

# Developing an Assessment Battery to Measure Exposure to Police Brutality on Social Media Among Black Adolescents

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## Abstract

This study aims to investigate the impact of police brutality exposure on social media among Black adolescents, recognizing its profound influence on attitudes and perceptions. The research developed the PBE-SM self-report assessment battery through an iterative process, involving qualitative interviews and cognitive assessments with Black first-year college students. The battery comprises five instruments, each probing specific time frames to capture the dynamic nature of social media exposure. For each instrument, all ten items were submitted to an exploratory factor analysis, revealing distinct structures, and providing psychometric evidence of construct validity and the utility of a multifaceted approach in understanding how perceptions evolve over time. The study emphasizes the practical applications of PBE-SM for researchers, educators, and counselors. It facilitates real-time monitoring of Black adolescents' exposure, aiding counselors in recognizing periods of heightened exposure and guiding stress management. Educators can use the tool for positive social media integration in academic settings. While limited to Black college undergraduates, future research aims to establish external validity across diverse demographics. In conclusion, PBE-SM represents an innovative tool for comprehending and addressing the psychological well-being of Black adolescents amidst prevalent exposure to police brutality on social media.

**Keywords:** Social media, police brutality, Black adolescents, assessment

## 1. Introduction

For Black people generally, and Black youth specifically, exposure to repeated police violence and discrimination can exacerbate stress pathways, increasing the likelihood of psychological disorders (Ang, 2018, Bor et al., 2018; Curtis, 2021). Moreover, these detrimental effects on personal well-being are not limited to direct interaction with the police. Indirect or vicarious exposure via friends, family, and the community play a crucial part in adolescents' perception of policing (Bradford, 2010; Brunson & Miller, 2006; Harris & Jones, 2020; Schuck et al., 2008). According to Swell and Jefferson (2016), simply residing in communities with more intrusive pedestrian stops by law enforcement was linked with worse health. One recent study found that vicarious police interactions were associated with increased depressive symptoms in adolescents, especially among Black girls (Turney, 2021). Vicarious police contact was also found to be associated with somatic symptoms, especially when procedural injustice or unfair treatment was perceived during a police encounter (McFarland et al., 2019). In recent years, a series of incidents where unarmed Black people were killed by police officers, along with other acts of police brutality primarily against Black people, have gained broad attention among young people as the video recordings went "viral" on various social media platforms (e.g., Heaney, 2020). Repeated exposure to these events on social media may lead to intensified feelings of hopelessness and marginalization, particularly among those who have negative attitudes toward police and their practices (Campbell & Valera, 2020; Franklin et al., 2019; Payne et al., 2017).

The empirical evidence notwithstanding, there remains an important gap in the literature regarding assessment instruments that measure vicarious exposure to police brutality on social media platforms. While items related to individuals' direct exposure to police violence (English et al., 2017; Weisman, 2018) and perceptions of police practices are included in several scales, including perceptions of fairness and effectiveness (Nadal & Davidoff, 2015), the use of

force (Footer et al., 2020), racial profiling (Footer et al., 2020; Johnson, Devereux, & Wagner, 2022), legitimacy and accountability (Lemieux et al., 2020), there are currently no psychometric tools assessing Black adolescents' vicarious experiences with police brutality online. Addressing this gap in assessment instruments will be essential for gaining a comprehensive understanding of Black adolescents' exposure to police brutality across different contexts. By utilizing a range of measurement tools that capture various dimensions of exposure and its impact, researchers and practitioners can better tailor interventions and support systems to address the unique needs of Black adolescents and mitigate the adverse effects of exposure to police violence on their psychological wellbeing.

As an initial step to fill this gap, we generated items from qualitative interviews and created a self-report assessment battery. To ensure the robustness and accuracy of our assessment battery, we incorporated a diverse set of five instruments designed to measure different facets of Black adolescents' exposure to police brutality on social media across various time stamps. This strategic choice serves the dual purpose of capturing the dynamic nature of their experiences and allowing for a comprehensive examination of the longitudinal impact of vicarious police violence. By including the same items across different time stamps, we enable a meticulous tracking of changes in individuals' exposure over time, providing a nuanced understanding of how patterns of police violence on social media may evolve and influence psychological well-being. This longitudinal consistency also facilitates the identification of potential shifts in coping mechanisms, resilience factors, or exacerbating conditions, contributing valuable insights for both intervention strategies and policy recommendations. Moreover, maintaining consistency in assessment items across time stamps enhances the reliability and validity of the measurement tool. This approach ensures that any observed variations in outcomes can be confidently attributed to changes in exposure levels rather than inconsistencies in measurement instruments. Such methodological precision is crucial for generating accurate findings that can inform targeted interventions and support systems for Black adolescents facing the pervasive impact of vicarious police violence.

## **2. Literature Review**

### *2.1 Racialization of Social Media*

With an increase in overall usage of social media nationally (Auxier & Anderson, 2021), there has been growing concern regarding the amount of hate speech, racial slurs, and racial profiling on these platforms (Van Royen et al., 2015). Bartlett et al. (2014) conducted a study to identify how often and at what volume racial, religious, and ethnic slurs were being used on Twitter. In total, the researchers gathered 126,975 tweets (14,100 tweets each day). They discovered around 10,000 uses of racial and ethnic slur phrases in English over the eight days they searched Twitter's publicly accessible live feed.

In addition, increased hours spent viewing and sharing posts about social justice on social media platforms put Black youth at greater risk of exposure to institutional racial discrimination as opposed to individualized discrimination (Barlett et al., 2014; Lim & Alrasheed, 2021). This relation is magnified for daily, compared with weekly or monthly, social media platforms users, as they are more likely to be passively engaged with the content (Barlett et al., 2016). When Black college students attending a predominantly white institution (PWI) described racial encounters on social media sites such as Twitter, Facebook, and YikYak, they revealed frequent exposure to hostile anti-Black messages and experiences with racialized aggression (Gin et al., 2017). These research studies provide further evidence of the racialization of online space via the employment of racial messaging among Black youth, as the study was carried out on a website that was largely utilized by Black adolescents and young adults.

### *2.2 Capturing Adolescents' Social Media Exposure to Police Brutality*

Aided by the convenience of having cellphones and other mobile devices, adolescents can access social media more frequently than ever before (Lenhart, 2015). In particular, the percentage of adolescents who used social media drastically increased from 7% in 2005 to 84% in 2021 (Pew Research Center, 2021). The consistency and frequency of this group's media use are unquestionably high, directly influencing the amount of content they are exposed to daily (Barlett et al., 2016; Van Royen et al., 2015). The aspects of social media exposure investigated have generally included the time, frequency, contexts, and the apps used (e.g., Ali et al., 2020; Olufadi, 2016; Verbeij et al., 2021). Such measures have provided very detailed descriptions of adolescents' social media use. Other measurement tools have focused on the content adolescents are exposed to on social media and online in general, such as race-related traumatic events (McLeroy & Wang, 2023; Tynes et al., 2019), internet harassment and unwanted sexual solicitation (Finkelhor et al., 2000; Ybarra et al., 2007), cyber-bullying (Cassidy et al., 2009; Kowalski & Limber, 2007; Shariff, 2008; Wang et al., 2009; Williams & Guerra, 2007), and antisocial content (den Hamer et al., 2017).

For Black adolescents whose lives are media-saturated these days, an inevitable part of their social media exploration is dealing with contents related to police brutality (Campbell & Valera, 2020; McLeroy & Wang, 2023; Tanksley, 2022; Tynes et al., 2019). However, there is a paucity of literature concerning the measurement of exposure to police brutality on social media, except one study designed to measure the positive and negative police-related content (Cross & Fine,

2021). Given that exposure to police brutality on social media is a salient source of psychological distress for Black youth (McLeroy & Wang, 2023; Tanksley, 2022), it is imperative to create a measurement tool that can efficiently capture the intensity and content of Black college-aged youth's media exposure related to violent encounters between law enforcement officers and the Black community.

### 3. The Current Study

The goal of the current study was to develop an assessment battery of instruments, 3 of which have subscales, to measure Black adolescents' exposure to police brutality on social media. This module-based battery allows users to probe different nested timescales, as follows: since the start of the pandemic, during the past six months, during the past month, based on episodic memory of a specific event in which a Black person is killed by a police officer, and during the month after a Black person is killed by a police officer. We took three steps in the development of our assessment battery. First, we conducted individual, semi-structured interviews with 20 Black first-year college students to examine their interactions with specific media products, from which we intended to identify sources and characteristics of information on social media related to police brutality. Initial battery items were then created based on results from the qualitative interviews. Next, cognitive interviews were conducted with a separate sample of seven Black first-year college students to evaluate the feasibility and ecological validity of the instrument items. We then refined the initial items based on feedback from the cognitive interviews. Finally, we administered the instrument to a convenience sample of 300 Black first-year college students to examine the factor structure of the items.

### 4. Method

#### 4.1 Participants

The recruitment criteria included the following: (a) current enrollment as a college freshman, (b) self-identification as Black or African American, and (c) self-identification as an active user of social media sites (e.g., Twitter, Instagram, Facebook, TikTok, etc.). For the individual interviews, participants were recruited from several general education courses (e.g., mathematics, biology, communication). This recruitment process yielded a sample of 20 Black college freshmen that consisted of 16 women (80%) and four men (20%), ranging in age from 18 to 20. For the cognitive interviews, seven Black college freshmen (3 female and 4 male) were recruited online from various colleges and universities. To assess the psychometric properties of the instrument, we administered it to a sample of 300 African American college freshmen ( $N = 300$ ; Age  $M = 20.06$  years,  $SD = 2.34$ ; Women: 51.5%). The recruitment process consisted of several modes of communication such as social media, as well as, flyers, email correspondence, and snowballing.

#### 4.2 Procedures

After securing approval from the institutional review board and informed consent from study participants, in-depth, semi-structured interviews were conducted via Zoom. Each interview lasted for approximately 30 to 45 minutes, and they were digitally recorded and transcribed verbatim using a professional transcription service. Participants received a \$15 Amazon gift card and a resource list of local mental health services following the interviews.

Each interview comprised two segments, and the current study focused on the data collected in the first segment. In the first segment of the interview, participants were asked to respond to eight questions concerning the frequency and context of their social media use. Those questions were as follows:

1. How frequently do you use social media sites?
  - Follow-up question: how many hours a day?
  - Follow-up question: during what time of the day?
2. What type of content do you see on social media related to police brutality?
  - Follow-up question: What form is this content usually in?
  - Follow-up question: Could you describe this content?
  - Follow-up question: How often do you see this content when on social media?
  - Follow-up question: What social media sites do you see this content on?

Additionally, we asked the targeted question, "How would you define police brutality?" before collecting data about police brutality content, gauging the students' knowledge before conducting the remainder of the interview.

Based on the findings of these semi-structured interviews, we developed nine self-report survey items to assess participants' exposure to police brutality on social media. The wording of these items was extracted directly from participant narratives during the interviews (McLeroy & Wang, 2023). The items covered all three types of police brutality media content: incident-based, educational/awareness-based, and opinion-based. Further, we created different

reference time points to anchor participants’ experiences when responding to these items. We named this time-based, self-report assessment battery the *Police Brutality Exposure on Social Media (PBE-SM) Scale*.

Following the development of items, we conducted individual cognitive interviews to examine if the initial scale items adequately captured young people’s encounters with police brutality on social media. Each interview lasted for approximately 30 to 45 minutes via Zoom, and they were digitally recorded and transcribed verbatim using a professional transcription service. Prior to the start of the cognitive interviews, participants completed the PBE-SM independently. Then they responded to several open-ended questions to share their thoughts and understanding of the items. The questions were as follows:

1. Describe your experience in taking the Police Brutality Exposure on Social Media Scale.
2. Did the scale items capture your exposure to police brutality on social media?
3. Were the items clear and easy to understand?
4. Would you suggest any changes be made to this scale?

During this process, we gave them opportunities to offer suggestions on the wording of items, identify redundant or irrelevant items that may need to be omitted from the final survey, and note alternative subject areas. Findings from the cognitive interviews enabled us to refine the initial items, add one item, and add two reference time frames. The final draft of the PBE-SM consisted of 10 items across 5 times frames, displayed in Table 1.

Table 1. The Police Brutality Exposure on Social Media Scale

Below is a collection of different types of police brutality-related content seen on social media. Please report for each question how often you see this type of content on social media platforms (e.g., Facebook, Twitter, Instagram, TikTok, etc.). It does not matter which platforms you see this content, only how often.

	Never	Rarely	Sometimes	Often	Always
<b>[Since the start of the pandemic], how often on social media have you see...</b>					
1. ...live streams or video recordings of police officers harassing, killing, or beating Black individuals?	1	2	3	4	5
2. ...video recordings or images of a victim’s family member(s) in distress immediately after a police officer has killed them?	1	2	3	4	5
3. ...video recording or images of memorials for victims who have been killed by a police officer?	1	2	3	4	5
4. ...Go-fund me links or other donation links in support of the victims who have been killed by a police officer or the victim’s family?	1	2	3	4	5
5. ...petitions in support of the Black Lives Matter movement or against police violence?	1	2	3	4	5
6. ...video recordings or images of the Black Lives Matter protests/rallies?	1	2	3	4	5
7. ...rants about police brutality, the Black Lives Matter movement, or Blue Lives Matter?	1	2	3	4	5
8. ...individuals arguing in support of or against a victim who has been killed by a police officer?	1	2	3	4	5
9. ...memes about the misuse of power among the police?	1	2	3	4	5
10. ...hashtags of victims' names who have been killed by a police officer?	1	2	3	4	5
<b>In the past six months, how often have you seen...</b>					
1. ...live streams or video recordings of police officers harassing, killing, or beating Black individuals?	1	2	3	4	5
2. ...video recordings or images of a victim’s family member(s) in distress immediately after a police officer has killed them?	1	2	3	4	5
3. ...video recording or images of memorials for victims who have been killed by a police officer?	1	2	3	4	5
4. ...Go-fund me links or other donation links in support of the victims who have been killed by a police officer or the victim’s family?	1	2	3	4	5
5. ...petitions in support of the Black Lives Matter movement or against police violence?	1	2	3	4	5
6. ...video recordings or images of the Black Lives Matter protests/rallies?	1	2	3	4	5
7. ...rants about police brutality, the Black Lives Matter movement, or Blue Lives Matter?	1	2	3	4	5
8. ...individuals arguing in support of or against a victim who has been killed by a police officer?	1	2	3	4	5
9. ...memes about the misuse of power among the police?	1	2	3	4	5
10. ...hashtags of victims' names who have been killed by a police officer?	1	2	3	4	5

	Never	Rarely	Sometimes	Often	Always
<b>In the past month, how often have you seen...</b>					
1. ...live streams or video recordings of police officers harassing, killing, or beating Black individuals?	1	2	3	4	5
2. ...video recordings or images of a victim’s family member(s) in distress immediately after a police officer has killed them?	1	2	3	4	5
3. ...video recording or images of memorials for victims who have been killed by a police officer?	1	2	3	4	5
4. ...Go-fund me links or other donation links in support of the victims who have been killed by a police officer or the victim’s family?	1	2	3	4	5
5. ...petitions in support of the Black Lives Matter movement or against police violence?	1	2	3	4	5
6. ...video recordings or images of the Black Lives Matter protests/rallies?	1	2	3	4	5
7. ...rants about police brutality, the Black Lives Matter movement, or Blue Lives Matter?	1	2	3	4	5
8. ...individuals arguing in support of or against a victim who has been killed by a police officer?	1	2	3	4	5
9. ...memes about the misuse of power among the police?	1	2	3	4	5
10. ...hashtags of victims' names who have been killed by a police officer?	1	2	3	4	5
<b>In the event that a Black individual is killed by a police officer, how often on social media do you see...</b>					
1. ...live streams or video recordings of police officers harassing, killing, or beating Black individuals?	1	2	3	4	5
2. ...video recordings or images of a victim’s family member(s) in distress immediately after a police officer has killed them?	1	2	3	4	5
3. ...video recording or images of memorials for victims who have been killed by a police officer?	1	2	3	4	5
4. ...Go-fund me links or other donation links in support of the victims who have been killed by a police officer or the victim’s family?	1	2	3	4	5
5. ...petitions in support of the Black Lives Matter movement or against police violence?	1	2	3	4	5
6. ...video recordings or images of the Black Lives Matter protests/rallies?	1	2	3	4	5
7. ...rants about police brutality, the Black Lives Matter movement, or Blue Lives Matter?	1	2	3	4	5
8. ...individuals arguing in support of or against a victim who has been killed by a police officer?	1	2	3	4	5
9. ...memes about the misuse of power among the police?	1	2	3	4	5
10. ...hashtags of victims' names who have been killed by a police officer?	1	2	3	4	5
<b>A month after that event takes place, how often do you see...</b>					
1. ...live streams or video recordings of police officers harassing, killing, or beating Black individuals?	1	2	3	4	5
2. ...video recordings or images of a victim’s family member(s) in distress immediately after a police officer has killed them?	1	2	3	4	5
3. ...video recording or images of memorials for victims who have been killed by a police officer?	1	2	3	4	5
4. ...Go-fund me links or other donation links in support of the victims who have been killed by a police officer or the victim’s family?	1	2	3	4	5
5. ...petitions in support of the Black Lives Matter movement or against police violence?	1	2	3	4	5
6. ...video recordings or images of the Black Lives Matter protests/rallies?	1	2	3	4	5
7. ...rants about police brutality, the Black Lives Matter movement, or Blue Lives Matter?	1	2	3	4	5
8. ...individuals arguing in support of or against a victim who has been killed by a police officer?	1	2	3	4	5
9. ...memes about the misuse of power among the police?	1	2	3	4	5
10. ...hashtags of victims' names who have been killed by a police officer?	1	2	3	4	5

Once our instrument was edited, we administered the updated version to our full sample. They were directed to a Qualtrics link via email, which contained the PBE-SM. Participants were prompted to complete two screening questions once they were on Qualtrics to confirm their eligibility for the study. The questions were, “Do you identify as Black or African American?” and “Are you a college freshman?” If a participant answered “yes”, they were redirected to the beginning of the survey. If they selected “no”, they will be redirected to a disqualification message. To prevent participants from skipping questions to simply receive compensation, the survey was designed such that a response was required in order to proceed. Although this required participants to respond to all the questions, they were provided with a “not applicable” (N/A) option.

Upon completion of the Qualtrics survey, participants were supplied with a confirmation number, which they are required to submit via email for possible compensation. The confirmation code was modified daily to prevent duplicate submissions. Once the confirmation was received, participants were placed in a random selection pool to receive a \$10, \$50, or \$100 Amazon gift card.

#### 4.3 Data Analysis

We coded the semi-structured interview data by conducting a thematic analysis (Braun et al., 2014). In line with this approach, we began by familiarizing ourselves with the audio and transcript data. We individually listened to each interview, read the transcripts, and then met via Zoom to discuss ideas emerging from the data. During this initial phase, notes were taken on preliminary ideas and codes that described our content. In the second phase, the team assigned codes to data considering whether there was coherence or distinctiveness across each one. In the third phase, we characterized codes into several themes and subthemes, specifically related to the participants' social media engagement, police brutality exposure, perception of law enforcement, and psychological consequences.

After analyses of the semi-structured interviews were complete, we created items based on the themes and subthemes identified. We adopted a similar process to analyze the cognitive interview data. We also conducted descriptive analyses (frequencies, means, standard deviations, and correlations) of responses on the initial items from the seven cognitive interview participants. In order to validate the findings of our narrative analyses, otherwise known as trustworthiness (Creswell, 2019; Lincoln & Guba; 1985), we engaged our participants in a member-checking process. With this approach, participants had the opportunity to evaluate the interpreted data (i.e., transcriptions) from their interview to determine the accuracy in describing their experience. We provided them with copies of the transcriptions via email approximately three weeks after the interview so they could provide clarification on the data shared. They were also given 48 hours to respond. For the first set of interviews, five participants (25%) provided feedback on their interview transcripts, and six of the seven participants (86%) in the cognitive interviews provided feedback. All their responses confirmed that the data transcribed were accurate.

Finally, we conducted exploratory factor analyses (EFA) using principle component extraction with varimax rotation with data from the full sample. The analyses were conducted in R via the Jamovi interface (Jamovi, 2021; R core team, 2020), and were completed for each of the five instruments in the battery separately. Across all items in each of the analyses, assumption checks were confirmed for normality, homoscedasticity, and linearity, while multicollinearity between items yielded an acceptable tolerance and variance inflation factor. Bartlett's test of sphericity was conducted before each analysis ( $p < .05$ ), and missing data points were mean imputed, affecting 0.3% of the data for Instrument 1, 0.66% for Instruments 2, 3, and 4, and 1% for Instrument 5. Following the Kaiser-Guttman Rule, only factors with eigenvalues greater than 1 were retained, with each therefore accounting for at least 5% of the variance in its model; meanwhile, factor loadings for individual items were required to be at least .4 and were considered cross-loaded where this threshold was met for multiple factors (Meyers et al., 2017). Finally, internal consistency was tested using Cronbach's alpha for each scale and subscale as established by the exploratory factor analysis.

## 5. Results

### 5.1 Semi-structured Interviews

Analysis of the first set of semi-structured interviews revealed three salient themes related to the police brutality content Black first-year college students were exposed to on social media. Those themes were: (a) incident-based content, (b) educational/awareness-based content, and (c) opinion-based content. We used pseudonyms to protect the participants' confidentiality.

#### 5.1.1 Incident-Based Content

Of our sample, 16 participants (80%) reported viewing content on a social networking site that contained images, videos, and live streams of individuals in the Black community being shot, killed, or beat up by law enforcement officers. Additional incident-based content included: videos or images of memorials for victims whom a police officer has killed; video or images of a victim's family member in distress immediately after a police officer has killed them; and hashtags of victims' names who have been killed by a police officer.

One participant, Aubrey, spoke in detail about bodycam footage she observed while scrolling through Instagram and Twitter, specifically during Summer 2020. During this period, the media coverage of George Floyd's protests was at its peak (Heaney, 2020). She shared,

Most of the time, that's where I hear about police brutality happening. Especially I would say...last summer in 2020. That was when I saw a lot of past and present police brutality incidents with different people, and people who post the information online will give the story of what happened, provide links to sign petitions, or give different ways to help bring awareness to the situation. For example, Ahmaud Arbery—this isn't a police brutality

case necessarily because of the people who murdered him...one of them was a cop at one point, but not anymore. But it goes the same for any of them. Another case would be Sandra Bland, but I would see a picture or an image of them, just a picture of them living their life. Then the video would normally show the incidents happening until they were killed or injured...or it would be the police's body cam, so the incident shows what happened on there.

Other participants confirmed exposure to similar content on additional sites such as Facebook, TikTok, Snapchat, and YouTube (35%, n =7). One student in particular, Corey, shared details of a ring camera video she had witnessed earlier this year. When asked, "what type of content do you see on social media as it relates to police brutality?" she stated:

So, in the videos, you just see a lot of graphic stuff. Sometimes, you see a lot of police brutality. Basically, you'll see [Black] people being beaten by police officers. You'll see [Black] people being shot by police officers. There was a video of a young boy being tased by a police officer. There's just...and then I've also seen a video of a young boy he was... he got pulled over, and he ran to his house because he was so scared. And so, he was calling out for his dad and stuff like that. But, the police officers chased him and dragged him to the ground, kicking him and beating him all in front of his house.

As Corey continued, she further explained the frequency in which she was exposed to this deleterious content, stating that it overloads her timeline "every day" on "every other post." Her narrative evinced the oversaturation of violence that Black adolescents are regularly exposed to in the media.

### 5.1.2 Opinion-Based Content

Nine participants (45%) described observing content on social networking sites related to rants about police brutality, the Black Lives Matter movement, or Blue Lives Matter; individuals arguing in support of or against a victim whom a police officer has killed; and memes about the misuse of power among the police. Isaiah, an avid Twitter user, spoke about his views on police violence in the media:

It's usually rants. Sometimes it's about people's experiences. Sometimes it's about...on Twitter, and it's usually rants saying, 'I've been a victim of this, here are my thoughts about it'. It's people allocating a safe space. You even have people who are qualified talk about possible remedies.

Skylar, on the other hand, reported viewing content mainly concerned with justice for victims of police brutality or arguments against them:

It will just be people curious, you know? Just stating their opinion—like a photo of it and maybe, or re-posting the video and expressing their own opinion. Some of it will just be like a work of art, showing the victim in a different light, and stating their opinion...or just stating justice for whoever. That's probably the main one—justice or something for [police brutality victim]. I also see a lot of reposts. I would have to say...people just join, you know? Not the bandwagon, but joining onto the movement...and they would repost the videos or excerpts and share their own opinions about it. Good or bad. So, I see both of them.

When questioned further about the difference in the content seen on the social media network sites she uses, Skylar continued:

TikTok is coming up a lot, especially in my generation. And on TikTok—not only are they posting the videos, but they're posting their verbal opinions, not just like writing it out. So they're able to record themselves talking about it, and how hurt they are by it, or how much they don't think it's an issue depending on the person. And then in the comments, people reflect back on that person's opinion as well.

### 5.1.3 Educational/Awareness-Based Content

Content on social media related to education and awareness was reported by eleven of the students (55%). Majority of the responses mentioned content related to infographics with statistics about police violence, donations links (e.g., go-fund me) for police brutality victims, and videos of protests to raise awareness about police brutality. One participant, Thalia, shared her experiences from the summer of 2020:

I remember last 2020, that summer there were a lot of videos going on about when Black people would get shot and killed by the police, beat up. I often see those little infographics when people post statistics about police brutality, but mainly videos. It'll be pictures from protests, things like that.

When asked about the frequency of this content she was viewing on social media, she continued:

Last summer, I would see a lot. It was really draining. That's all you would see when you would go on social media. And now, it's started. I mean...it's not starting up again because it never stopped. But even nowadays, you can see it's getting more frequent than it used to be. So, I'll see a picture. Well, not even new—it could be old stuff that just never got the attention that it should have got in the past when it happened. So, more of the stuff is

coming to light about things that happened in the past.

On the other hand, Kaira had opposing views from Thalia when inquired about the police brutality-related media she is exposed to daily. She stated:

Educational posts, like posts that describe what's going on basically, to kind of keep... I have my own page, so I'm kind of biased, but I make my own educational post about it. So I see my posts all the time, but just more than the posts that I make—just educational posts, people updating you, just this is what happened. And, like your hometown, this is what happened here in Greensboro. It's like...just posting that kind of...just updates me on instances that have happened around.

Kaira noted how passionate she was about being involved in the community, especially given the recent incline of police killings in the media.

### 5.2 Initial Items for the Police Brutality Exposure on Social Media (PBE-SM) Scale

Based on these themes identified from the semi-structured interviews, we created a 9-item self-report instrument that assessed the frequency of exposure to police brutality-related content on social media, called the *Police Brutality Exposure on Social Media (PBE-SM) Scale*. We reviewed the open-ended responses and then drafted items from the responses suitable for a self-report measure. Such an inductive approach was methodologically appropriate because the scale was a first of its kind, and it reflected the language of our participants and their experiences with police brutality (Berry & Cook, 2019; Delgado & Stefanic, 2017). Additionally, because these items were based on the experiences of Black college freshmen, we believe this scale will be particularly applicable to Black adolescents. We were therefore confident of its utility for both research and practical applications.

Consistent with the identified themes, the items covered three major types of police brutality content on social media: incident-based, opinion-based, and educational/awareness-based. The incident-based content (two items) described users' exposure to images, videos, and live streams of individuals in the Black community being shot, killed, or beat up by law enforcement officers. For example, "In the past six months, how often have you seen live streams or video recordings of police officers harassing, killing, or beating Black individuals?" The educational/awareness-based content (four items) included infographics with statistics about police violence, donations links (e.g., go-fund-me) for police brutality victims, and videos of protests to raise awareness about police brutality. In the final sub-category, opinion-based content, all the three items addressed rants about police brutality. A sample item is "In the past six months, how often have you seen rants about police brutality, the Black Lives Matter movement or Blue Lives Matter?"

The scale was intended to capture the frequency of exposure for each instance of content. To capture the "viral" but short-lived nature of social media trends, we measured these nine items with three different time frames (indicated by question stems) that were intended to solicit participants' memory without burdening participants with excessive precision. The first stem involved a recent major social event, the second focused on a medium-term time frame (i.e., past six months), and the third focused on a short-term time frame (i.e., past 30 days). In particular, we intended to elicit participants' longer-term memory by using a major social event as a timing anchor in the first stem. The event was placed in brackets designating that this event could be replaced with another relevant and current event, such as the emergence of a political figure. All items were answered using a 5-point Likert scale (1 = *Never* to 5 = *Always*). We avoided response options with exact numbers such as "10 times or more" or "10 hours or more", as we believed numerical counts were not suitable for measuring social media exposure via self-report. The initial layout of the PBE-SM is provided below. Summary scores were created by summing the items under each time stem. It is expected that researchers or practitioners using this scale could choose to score the time stem that is most relevant for their particular purpose. Examples of participant quotes used to inform the development of the initial quantitative items can be found in Table 2.

- Stem #1: [Since the start of the pandemic], how often on social media have you seen...
- Stem #2: In the past six months, how often have you seen...
- Stem #3: In the past month, how often have you seen...
  1. ...live streams or video recordings of police officers harassing, killing, or beating Black individuals?
  2. ...video recordings or images of a victim's family member(s) in distress immediately after a police officer has killed them?
  3. ...video recordings or images of memorials for victims who have been killed by a police officer?
  4. ...Go-fund me links or other donation links in support of the victims who have been killed by a police officer or the victim's family?



5. ...petitions in support of the Black Lives Matter movement or against police violence?
6. ...video recordings or images of the Black Lives Matter protests/rallies?
7. ...rants about police brutality, the Black Lives Matter movement, or Blue Lives Matter?
8. ...individuals arguing in support of or against a victim who has been killed by a police officer?
9. ...memes about the misuse of power among the police?

Table 2. Quotes for Item Development

Theme	Item	Example/quotes from transcripts
Incident-based content	...live streams or video recordings of police officers harassing, killing, or beating Black individuals?	"I would say in the incident that I would see for posts, it would be a lot of the victims either pleading with the officer, 'Don't hurt me,' or 'I'm not doing anything wrong,' things like that. Or it would be them asking, 'What did I do wrong?' I know, especially in the George Floyd case, he kept telling the officer that he couldn't breathe."
Incident-based content	...video recordings or images of a victim's family member(s) in distress immediately after a police officer has killed them?	"Most of the time, its clips put together of different victims that have, of course, suffered fatal incidents at the hands of the police. I also see a lot of videos and images of the family suffering after their loved one dies. They're not always in the best light, but mostly definitely videos."
Incident-based content	...video recordings or images of memorials for victims who have been killed by a police officer?	"So, like content, I saw a lot of videos of the event, people who were preparing vigils and stuff like that, like the person who, but one of the people who gotten, were killed here in North Carolina, they had a vigil for him."
Educational/awareness-based content	...Go-fund me links or other donation links in support of the victims who have been killed by a police officer or the victim's family?	"Sometimes it's a GoFundMe, there's stuff for people that need help afterwards or stuff like that."
Educational/awareness-based content	...petitions in support of the Black Lives Matter movement or against police violence?	"A lot of the content and language was people were angry and it was in support of the movement. I didn't really see that much language that was against it. There were some people that were questioning the tactics that arose, like how we protested and how we decided to protest. Sometimes those protests were turned violent, or we try to actually separate fact from fiction, even though it's social media. There's a lot of opinion behind that."
Educational/awareness-based content	...video recordings or images of the Black Lives Matter protests/rallies?	"There were videos of the protests about victims of police brutality... Especially the ones that actually died. And yeah, that was mainly what the content was and that was usually what was shown."
Opinion-based content	...rants about police brutality, the Black Lives Matter movement, or Blue Lives Matter?	"Some comments and rants where they'll justify the reasoning for the person's death. They'll have something that's very irrelevant to the victim and they'll explain, 'Oh, well this is the reason why they've been killed' or people will be like, 'Oh, you need to respect your officers, they're here to protect us' and stuff like that. It seems to be very ignorant comments."
Opinion-based content	...individuals arguing in support of or against a victim who has been killed by a police officer?	"I would see Black people expressing their opinions about how... If you can watch the video just obvious that it was uncalled for, and you would see that. But then I would also see white people in the thread talking about how they would try to make up some excuse for the police officers doing what they did. So basically, I would see Black people... I mean, it's not all white people that would say that, but you would see majority of them, and it would be going back and forth and about it."
Opinion-based content	...memes about the misuse of power among the police?	"I would see pictures and memes of side-by-side police brutality currently versus in the '60s and then a comparison to slavery"

### 5.3 Cognitive Interviews

Responses from the second set of cognitive interviews unveiled key information related to (a) the content of the scale items, (b) necessary changes to the items, and (c) the feasibility of the PBE-SM. The results of these interviews are provided below.

#### 5.3.1 Content of Scale Items

Participant responses indicated that the PBE-SM Scale items were representative of Black college-aged youth's

exposure to police brutality on social media. Participants also revealed something akin to a spiral effect in the immediate impact of viewing police brutality online on Black adolescents, which could lead to taking on an impulse response where they actively seek out social media to participate in and learn about activism. In particular, the historical context and the issues of police brutality became more familiar to some participants over time, such as Nicole and Addison. When inquired about their overall thoughts of our survey instrument, Nicole shared memories from her participation in activism activities. She disclosed, "It was giving me this flashback, like wow, there was a lot going on during the beginning of the pandemic, because I was really involved in it. I was at all the different protests in my city or in my hometown and stuff like that." Addison, on the other hand, discussed her consistent exposure to police misconduct. She noted that police brutality is often seen on social media "more than anywhere else since the pandemic", so she expects to see a new event happening on her timeline each week.

Despite identifying themselves as frequent social media users, Aurora and Chris had dissenting opinions about police brutality on social media when compared to other participants. In both instances, participants noted the absence of media coverage on police killings of Black people after completing our survey instrument. Their comments offer insight into different information flows on social media that provide incomplete representations of police brutality in real-time. Media coverage, especially from mainstream social media outlets like Twitter, Instagram, and Facebook, is critical to Black Lives Matter activists and allies who seek redress for police killings of Black people (Nix et al., 2017; Freelon et al., 2018). In the current political climate, social media has become a primary means for organizing and spreading awareness about police brutality; however, the absence of coverage can be attributed to individuals using algorithms to curate newsfeeds with stories in opposition to the Black Lives Matter movement (Davidson et al., 2019; Sap et al., 2019).

### 5.3.2 Changes to Scale Items

The inconsistent nature of participants' exposure to police brutality on social media guided us in developing additional time stems for the PBE-SM related to police killings in the Black community. Nick, in particular, was eager to share his thoughts on adjusting the scale items:

If anything, you should add the wake of an event. Because what you've already created on your own, what you got...it shows you a timeline of how much you've seen that, as a Black person or a non-Black person, you either support or don't support. So, if you support it, it's obvious—you know that the attention on what you support is decreasing. That's what you already created with your scale. You can already tell that the attention has been brought down. And basically, whatever y'all were trying to accomplish or who was trying to accomplish it, is not working in the best way possible, as far as social media goes.

Nick's portrayal of police brutality in the media confirmed that the network built around Black Lives Matter on social media outlets is conducive to broadly distributing and circulating information (Freelon et al., 2018). Even though social media is a fluid network, the omnipresence of the Black Lives Matter movement was able to dominate other organizations' messages on these platforms, especially during Summer 2020 (Heaney, 2020). Luke continued to offer suggestions on question stems regarding the media exposure of police brutality weeks after an incident has occurred:

You want to give it some time for people to actually talk. For people to actually think, 'okay, they talked about this situation, and they started to go through the trial with that situation' and 'alright...now how much am I actually hearing them talk about [police brutality]' Then, you can bring this stuff to their attention about what happened and what the details are.

Additionally, several participants (43%) reported the absence of hashtag content when questioned about changing the current scale items. One participant in particular, Luke, noted the importance of hashtags in the wake of police brutality on social media:

[Hashtags] made me honestly feel as if [police brutality] was being brought to everybody's attention. Because you were seeing it all the time, like 24/7. No matter if you get on Instagram, Snapchat, Facebook, Twitter, wherever it is, you're seeing something about Black Lives Matter protests and everything else that came with it. So, it really made me feel like it had attention at that time.

### 5.3.3 Final Survey Draft

Based on participant feedback, we made three revisions to the PBE-SM. First, we added the question stem, "In the event that a Black individual is killed by a police officer, how often on social media do you see..." A related question stem was also included: "A month after that event takes place, how often do you see..." These questions were suggested by four participants (57%) and incorporated to capture realistic social media exposure of police violence. Additionally, we added the item "...hashtags of victims' names who have been killed by a police officer?" Hashtags are used on social media networks to highlight keywords, enabling users to find and join conversations on a particular topic.

5.4 Exploratory Factor Analysis

For each instrument, all ten items were submitted to an EFA as described above, with the factor loading coefficients for each item described in Table 3. Using the criteria described above, Instrument 1, which pertained to police brutality *since the start of the pandemic*, produced a two-factor solution, retaining eight out of the original ten items. The first factor, accounting for 16.53% of the total variance for the instrument, included four items that tap perceptions of the symbolism of police brutality through images, video, or memes; meanwhile, the second factor, accounting for 17.67% of the variance, constitutes four items that reflect perceptions of activism in response to police brutality.

The second and fourth instruments, which take *the past six months* and *memories of specific events in which a Black individual was killed by a police officer* as their respective timeframes, both produced one-factor solutions. Both instruments retained all ten items, which seem to load onto a factor measuring perceptions of police brutality overall, accounting for 48.77% of the variance in the model for Instrument 2 and 30.71% for Instrument 4.

Table 3. Orthogonal (Varimax) Rotated Factor Loadings for Exploratory Factor Analyses, Police Brutality Exposure on Social Media Scale

Instrument Factor	1		2	3			4	5	
	1	2		1	2	3		1	2
Eigenvalue	1.32	1.41	4.88	1.32	1.25	1.37	3.07	1.51	1.23
(% variance)	(16.53)	(17.67)	(48.77)	(13.16)	(12.53)	(13.66)	(30.71)	(25.16)	(20.44)
1. ...live streams or video recordings of police officers harassing, killing, or beating Black individuals?	0.62	-	0.68	0.59	-	-	0.58	0.49	
2. ...video recordings or images of a victim's family member(s) in distress immediately after a police officer has killed them?	0.52	-	0.7	-	0.77	-	0.59	-	-
3. ...video recording or images of memorials for victims who have been killed by a police officer?	0.53	-	0.72	0.6	-	-	0.52	0.48	
4. ...Go-fund me links or other donation links in support of the victims who have been killed by a police officer or the victim's family?	-	0.4	0.62	-	-	0.64	0.47	-	-
5. ...petitions in support of the Black Lives Matter movement or against police violence?	-	0.6	0.69	-	-	0.49	0.56	-	-
6. ...video recordings or images of the Black Lives Matter protests/rallies?	-	0.67	0.69	-	0.55	-	0.48	-	0.77
7. ...rants about police brutality, the Black Lives Matter movement, or Blue Lives Matter?	-	0.59	0.71	-	-	0.58	0.58	0.72	-
8. ...individuals arguing in support of or against a victim who has been killed by a police officer?	-	-	0.72	0.66	-	-	0.58	-	0.69
9. ...memes about the misuse of power among the police?	0.56		0.73	-	0.43	-	0.54	0.72	-
10. ...hashtags of victims' names who have been killed by a police officer?	-	-	0.72	-	-	0.58	0.63	-	-

Note: Factor loadings < .4 and cross-loadings with coefficients ≥ .4 for multiple factors were not retained and are omitted

Instrument 3, which asks participants about *the past month*, also retains all ten items; in this case, they appear to load onto three distinct factors, reflecting that there are three separate signals in the data produced by them. The first factor includes three items and accounts for 13.16% of the variance; these items center the victim of police brutality. Meanwhile, the second factor, accounting for 12.53% of the variance, includes three items that tap the broader impact of police brutality on the victim's family and society. The third factor includes four items focusing on activism in response to police brutality, and accounts for 13.66% of the variance.

The final instrument, Instrument 5 that asks about *the month after a police brutality event*, yielded a two-factor solution and retained only six of the original ten items. The first factor, involving four items and accounting for 25.16% of the variance, relates to visual and written representations of the police brutality itself. Meanwhile, two items load onto the second factor, accounting for 20.44% of the variance, and appears to focus on activism.

To assess the internal consistency reliability for the scales and subscales as established by these EFA analyses, Cronbach's alphas were calculated for each. For Instrument 1, the first subscale's alpha was .33, and the second subscale's alpha was .36; likewise, the composite internal consistency for this instrument was .46. The alpha for Instrument 2 was .88, suggesting the consistency among these items is sufficiently reliable. The internal consistency for the first subscale of Instrument 3 was .33, .24 for the second subscale, and .36 for the third subscale, while the composite internal consistency among all the items of this instrument was .47. The ten items of Instrument 4 yielded an alpha of .75, suggesting acceptable internal consistency among them. The first subscale of Instrument 5 produced an internal consistency of .46, while the second subscale was .29, and the instrument overall was .47. Overall, the internal consistency for Instruments 2 and 4 suggests an acceptably reliable signal across their respective items, while Instruments 1, 3, and 5 all produced low levels of internal consistency. However, these latter three instruments are multidimensional according to the above EFAs, and as such their items are split among multiple data signals; meanwhile, the EFAs suggest the former two instruments are unidimensional, where all their respective items load onto the same data signal. This means Instruments 1, 3, and 5 will require increased power, relative to Instruments 2 and 4, to produce comparable estimates of internal consistency. While the results of these reliability analyses suggest further research will be needed to investigate the internal consistency for three of our instruments, while already supporting the internal reliability of the other two, this is consistent with the factor structure established by the EFAs.

Table 4 provides the descriptive statistics and correlations between the overall scores for each of the instruments in the battery, all of which are positively correlated with each other. Within Instrument 1, the first subscale ( $M = 12.01$ ,  $SD = 1.95$ ) was correlated with the second ( $M = 12.12$ ,  $SD = 2.07$ ) subscale ( $r = 0.24$ ,  $p < .0001$ ). For Instrument 3, the first subscale ( $M = 6.1$ ,  $SD = 1.64$ ) and the second subscale ( $M = 6.20$ ,  $SD = 1.6$ ) were correlated ( $r = 0.15$ ,  $p = .01$ ), the first and third ( $M = 8.23$ ,  $SD = 1.98$ ) subscales were correlated ( $r = 0.2$ ,  $p < .001$ ), and the second and third subscales were also correlated ( $r = 0.18$ ,  $p = .002$ ). The first subscale of the fifth instrument ( $M = 8.02$ ,  $SD = 2.13$ ) was correlated with the second ( $M = 4.03$ ,  $SD = 1.35$ ) subscale ( $r = 0.19$ ,  $p < .001$ ).

Table 4. Descriptive Statistics and Pearson Product Correlation Coefficient Matrix, Police Brutality Across Social Media Scales

Instrument	N	Mean	SD	1	2	3	4
1	299	24.13	3.16				
2	298	15.7	4.69	0.60***			
3	298	20.52	3.48	0.38***	0.51***		
4	298	20.87	5.10	0.50***	0.76***	0.43***	
5	297	12.05	2.73	0.33***	0.53***	0.33***	0.51***

Note. \*\*\*  $p < .0001$

## 6. Discussion

Our qualitative findings showed that Black adolescents' attitudes and perceptions are particularly pliable with their immersion in social media. Social media, which first emerged in the 2000s, has the power to affect social change in society and has cemented itself as an indispensable mode of communication among today's youth (Sihvonen, 2015). Current generations have become accustomed to utilizing social media as a source of information and entertainment. The scope and use of social media have reached unprecedented levels (Statista, 2021), allowing individuals to have a voice, and spread the information that they feel is both relevant and important. This has led to explosive growth in social media posts which are typically fast paced and short. These posts are often accompanied by images and videos that contain real-time and cutting-edge information, which users continue to share even after being exposed to it. With an increase in overall social media usage among young people (Auxier & Anderson, 2021), there has been growing concern regarding the amount of traumatic and violent messages on these platforms, including police brutality.

The high-profile nature of police-related killings in the Black community induced disproportionate consequences among Black adolescents, especially those that left audio-visual recordings on social media platforms. To better understand their exposure to various forms of social media content associated with these events, we developed a scale to examine the extent to which Black college-aged youth encounter police brutality on social media. After conducting semi-structured interviews with a sample of Black first-year college students, we created self-report items for the scale and refined the scale based on cognitive interviews with a separate sample. This iterative and grounded process resulted in an efficient self-report survey scale relevant to the target population and demonstrated preliminary evidence of feasibility. As is indicated by the design of the scale, the intensity and relevance of Black adolescents' exposure to

police brutality on social media depended on the reference time frame. This is critical because it recognizes the different ways that this pervasive issue affects Black adolescents and allows for intervention possibilities on social media platforms. Content related to police brutality on these platforms is often triggered by events or educational messages shared by other users. These posts are distressing to Black adolescents because it represents degrading acts of violence against Black people by police. Still, the amount of the exposure to such posts is likely to be fluid given their “viral” or “wavy” nature of social media content. That is, a large number of posts related to a certain topic could overwhelm social media in a short period of time and subside quickly. On the other hand, the amount and frequency of exposure is likely to be a result of characteristics of the user (i.e., whether it is someone who actively and continually seeks out information or is someone who passively receives information). As such, there is a broad and flexible utility for this scale because it captures the nature of the content itself, the intensity of exposure, and the reference time frame of exposure. Indeed, the preliminary data provided by the cognitive interview participants showed that the frequency of their exposure to police brutality on social media varied by its timing. As expected, the students in the full sample had increased exposure since the start of the pandemic, considering that the media coverage of George Floyd’s protests was at its peak (Heaney, 2020). Another peak exposure time frame was in the event of a police-related killing, which can be attributed to the algorithms used to curate newsfeeds on trending topics (Davidson et al., 2019; Sap et al., 2019).

The exploratory factor analyses revealed the factor structure for each of the five instruments, demonstrating some initial psychometric evidence of construct validity. It was imperative to avoid collinearity between items, as the dynamic nature of social media exposure necessitated a nuanced approach to capture the evolving perceptions of Black adolescents. The multifaceted construct of exposure to police brutality on social media demanded a careful consideration of the temporal aspects, prompting the inclusion of each instrument.

The decision to structure the assessment battery with five nested time stamps serves a dual purpose. Firstly, it acknowledges the inherent challenges in meeting the statistical assumptions for EFA when assessing the entire construct as a unified entity. By dividing the assessment into five instruments, each probing a specific time frame, we address the potential violation of assumptions related to the homogeneity of factor loadings and collinearity patterns across different temporal contexts. This approach allows for a more accurate representation of the nuanced variations in Black adolescents’ perceptions of police brutality on social media over time. Secondly, the fluid nature of information dissemination on these platforms implies that the same events can elicit varying levels of exposure at different points in time. By maintaining consistency in items across instruments, we facilitate a direct comparison of Black adolescents’ responses to the same content over different time frames. This not only enhances the reliability of the measurement tool but also allows for a deeper exploration of how their perceptions and attitudes evolve in response to repeated exposure.

The inclusion of five nested time stamps aligns with the iterative and grounded development process of the scale. It recognizes the variability in the nature and intensity of exposure to police brutality on social media, providing a comprehensive tool for researchers, educators, and practitioners. The EFAs conducted on each instrument revealed distinct factor structures, emphasizing the importance of considering temporal nuances in assessing this complex phenomenon. While the instruments share overall correlations, the nested timescales capture subtle differences in perceptual organization, demonstrating the utility of this multifaceted approach in understanding the impact of social media on Black adolescents’ well-being.

The constructs that emerge in the different factor structures between the instruments may reflect the memory encoding patterns for the varying timeframes. For example, Instrument 3, which reflects experiences of police brutality in the most recent past, yields the most granular structure that suggests access to detailed memory focusing on the victims themselves, the broader impact of police brutality on family and society, and activism. The data signal(s) emerging from other instruments might suggest memory storage is prioritizing information under different constructs. These findings illustrate the utility of situating the same ten items in a battery where each instrument probes a different timeframe; while the instruments are all correlated overall, the nested timescales each appear to break down into subtle differences in perceptual organization according to the factor structures. The internal consistency reliability analysis was indicative of the factor structure indicated by the EFAs; further research is needed to examine the consistency among the items for the instruments that turned out to have multidimensional structures to achieve comparable statistical power to the ones with a unidimensional structure. Likewise, confirmatory factor analyses in future research are required to test further the factor structures established in the present study.

## **7. Limitations and Future Directions**

In this study, we created an innovative assessment tool with great potential to be used by researchers and practitioners alike. However, our study is not without limitations. Because our study sample solely consisted of Black college undergraduates, the results may not be generalizable to other age groups or youth with different educational backgrounds. Our results should therefore be interpreted with caution. In future studies, we plan on using the scale in

other demographics, especially for Black adolescents not enrolled in college, to establish external validity (Shadish et al., 2002). Furthermore, it's important to acknowledge the potential for bias inherent in self-report data, which represents another limitation of our study. Self-report measures rely on participants' subjective perceptions and interpretations of their experiences, which can be influenced by various factors such as social desirability bias or cultural norms. In the context of our assessment tool, participants may have provided responses that they believed were expected or socially acceptable, rather than reflecting their true thoughts or behaviors. This could impact the accuracy and reliability of the data collected, potentially skewing the results and conclusions drawn from the study. To address this limitation, future research should consider incorporating multiple methods of data collection, such as observational or behavioral measures, to triangulate findings and enhance the validity of the assessment tool. Additionally, exploring alternative modes of administration, such as interviews or focus groups, may provide deeper insights into participants' experiences and mitigate the potential bias associated with self-report data. By adopting a multi-method approach, researchers can minimize the impact of self-report bias and strengthen the credibility of their findings. Another limitation stems from the lack of racial diversity in the study. It is imperative to investigate how our assessment tool functions across diverse racial groups to ensure its effectiveness and relevance across different populations. Understanding whether the PBE-SM operates similarly across racial groups or requires adaptations for cultural nuances is crucial for its utility and validity in various settings. Additionally, exploring the experiences and perspectives of individuals from different racial backgrounds can shed light on any biases or limitations inherent in the assessment tool. This comprehensive approach to validation will enhance the tool's robustness and applicability in addressing the needs of diverse communities, ultimately advancing equity and inclusivity in research and practice.

Researchers, educators, and counselors can use this scale to generate information on how Black adolescents are influenced by the media surrounding police brutality in real-time. For college counselors, such information would allow them to recognize a period when students may have increased exposure. In addition, college counselors may note how certain vicarious experiences of police brutality can change over time with the wax and wane of media coverage triggered by major social events. This can allow college counselors to ask specific questions that help Black adolescents understand how different levels of exposure influence their feelings, thoughts, and behaviors. Counselors could also guide students in managing stress or anxiety by monitoring short-term social media exposure to police brutality when such incidents become "viral." Moreover, such tools might help educators create effective strategies to promote positive social media use in the future (Lu et al., 2018). For example, using a social media platform instead of a learning management system (e.g., Blackboard) may help educators to facilitate class discussions. This is achieved by posting questions on a course-specific social media account and inviting students to contribute to the conversation, engaging remote learners and non-traditional students.

To conclude, given the salience of social media use among Black adolescents, the PBE-SM provides a new framework for understanding Black adolescents' exposure to police brutality on social media, especially among college students. We believe it will be a valuable tool for researchers and practitioners whose goal is to improve the psychological well-being of Black adolescents.

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### **Authors contributions**

All authors contributed equally to the conceptualization, design, and execution of this study. Furthermore, each author played an integral role in analyzing the data, interpreting the results, and refining the methodology. In writing the manuscript, all authors contributed equally, providing valuable insights, reviewing and editing the content, and ensuring its coherence and accuracy. All authors read and approved the final manuscript.

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**Data sharing statement**

No additional data are available.

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