relevancy is important in characterizing the utility of the specific factors over and above the general factor as the three factors tailor to different levels of online experience. Given the personal context, the PORS-IP may likely tap into more personally relevant and immediately threatening experiences of online racism for an individual. These immediate personal experiences to racism in online interactions may have the most detrimental influence on well-being such as negative affect and stress. Indeed, we observed that PORS-IP

significantly predicted psychological distress and beliefs in an unjust world (BUW) over and above the general factor.

Although similarly interpersonal in context, the PORS-V represents indirect observations of racism in online interactions. Depending on the extent to which individuals identify with the victims, these vicarious observations may also negatively influence well-being. The PORS-V was only significantly linked to psychological distress and not BUW suggesting that while stressful, vicarious experiences may not be as relevant in shaping people's views on society compared to direct personal experiences. Interestingly, the decreasing trend of personal relevance seem to hold as PORS-I was not linked to any of our outcome variables beyond the general factor. Contrary to our hypothesis that PORS-I may be linked to unique group-related outcomes such as changes in people's views on racial justice in society, the group level contents from this domain may make it most peripheral in terms of personal relevance and hence viewed as less immediately threatening.

In terms of incremental validity, we found that PORS-V significantly predicted psychological distress over and above a general measure of racism. This suggests that the online experiences of witnessing other racial/ethnic minorities being discriminated may be a unique stressor. Broadly, this aspect resembles the racism that can be felt vicariously (i.e., through the observation of others) which often generates feelings of helplessness and righteous anger (Harrell, 2000). Given the vast and convenient nature of the Internet, it may be likely that individuals come across frequent instances of other racial/ethnic minorities being racially victimized than that they would in offline interactions.

Contrary to our hypotheses, PORS-IP, PORS-I, and PORS-total were not significant in explaining additional unique variance for psychological distress, perceived stress, and BUW. We offer several interpretations for the non-significance. First, this could be due to the restricted range as the respective average scores for these outcome variables and the PORS scores hovered around the midpoint and below the midpoint of the score ranges. Second, the PORS-IP was highly correlated with PEDQ-CVB and may not have been able to add unique variance beyond offline racism. Specific to BUW, the internal consistency estimate of the Unjust Views Scale was less than adequate with a Cronbach's alpha of .65. It is possible that the low reliability may have affected the validity of BUW assessed for our current sample and hence our findings. This caveat may also have influenced our SEM analysis in which PORS-I was not linked to BUW contrary to our hypothesis. Third, although we clearly asked about online and offline experiences and the item contents differed, it is possible that participants may not have been able to make clear distinctions between the two experiences. While the PORS specifically outlines online activities, some of the more general items (e.g., "Have others ignored you or not paid attention to you?") in the PEDQ-CVB may have been answered without conscientious effort to distinguish between the two contexts. Most importantly, however, we feel that the measures we used may not have been best suited to gauge the unique significance of PORS in predicting mental health outcomes. Most of the items pertaining to the measures we used characterize general affective states and personal attitudes towards problems that may be linked to offline contexts. For example, in response to a PSS item such as "How often have you felt that things were going your way?", it may be

unlikely that participants will view incidents of racism in online interactions in this context. In contrast, a measure that specifically examines negative affect (e.g., anger) stemming from individuals' online experiences (e.g., "I felt angry from something that I read in my social media feed") may be more suited to exploring the psychological impact of perceived online racism.

For PORS-IP, we observed a possible suppression effect in which the path coefficient became significant and negative on perceived stress once we added an existing measure of general perceived racism. The suppression seemed possible given that the two variables were highly correlated and that the PORS-IP was hypothesized to be the most conceptually similar to the traditional focus on the interpersonal context in assessing perceived racism. Scholars have cautioned that a meaningful interpretation of the unexpected directional relationship is unwarranted when there is reason to suspect statistical suppression (Cheung & Lau, 2008). Further analyses of the suppressor variable have been recommended by treating the suppressor variable as a potential mediator or combining the suppressor and other variables for a meaningful interpretation of the resulting linear relationship (McKinnon et al., 2000; Maassen & Bakker). However, these post hoc analyses were not pursued in our study given that it did not make conceptual sense for the current study to combine the constructs of offline and online racism or treat online racism or offline racism as a mediator.

One interesting finding was that most of the items we developed to capture subtle racism (i.e., racial microaggressions; RM) in online interactions and in the observations of other racial/ethnic minorities were not retained throughout the data

analysis. Thus, majority of the items in the PORS-IP and the PORS-V represent

explicit forms of racism. We believe there are several factors that have contributed to

this process. First, given that we have tried to adapt some of the items that were

designed to assess offline RM for online purposes, it is possible that these adaptations

may not have truly represented how users in online settings may recognize RM. This

is related to the second point that, much of the social cues that an individual may

consider in determining whether certain ambiguous messages or acts are deemed as

RM may be missing on the Internet. For example, these cues are important for an

individual to determine whether he/she is being ignored in group social interactions

due to their race/ethnicity. However, if we consider whether an individual is being

ignored in online social groups due to his/her race/ethnicity, the lack of the social

cues makes it difficult to assess whether such assumption is valid. Thus, the visibility

of RM may be more obscured on the Internet. This ties into our third point that, RM

and other forms of subtle racism may be overshadowed by the explicit and

controversial nature of blatant forms of online racism. Blatant and controversial

material are often the subject of "trending" content that becomes popularized through

the collective sharing efforts among the online community (Becker, Naaman, &

Gravano, 2011). These materials may take precedence in how individuals attend to

their online activities compared to the greater perceptive effort and time required to

figure out whether certain online messages or interactions may be considered as RM.

In general, we feel that subtle forms of racism may require a reconceptualization of

their characteristics and nature when considered in an online context.

Limitations

The present study has several limitations that are noteworthy and should be addressed in future studies. First, as we already partially discussed, our incremental validity hypotheses were not supported for two of the three subscales. In addition to using measures that specifically examine the psychological outcomes priming online experiences, it may be important to consider the unique consequences associated with frequent and even daily participation in online activities. For example, given the daily usage (Berkman, 2013; PEW, 2014), we surmise that the stress resulting from perceived online racism may be chronic and additive across time. The current study was cross-sectional in nature and thus was not able to provide any insight on this process. Thus, a longitudinal examination may be one approach to understanding the chronic nature of online racism-related stress. In doing so, future studies may consider how the online and offline distinctions can be better achieved through careful measure selection. It may also be important to formally operationalize the online-related stressors to test the unique predictive validity of PORS. In general, future studies can examine additional incremental validity of the PORS, especially with the PORS-V and PORS-I as they seemed to be more distinguished from offline racism experiences.

Additionally, although we found adequate to good model fit across various racial/ethnic groups in our sample, our sample sizes for the Latino/a and Multiracial groups were less than the optimal number recommended in the literature (e.g., 200-300; MacCallum, Widaman, Zhang, & Hong, 1999). Future studies can further validate the PORS with larger samples for these groups.

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Third, PORS may be limited in its generalizability to the breadth of online

activities. This may be especially true for PORS as it measures the external

experiences rather than an internally consistent trait (e.g., personality). Although we

strived to develop items that represent the more ubiquitous and popular means of

online interactions and content consumption activities, the Internet is a fast-changing

environment with great potential for emergence of new ways for people to connect

with others and access information. Thus, while we believe that our item contents do

provide the major nuances of online-specific racism experiences, with time these

activities may be phased out and replaced with other sets of online communication

strategies. We think that this limitation actually provides opportunities to conduct

updates to the PORS so that its measurement capabilities parallel the advances in the

online social landscape. As computer software receive continuous updates over time,

we believe that the PORS will also benefit from periodic revisions. Thus, we coined

the current development as Version 1 (PORS v1.0).

Implications for Research

Despite these limitations, the PORS can facilitate advanced research on the

social, physical, and psychological implications of online racism. In the psychological

domain, future research could investigate the effects of online racism on other areas

of well-being and psychological distress. In doing so, the three subscales may

characterize different facets of these outcomes. The PORS-IP may be used to study

the mental health implications of facing interpersonal hostility in online interactions

such as the effect on state expressions of anger (Brondolo et al., 2008). With the

PORS-V and PORS-I, researchers could investigate the overall mood and self-esteem

levels that may be negatively affected from helplessly observing other racial/ethnic

minorities being discriminated and consuming information about the racial injustice

in society. Additionally, the consumption of societal information may be especially

relevant to the examination of how frequent encounter of these materials may

translate into individuals' offline approaches and attitudes such as hypervigilance

about racism (Carter, 2007) and learned helplessness (Abramson & Seligman, 1978).

In terms of physical health, longitudinal studies can track and document the influence

of online racism on relevant physiological changes that have been connected to

racism (Brondolo et al., 2008; Dolezsar, McGrath, Herzig, & Miller, 2014). For

example, studies may examine cortisol levels for stress and blood pressure changes of

users who may sustain substantial online presence in relation to their exposure to

online racism. In a longitudinal framework, it would be interesting to examine

whether the onset of controversial racial conflicts (e.g., police brutality on

racial/ethnic minorities) and their popularization (e.g., trending) on the Internet may

coincide with how much online racism is experienced and in turn influence changes

in these physiological indicators.

Implications for Practice

For practical implications, online racism may coincide with much of how

adolescents or younger children may experience cyberbullying (Hinduja & Patchin,

2010). We believe that the PORS may also serve as a useful clinical tool based on

future validations with the adolescents and younger children. For adults, counselors

working with clients experiencing racism-related stress or extreme unjust views of

society can use our measure as anchors for exploring the racism that they may be

facing not only in the offline context, but also on the Internet. In doing so, the three

domains of the PORS may illuminate the different ways in which the client may be

affected. These discussions may be especially important for those who sustain

substantial online presence and dependence.

Table 1.

Item Factor Loadings (pattern matrix coefficients) for the Perceived Online Racism Scale

Items	EFA				CFA: Three-factor			CFA: Bifactor			
	1	2	3	h^2	1	2	3	g	1	2	3
Factor 1: Interaction-Personal											
50. Received racist insults regarding my online profile (e.g., profile pictures, user ID).	.84	.03	-.02	.72	.82			.57	.58		
15. Been kicked out of an online social group because I talked about race/ethnicity.	.83	-.02	-.13	.58	.72			.41	.62		
19. Been intentionally invited to join racist online social groups/hate groups.	.83	-.13	-.08	.55	.61			.28	.61		
61. Received replies/posts suggesting that I should avoid connecting online with friends from my own racial/ethnic group.	.80	.10	-.12	.61	.78			.51	.60		
23. Received racist insults about how I write online.	.79	-.08	.02	.58	.76			.46	.63		
52. Been threatened of being harmed or killed due to my race/ethnicity.	.75	.05	-.06	.55	.77			.44	.65		
31. Received replies/posts hinting that my success is surprising for a person of my race/ethnicity.	.72	-.03	.10	.58	.69			.53	.44		
67. Received a message with a racist acronym such as FOB (Fresh Off the Boat) or PIBBY (Put In Black's BackYard).	.70	-.01	-.07	.44	.74			.49	.55		
30. Been harassed by someone (e.g., troll) who started a racist argument about me for no reason.	.67	-.03	.14	.55	.81			.62	.52		
69. Received a racist meme (e.g., racist catchphrases, captioned photos, #hashtags etc.).	.65	.09	.01	.50	.77			.59	.49		
76. Been tagged in (or shared) racist content (e.g., websites, photos, videos, posts) insulting my race/ethnicity.	.65	.05	.09	.55	.79			.62	.49		
36. Received posts with racist comments.	.64	-.03	.22	.59	.75			.63	.42		
3. Received replies/posts hinting that what I share online											

racist posts.

Factor 2: Information

Item							
101. Been informed about a viral/trending racist event happening elsewhere (e.g., in a different location).	-.07	.84	-.05	.60	.74	.51	.56
93. Been informed about unfairness in healthcare for racial/ethnic minorities (e.g., biased quality of treatment, insurance issues).	.06	.73	-.04	.53	.71	.52	.50
100. Seen online videos (e.g., YouTube) that portray my racial/ethnic group negatively.	.07	.73	-.07	.51	.73	.67	.32
94. Encountered online resources (e.g., Urban Dictionary) promoting negative racial/ethnic stereotypes as if they are true.	.05	.70	.01	.55	.73	.58	.45
88. Been informed about unfairness in financial gains for racial/ethnic minorities (e.g., earning less money than Whites for doing the same work, unfair housing and loan opportunities).	-.14	.69	.13	.53	.71	.48	.56
82. Been informed about unfairness in education for racial/ethnic minorities (e.g., higher suspension rates for racial/ethnic minority students).	-.09	.69	.13	.55	.76	.56	.53
99. Been informed about a viral/trending racist event that I was not aware of.	.05	.69	-.12	.40	.73	.50	.35
80. Seen online news articles that describe my racial/ethnic group negatively.	.03	.67	.06	.53	.64	.64	.41
92. Seen photos (e.g., Google images) that portray my racial/ethnic group negatively.	.04	.65	.04	.50	.75	.64	.37
77. Encountered a viral/trending online racist content (e.g., many likes, stars).	-.08	.65	.08	.53	.71	.55	.45
3. Encountered online hate groups/communities against non-White racial/ethnic groups.	.14	.65	-.02	.51	.71	.63	.35

Factor 3: Interaction-Vicarious

Item							
64. Seen other racial/minority users receive racist comments.	-.09	.05	.83	.68	.81	.70	.39
51. Seen other racial/minority users being treated like a second-class citizen.	-.06	.10	.79	.69	.83	.69	.47

65

22. Seen other racial/minority users being treated like a criminal.	.02	.08	.72	.63	.76	.62	.46
44. Seen other racial/minority users receive racist insults regarding their online profile (e.g., profile pictures, user ID).	.18	.00	.66	.60	.81	.72	.36
4. Seen other racial/minority users being threatened to be harmed or killed.	.11	.11	.58	.53	.74	.58	.48

Note. Factor loadings for Exploratory Factor Analysis (EFA) with promax rotation ($n = 545$) and Confirmatory Factor Analysis (CFA) for the oblique three-factor model and the bifactor model ($n = 478$). All items loaded significantly in the CFA at **$p < .01$.

Table 2

Goodness-of-Fit Indicators for Structural Equation Modeling Analyses

Models/Samples	df	χ^2	RMSEA	90% CI	CFI	SRMR	BIC	AIC
Oblique three-factor model	402	944.024**	.053	[.049, .058]	.927	.055	34780.77	34392.39
Orthogonal three-factor model	405	1306.890**	.068	[.064, .072]	.873	.253	35230.75	34855.48
Two-factor model	404	1356.621**	.070	[.066, .074]	.866	.070	35303.54	34924.11
One-factor model	405	2758.066**	.11	[.106, .114]	.668	.118	37124.59	36749.32
Bifactor model	375	822.489**	.050	[.045, .055]	.937	.043	34792.49	34292.14
Second-order model	402	944.024**	.053	[.049, .058]	.924	.055	34780.17	34392.39
Black (N = 306)	375	734.83**	.056	[.050, .062]	.929	.048	23676.35	23229.52
API (N = 319)	375	601.403**	.044	[.037, .050]	.942	.065	21770.66	21318.83
Latino/a (N = 163)	375	610.336**	.062	[.053, .071]	.902	.074	12133.28	11762.03
Multiracial (N = 108)	375	532.063**	.062	[.050, .074]	.920	.059	8124.41	7802.56
Men (N = 372)	375	680.846**	.047	[.041, .052]	.948	.042	26620.43	26150.16
Women (N = 555)	375	826.716**	.047	[.042, .051]	.941	.039	41006.48	40488.21
Ages 18 to 29 (N = 660)	375	849.696**	.044	[.040, .048]	.949	.038	49070.73	48531.66
Ages 30 to 50 (N = 248)	375	580.488**	.047	[.039, .054]	.945	.048	17564.76	17143.15
Measurement model	1371	3768.68**	.043	[.041, .045]	.906	.055	140013.43	138926.53

Note. RMSEA = root-mean-square error of approximation; CI = confidence interval for RMSEA; CFI = comparative fit index; SRMR = standardized root-mean-square residual; BIC = Bayesian information criterion; AIC = Akaike information criterion; AAPI = Asian and Pacific Islander. * *p* < .05. ***p* < .01.

Table 3

Correlations, Descriptive Statistics, and Cronbach's Alphas for PORS, validity measures, and age

Variable	1	2	3	4	5	6	7	8	α	*M*	*SD*	*Range*
1. PORS-total									.95	63.02	21.22	30-150
2. PORS-IP	.84**								.94	21.75	10.03	14-70
3. PORS-V	.83**	.57**							.90	11.93	5.12	5-25
4. PORS-I	.86**	.48**	.67**						.92	29.33	10.02	11-55
5. PEDQ-CVB	.68**	.68**	.54**	.47**					.94	1.84	.72	1-5
6. MHI-5	.29**	.30**	.21**	.20**	.32**				.85	13.95	4.70	5-30
7. PSS	.31**	.21**	.31**	.30**	.29**	.38**			.86	17.55	6.70	0-40
8. UVS	.29**	.27**	.27**	.21**	.37**	.24**	.18**		.65	2.60	.74	1-5
9. Age	-.07*	.01	-.06	-.13**	.10**	-.08*	-.10**	.01		27.43	9.77	18-67

Note. PORS = Perceived Online Racism Scale; IP = Interaction-Personal; V = Vicarious; I = Information; PEDQ-CVB = Perceived Ethnic Discrimination Questionnaire-Community Version Brief (general measure of perceived offline racism) MHI-5 = Mental Health Inventory-5; PSS = Perceived Stress Scale; UVS = Unjust Views Scale. ** *p* < .01, * *p* < .05

Table 4

Factor means, standard deviations, and Cronbach's alphas

Sample group	PORS-IP			PORS-V			PORS-I			PORS-total		
	M	*SD*	α	*M*	*SD*	α	*M*	*SD*	α	*M*	*SD*	α
Study 1												
EFA Sample (N = 545)	21.42	9.80	.94	11.96	5.08	.98	29.35	10.01	.88	62.72	21.07	.95
CFA Sample (N = 478)	21.86	10.13	.95	11.76	5.11	.90	29.31	9.91	.92	62.92	21.20	.95
Black (N = 306)	24.38	11.58	.95	13.29	5.30	.90	32.52	10.09	.92	70.19	22.08	.95
API (N = 319)	19.31	7.74	.93	10.79	4.82	.88	26.74	9.04	.91	56.84	18.13	.94
Latino/a (N = 163)	20.98	8.77	.93	11.59	4.96	.88	29.11	10.22	.92	61.68	20.07	.94
Multiracial (N = 108)	21.86	10.48	.95	12.22	5.06	.91	30.05	9.47	.91	64.13	21.58	.96
Men (N = 372)	22.38	10.68	.95	11.10	4.81	.89	27.35	9.73	.92	60.83	21.90	.96
Women (N = 555)	21.29	9.60	.94	12.47	5.21	.89	30.72	9.95	.92	64.47	20.61	.95
Ages 18 to 29 (N = 660)	21.89	10.46	.95	12.16	5.22	.89	30.23	9.90	.92	64.29	21.58	.95
Ages 30 to 50 (N = 248)	21.44	9.06	.94	11.40	4.81	.89	27.29	9.87	.93	60.14	19.94	.95
Study 2												
Time 1 (N = 46)	19.26	8.19	.92	11.63	5.59	.92	28.96	9.13	.88	59.85	20.05	.94
Time 2 (N = 46)	18.61	7.07	.90	11.65	4.70	.90	28.87	10.04	.93	59.10	18.13	.94

Note. PORS = Perceived Online Racism Scale; IP = Interaction-Personal; V = Vicarious; I = Information; API = Asian and Pacific Islander.

Table 5
Path coefficients for structural equation modeling analyses

Variable	PORS/ PEDQ-CVB	Criterion Evidence				Incremental Evidence			
		B	SE	β	R^2	B	SE	β	R^2
MHI5	PORS-IP	.25	.06	.23**	.08**	.07	.06	.06	
	PORS-I	.12	.07	.11		.09	.07	.08	
	PORS-V	.29	.10	.26**	.03**	.25	.09	.22**	.03**
	General Factor	.22	.05	.20**	.17**	-.02	.06	-.01	
	PEDQ-CVB					.42	.20	.37**	.10**
PSS	PORS-IP	.06	.04	.05		-.14	.05	-.13**	.08**
	PORS-I	.09	.06	.09		.06	.06	.05	
	PORS-V	.18	.08	.17*	.03*	.13	.08	.12	
	General Factor	.31	.05	.29**	.17**	.07	.05	.06	
	PEDQ-CVB					.44	.06	.39**	.08**
UVS	PORS-IP	.23	.06	.21**	.08**	.01	.07	.16	
	PORS-I	.03	.07	.03		.01	.08	.02	
	PORS-V	.18	.10	.16		.13	.10	.07	
	General Factor	.34	.06	.31**	.17**	.05	.07	.17	
	PEDQ-CVB					.53	.08	.46**	.08**

Note. PORS = Perceived Online Racism Scale; IP = Interaction-Personal; V = Vicarious; I = Information; PEDQ-CVB = Perceived Ethnic Discrimination Questionnaire-Community Version Brief (general measure of perceived offline racism) MHI-5 = Mental Health Inventory-5; PSS = Perceived Stress Scale; UVS = Unjust Views Scale. ** $p < .01$, * $p < .05$
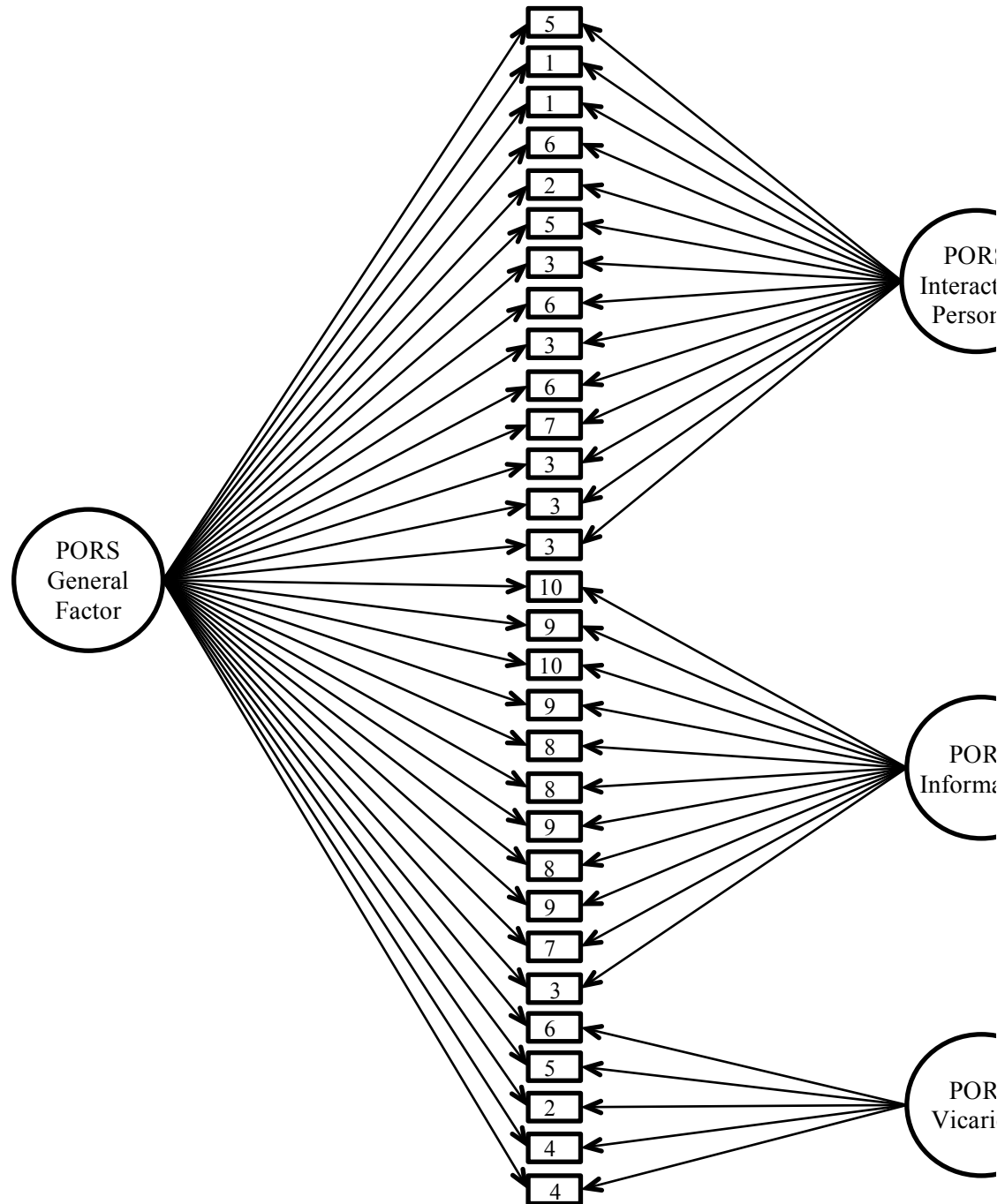
Figure 1. Bifactor model of the Perceived Online Racism Scale (PORS). All items acc[...]
for variance in the general factor over and above the variances accounted for the specif[...]
factors. The specific factors are uncorrelated in this model. The three-factor model exc[...]
the general factor and the three factors are correlated in the oblique model while uncor[...]
in the orthogonal model. The oblique two-factor model is comprised of the Interaction-
Personal and a factor that is represented by the combined items of the Information and
Vicarious factors, with the two factors correlated in the model. One-factor model repre[...]
all items loading onto a single factor.

Appendices

Appendix A

The Perceived Online Racism Scale (PORS v1.0)

INSTRUCTION: We are interested in your personal experiences of racism in online settings as you interact with others and surf the Internet. As you answer the questions below, please think about your online experiences in the past 6 months.

Please rate your responses based on the following options: 1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Always.

In the past 6 months, I have…

1. Received racist insults regarding my online profile (e.g., profile pictures, user ID).
2. Been kicked out of an online social group because I talked about race/ethnicity.
3. Been intentionally invited to join racist online social groups/hate groups.
4. Received replies/posts suggesting that I should avoid connecting online with friends from my own racial/ethnic group.
5. Received racist insults about how I write online.
6. Been threatened of being harmed or killed due to my race/ethnicity.
7. Received replies/posts hinting that my success is surprising for a person of my race/ethnicity.
8. Received a message with a racist acronym such as FOB (Fresh Off the Boat) or PIBBY (Put In Black's BackYard).
9. Been harassed by someone (e.g., troll) who started a racist argument about me for no reason.
10. Received a racist meme (e.g., racist catchphrases, captioned photos, #hashtags etc.).
11. Been tagged in (or shared) racist content (e.g., websites, photos, videos, posts) insulting my race/ethnicity.
12. Received posts with racist comments.
13. Received replies/posts hinting that what I share online cannot be trusted due to my race/ethnicity.
14. Been unfriended/lost online ties because I disagreed with racist posts.
15. Been informed about a viral/trending racist event happening elsewhere (e.g., in a different location).
16. Been informed about unfairness in healthcare for racial/ethnic minorities (e.g., biased quality of treatment, insurance issues).
17. Seen online videos (e.g., YouTube) that portray my racial/ethnic group negatively.
18. Encountered online resources (e.g., Urban Dictionary) promoting negative racial/ethnic stereotypes as if they are true.
19. Been informed about unfairness in financial gains for racial/ethnic minorities (e.g., earning less money than Whites for doing the same work, unfair housing and loan opportunities).

20. Been informed about unfairness in education for racial/ethnic minorities (e.g., higher suspension rates for racial/ethnic minority students).
21. Been informed about a viral/trending racist event that I was not aware of.
22. Seen online news articles that describe my racial/ethnic group negatively.
23. Seen photos (e.g., Google images) that portray my racial/ethnic group negatively.
24. Encountered a viral/trending online racist content (e.g., many likes, stars).
25. Encountered online hate groups/communities against non-White racial/ethnic groups
26. Seen other racial/minority users receive racist comments.
27. Seen other racial/minority users being treated like a second-class citizen.
28. Seen other racial/minority users being treated like a criminal.
29. Seen other racial/minority users receive racist insults regarding their online profile (e.g., profile pictures, user ID).
30. Seen other racial/minority users being threatened to be harmed or killed.

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