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CONTEXTUAL RISK AND PROTECTIVE FACTORS ASSOCIATED WITH
POSTTRAUMATIC STRESS SYMPTOMS FOLLOWING EXPOSURE TO TRAUMA
by

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A Thesis

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Abstract

Ample evidence supports the relationship between trauma exposure and posttraumatic stress symptoms (PTSS), with less research on factors that may influence the expression of PTSS following adversity and even fewer studies focused on racial minority samples. Utilizing the Person-Environment Interaction Model (Slaug, Iwarsson, & Björk, 2018), the current study examined the role of individual (e.g., ethnic identity), relational (e.g., social support), and environmental (e.g., community cohesion and community disorder) factors potentially associated with PTSS following lifetime trauma exposure among emerging adults of racial minority status ($N = 203$). Participants were 18 to 25 ($M_{age} = 20.27$, $SD = 1.95$), were predominantly women (84%), and largely self-identified as Black or African American (60%). A hierarchical multiple regression indicated that greater social support was related to lower PTSS. Results highlight the importance of racial minority-focused research and the need for social support to be integrated into treatment protocols following exposure to adversity.

Keywords: Cumulative violence, Person-Environment Interaction Model, social support, ethnic identity, community cohesion, community disorder, PTSS, minorities

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Introduction

By emerging adulthood, most individuals in the United States (i.e., between 58% and 90%) will experience at least one potentially traumatic event (Gamache Martin, Van Ryzin, & Dishion, 2016; Javidi & Yadollahie, 2012). The risk of trauma exposure is heightened among racial and ethnic minorities, with persons of color experiencing more PTSD-qualifying events than their White counterparts (Alegría et al., 2013; Lester, Artz, Resick, & Young-Xu, 2010; Roberts et al., 2010). Emerging adults who experience trauma are at increased risk for mental health difficulties, namely posttraumatic stress symptoms (PTSS), with higher likelihood of negative mental health outcomes among individuals of racial minority status (Copeland, Keeler, Angold, & Costello, 2007; Sternthal, Jun, Earls, & Wright, 2010; López et al., 2017). Contextual risk and protective factors (e.g., social support, community cohesion, community disorder, and ethnic identity) may be related to PTSS following trauma exposure (Johns et al., 2021; McGuire et al., 2016). Specifically, one's environment and the ways in which they interact with their environment may be associated with psychopathology (Barr et al., 2011; Folger & Wright, 2013). Utilizing this contextual perspective, the current study examined the unique associations between individual, relational, and environmental factors and PTSS among emerging adults of racial minority status exposed to various traumatic events.

Lifetime Trauma Exposure and Posttraumatic Stress

Young people in the United States (i.e., youth and young adults) are at considerable risk for violence and trauma exposure (Eitle, & Turner, 2002; Scarpa, 2003). Over 700,000 children experience childhood victimization each year via physical or emotional neglect, physical, emotional, or sexual abuse, or domestic violence exposure, with neglect and physical abuse being the most frequently reported types of maltreatment (Children's Bureau, 2017). Further,

approximately 11% of children in the United States experience a serious illness or injury, serious accident, or natural disaster during their lifetime (Copeland et al., 2007).

Youth are most likely to experience traumatic events in the home or in a family setting; however, trauma exposure among young adults is more likely to occur within a romantic relationship or in the community (i.e., neighborhood in which one lives and interacts; Children's Bureau, 2017; Scarpa, 2003). While adversity can be common in childhood, the risk of trauma exposure persists throughout the life course, with individuals experiencing an average of 3.2 traumatic events in their lifetime (Kessler et al., 2017). Though interpersonal trauma (i.e., rape, other sexual assault, being stalked, the violent or unexpected death of a loved one) is less common than other types of trauma (i.e., accident, illness, injury, or natural disaster), it produces the most deleterious effects (Kessler et al., 2017).

While individuals tend to survive these traumatic events, their health is often adversely affected (Catani et al., 2008). For example, exposure to a serious illness or injury is a potentially traumatic event within which higher perceived severity, poor prognosis, and illness status result in more significant PTSS outcomes (Devine et al., 2010). Experiences of natural disasters may also lead to poor mental health outcomes, with severity and effects of the disaster, direct impact of the trauma, and pre-existing characteristics being most predictive of PTSS (Furr, Comer, Edmunds, & Kendall, 2010; McFarlane & Van Hooff, 2009). Additionally, individuals may experience symptoms of PTSS following a traumatic transportation accident, even months or years after the accident transpired (O'Donnell, Creamer & Ludwig, 2008). The loss of a loved one may also increase individuals' risk for mental health difficulties through feelings of fear, dysphoria, low self-esteem, and strained interpersonal connections (Currier, Holland, & Neimeyer, 2007). Violent trauma often presents the highest risk for PTSS, with rape and the

violent death of a loved one being most predictive of this form of psychopathology as compared to non-violent traumatic events (i.e., illness, injury, natural disaster, or accident; Copeland, et al., 2007; McDevitt-Murphy et al., 2012).

Community Violence Exposure and Posttraumatic Stress

Community violence is associated with the defining characteristics of trauma, including death, threatened death, actual or threatened injury, or actual or threatened violence via direct exposure or witnessing the trauma (American Psychiatric Association, 2013; Mohammad, Shapiro, Wainwright, & Carter, 2014). Youth and young adults are frequently exposed to community violence, with up to 80% of children and adolescents reporting exposure to crime, violence, or abuse in their community and between 76% and 96% of young adults endorsing either community violence victimization or witnessing community violence (Barr et al., 2011; Bell & Jenkins, 1993; Eitle, & Turner, 2002; Scarpa, 2003; Stein et al., 2003; Sternthal et al., 2010). Past research shows a significant link between experiencing community violence and subsequent PTSS (Barr et al., 2011 Scarpa, 2003). Additionally, community violence, as compared to witnessing or hearing about violence in the home, is more predictive of PTSS (Fowler et al., 2009).

Cumulative Trauma Exposure

Compounded lifetime trauma is consistently associated with high levels of psychopathology, as greater levels of trauma exposure have a significant additive effect on the severity of mental health outcomes (Agorastos et al., 2014; Frazier et al., 2009; Hodges et al., 2013). Both unanticipated, singular traumatic events and longstanding, repeated trauma present different risks for the development of PTSS, such that cumulative trauma is more likely to lead to feelings of anger, despair, dissociation, and avoidance (Davies & Flannery, 1998; Holt,

Buckley, & Whelan, 2008; Turner, Finkelhor, & Ormrod, 2006). Individuals who are exposed to violence in the home are more likely than those not exposed to domestic violence to experience polyvictimization (i.e., the experience of more than one victimization) via other types of violence in the community or other settings, resulting in higher risk for various deleterious outcomes, including PTSS (Osofsky, 1999; Mrug, Loosier, & Windle, 2008; Turner, Shattuck, Finkelhor, & Hamby, 2016). Community violence exposure may be compounded by other lifetime trauma exposure, which is predictive of greater PTSS (McFarlane & Van Hooff, 2009; Mohammad, Shapiro, Wainwright, & Carter, 2014; Scarpa, 2003).

While the experience of one traumatic event increases the likelihood of PTSS, cumulative trauma exposure magnifies this outcome (Saunders & Adams, 2014). Specifically, exposure to multiple types of trauma presents more complex trauma-related symptoms such that individuals endorsing 4 or more traumatic events display greater morbidity and dysfunction (Hodges et al., 2013; Karam et al., 2013). Previous research has indicated the need for compounded trauma-focused studies given that cumulative trauma during childhood and emerging adulthood are associated with more complex mental health difficulties throughout development compared to adulthood trauma alone (Cloitre et al., 2009). Additionally, when assessing PTSS, all lifetime trauma (i.e., PTSD-qualifying events and community violence exposure) should be examined to garner a comprehensive understanding of one's trauma history and to provide more accurate measurement of trauma-related symptoms' prevalence (McFarlane & Van Hooff, 2009).

Racial Minority Status, Trauma Exposure, and Posttraumatic Stress

The current study focuses specifically on trauma exposure and PTSS among racial minorities because persons of color report more significant trauma exposure than their White counterparts. Specifically, while persons identifying as Caucasian are more likely to experience

traumatic events, persons identifying as African American and/or Hispanic are more likely to experience violent traumatic events, placing these individuals at greater risk for the negative effects of trauma, including PTSS (Alegría et al., 2013; Roberts et al., 2010). Further, persons identifying as Hispanic or non-Hispanic Black endorse greater experiences of polyvictimization and PTSS compared to those identifying as non-Hispanic White (López et al., 2017). This disproportionate trauma exposure presents significant risk for mental health difficulties among persons of color as compared to White individuals.

Different races and ethnicities may display varied reactions to lifetime trauma (Widom et al., 2012), with individuals self-identifying as racial minorities experiencing more negative mental health outcomes following trauma, including PTSS (8.7% lifetime prevalence), than their White counterparts (7.4% lifetime prevalence; López et al., 2017; Williams & Sternthal, 2010). Though racial and ethnic minorities are often subject to higher risk of enduring trauma and trauma-related symptoms, participation in mental health services presents various challenges among these persons for a variety of reasons (Alegría, Vallas, & Pumariega, 2010; Cook et al., 2013; Lester, Artz, Resick, & Young-Xu, 2010; López et al., 2017; Spont, Hodges, Murdoch, & Nugent, 2009). A common issue regards access to and quality of care available in predominantly non-White communities (Alegría et al., 2010; Cook et al., 2013). Although trauma exposure and trauma-related symptoms are more common among all racial minorities, PTSS is most frequently reported among African American individuals, with more severe symptomatology reported by trauma-exposed Hispanic persons (Asnaani et al., 2010; Davidson, Price, McCauley, & Ruggiero, 2013; Marshall, Schell, & Miles, 2010).

Contextual Risk and Protective Factors

Trauma can be a debilitating experience that poses significant risk for poor mental health outcomes (Bonfils et al., 2018). However, many individuals display minimal PTSS following trauma due to various individual, relational, and environmental protective factors (Folger & Wright, 2013). Previous research has emphasized the importance of accounting for such contextual risk and protective factors when assessing the impact of trauma exposure such that individual, family, community, and societal factors should be considered as these variables may contribute to variations in one's response to trauma (Barr et al., 2011). Specifically, an individual's positive relationships with their community (i.e., community cohesion), social network (i.e., perceived social support from friends, family, and/or significant others), and personal identity (i.e., ethnic identity) may be associated with better mental and physical health outcomes and well-being following traumatic events (Bruce & Waedle, 2008; Flannery, 2007; Hakulinen et al., 2016; Johns et al., 2012; Lee & Goldstein, 2015; McGuire, 2016; Pluut, Ilies, Curşeu, & Liu, 2018). Conversely, community disorder, characterized by deviance and dilapidation in the community, can negatively affect one's mental health (Smith & Patton, 2016). Additionally, poor community cohesion, lack of social support, and less ethnic identity can also contribute to poor mental health outcomes following adversity (Hakulinen et al., 2016; Johns et al., 2012; Lee & Goldstein, 2015; McGuire, 2016; Pluut, Ilies, Curşeu, & Liu, 2018). The current study aims to build upon this knowledge by examining the unique risk and protective roles of individual, relational, and environmental contextual factors related to PTSS in a sample of emerging adults of racial minority status by including all constructs in one model.

Person-Environment Interaction Model

The Person-Environment Interaction Model posits that, when examining mental health problems (i.e., PTSS), contextual (i.e., individual and relational) and environmental variables (i.e., the person-environment interaction) should be considered as potentially influential (Slaug, Iwarsson, & Björk, 2018). This model suggests that a more comprehensive understanding of the relationship between trauma and PTSS can be garnered by assessing aspects of the person, environment, and interactions or relationships between the person and environment (Kristof-Brown, 2017; Neufeld et al., 2006; Slaug, Iwarsson, & Björk, 2018). Previous trauma-related studies have typically focused on how individual and environmental factors separately affect mental health outcomes (Bruce & Waelde, 2008; Fagan, Wright & Pinchevsky, 2013; Folger & Wright, 2013). The current study expands upon past research by utilizing the Person-Environment Interaction Model to analyze the impact of unique individual (i.e., ethnic identity), relational (i.e., perceived social support), and environmental (i.e., community cohesion and community disorder) factors on PTSS among racial minority emerging adults exposed to potentially traumatic events (Slaug, Iwarsson, & Björk, 2018).

Aspect of the Individual: Ethnic Identity. Ethnic identity is defined as belongingness to one's ethnic group such that one displays interest in learning about and commitment to their ethnicity (Phinney & Ong, 2007). This construct is recognized as a vital component of one's self-concept and well-being (Grant, 2008; Smith & Silva, 2011). Research is relatively limited on the association between ethnic identity and PTSS (Flannery, 2007; Johns et al., 2012; McGuire, 2016). Generally, ethnic identity has been shown to be positively related to psychological health (Grant, 2008; Smith & Silva, 2011). For example, Bruce and Waedle (2008) found that lower ethnic identity was associated with trauma-related and externalizing symptoms; further, ethnic

identity was shown to serve a greater protective role among ethnic minorities compared to Caucasians, as ethnic identity is typically less salient and central to the majority group (Grant, 2008). Additionally, greater ethnic identity has been linked to well-being, especially in adolescents and young adults of color, with a stronger relationship to positive well-being than compromised well-being (Smith & Silva, 2011). Thus, ethnic identity may be a key resource in healing following trauma among individuals from diverse ethnic groups. Previous research has further noted that experiences of discrimination and racial victimization were related to an increased sense of ethnic identity among racial and ethnically diverse children, adolescents, and emerging adults such that ethnic identity may serve as a protective factor against the negative effects of racial discrimination and victimization (Neblett, Rivas-Drake, & Umaña-Taylor, 2012; Pieterse et al., 2010). Specifically, minority college students reporting more frequent discrimination than White students also reported greater commitment to and involvement with their racial group (Pieterse et al., 2010). Additionally, greater perceptions of discrimination on a college campus were associated with increased life stressors and trauma exposure (Pieterse et al., 2010). While race and ethnic identity have shown strong links to PTSS, little research exists on the role of ethnic identity in understanding the severity of PTSS.

Person-Environment Relationship: Social Support. Social support has often been identified as a protective factor in mitigating the negative effects of trauma exposure (Flannery, 2007; McGuire, 2016; Ososfsky, 1999). Specifically, both familial and friend social support have been linked to a reduction in PTSS following trauma (Folger & Wright, 2013; McGuire, 2016). Familial social support is especially beneficial for those contending with life stressors, as increased family support can serve as a buffer against further trauma exposure (Barr et al., 2011). Notably, the quality of the familial relationship is an important factor in the association between

social support and PTSS in that poor parent-child communication and a lack of trauma and life stressor disclosure may diminish the robustness of this relationship (Bolen & Gergely, 2014). Similarly, social connectedness, defined by friend support, group involvement, trust, and a sense of belonging, is related to PTSS such that low connected individuals are more likely to experience severe to very severe PTSS (McDermott, Berry, & Cobham, 2012). Though social support has been shown to act as a protective factor in coping with stressful or traumatic life events, little research has been conducted to examine cultural differences in the benefits of social support. However, research has indicated that some racial minorities (African Americans and Asian Americans) are reluctant to seek social support in times of stress or crisis due to their concern about the potentially negative impact that such behaviors may have on their relationships (Kim, Sherman, & Taylor, 2008). Yet, individuals of minority status may be more likely than White individuals to benefit from social support without disclosing the source of their stress or trauma (Kim, Sherman, & Taylor, 2008). Though victimization occurs at a higher frequency and is associated with more deleterious outcomes in racial minority populations, social support has been shown to not only serve as an adaptive coping strategy but also buffer against further victimization (Button, O'Connell, & Gealt, 2012).

Aspects of the Environment: Community Cohesion and Community Disorder.

Limited research on trauma and PTSS has focused on macro-social factors, such as community cohesion and community disorder (Johns et al., 2012). In other areas of research, neighborhood and community factors have been associated with psychopathology (Gapen et al., 2011). Specifically, neighborhoods characterized by low community cohesion are associated with more negative outcomes for their residents facing various life stressors (Abada, Hou, & Ram, 2007; Fagan, Wright, & Pinchevsky, 2013; Johns et al., 2012). Previous research has demonstrated an

association between social context and PTSS, such that those living in a neighborhood with low community cohesion reported greater PTSS than those reporting high community cohesion (Johns et al., 2012). Abada, Hou, and Ram (2007) indicated that a lack of racial diversity within communities and a lack of community cohesion increases risk for poor mental health for racial minorities. Conversely, high community cohesion protects against negative outcomes for those living in communities with a greater concentration of individuals of minority status.

Community disorder, or a neighborhood characterized by community dilapidation and deviance, presents an increased risk for exposure to community violence (Duncan, 1996; Gorman-Smith, & Tolan, 1998). Community disorder may be associated with racial segregation, as some White individuals may use their privilege to live in more advantaged neighborhoods, while individuals of racial minority status are more likely to live in more disadvantaged urban communities characterized by greater community disorder (Krivo, Peterson, & Kuhl, 2009). Individuals living in communities characterized by disorder are more likely to report exposure to crime and violence, as well as subsequent experiences of PTSS (Goldner, Peters, Richards, & Pearce, 2010; Krivo, Peterson, & Kuhl, 2009; Smith & Patton, 2016). Community cohesion and community disorder-related research is limited; however, existing studies have demonstrated a link between environmental factors (i.e., community cohesion and community disorder) and PTSS (Gapen et al., 2011).

Demographic Risk and Protective Factors

Age, gender, and income are each associated with PTSS in previous research (Javidi & Yadollahie, 2012; McGuire, 2016; Roberts et al., 2010). Though PTSS can develop at any age, symptoms are most common in emerging adults, as this developmental stage presents more instability and change than any other life stage. Further, emerging adults are more likely to

experience PTSD-qualifying events during this developmental period (Arnett, Žukauskienė, & Sugimura, 2014; Javidi & Yadollahie, 2012). Prevalent trauma during emerging adulthood can compound previous trauma, producing greater risk for trauma-related symptoms (Holt, Buckley, & Whelan, 2008). In their college-student sample, Frazier and colleagues found that most emerging adults (85% of college students) report at least one lifetime traumatic event (2009). These findings emerge across races and ethnicities (Lipsky et al., 2015). Furthermore, PTSS is associated with the amount of time that has passed since the traumatic experience such that symptomatology typically decreases as time passes (Breslau, 2009).

Although men are more likely to experience potentially traumatic events in general, women are more likely to experience violent, PTSD-qualifying events, such as sexual assault and physical assault (Javidi & Yadollahie, 2012; McGuire, 2016). Further, after accounting for type of trauma endured, women are twice as likely as men to develop PTSS (Breslau, 2009; Javidi & Yadollahie, 2012). Additionally, PTSS is more common among women, as compared to men, following experiences of interpersonal violence (Alisic et al., 2014).

Differences in PTSS are also influenced by income disparities such that higher income can serve as a protective factor against negative outcomes following trauma (McGuire, 2016). Moreover, individuals living in poverty are among those who are least likely to recover from PTSS across development (McGuire, 2016). This disparity may be due to the lack of access to resources in low income areas which could hinder recovery following trauma (McDevitt-Murphy et al., 2012).

Current Study

Utilizing the Person-Environment Interaction Model as a guiding framework, the current study investigates the relationship between contextual variables (i.e., individual, relational, and

environmental) and PTSS following emerging adult of minority status' exposure to various types of trauma. This study aims to fill gaps in the literature by integrating individual (i.e., ethnic identity), relational (i.e., perceived social support), and environmental (i.e., community cohesion and community disorder) factors as they relate to PTSS. While these variables have previously been analyzed separately in relation to PTSS (Bruce & Waedle, 2008; Folger & Wright, 2013; Gapen et al., 2011), the present study builds upon past literature by integrating these constructs into one model. This study provides valuable contributions to the literature by assessing a racial and ethnic minority sample exposed to compounding trauma via PTSD-qualifying events and community violence exposure. Thus, results may inform treatment approaches for individuals who are less likely to seek treatment and more likely to experience PTSD-qualifying events and subsequent PTSS as compared to White individuals (Alegría, Vallas, & Pumariega, 2010; Alegría et al., 2013; Asnaani et al., 2010; Cook et al., 2013; López et al., 2017; Marshall, Schell, & Miles, 2010; Roberts et al., 2010; Spoont et al., 2009).

It is hypothesized that (1) younger participants self-identifying as women and reporting lower income will endorse more PTSS, (2) while accounting for demographic variables, more frequent trauma exposure will be associated with greater PTSS, (3) while accounting for demographic and trauma frequency variables, increased ethnic identity, higher perceived social support, greater community cohesion, and lower community disorder will be related to lower PTSS among trauma exposed emerging adults.

Method

Participants

Participants included 203 emerging adults of color attending universities in the US Midsouth and Midwest. Participants ranged in age from 18 to 25 ($M_{age} = 20.27$, $SD = 1.95$) and

were predominantly women (84%). The sample represented a variety of races, with 60% self-identifying as Black or African American, 14% as biracial or multiracial, 13% as Asian, and 13% as other minority races, including American Indian, Pacific Islander, and Middle Eastern. All participants reported at least one traumatic event, with more than half of participants (64%) endorsing 2-5 PTSD-qualifying events in their lifetime ($M = 3.56$, $SD = 2.39$). More than half of the participants (61%) reported a yearly family income of less than \$50,000 ($M = 5.19$, $SD = 3.29$). Nearly all participants (98%) endorsed full-time student status.

Procedure

Following IRB approval at both participating universities, participants self-selected to take part in the study through an online university psychology subject pool system. All study procedures were completed online and identical at both universities. Prior to initiating the survey, participants were presented with an informed consent outlining steps taken to protect their privacy and confidentiality. Participants were also informed that they could skip questions or end participation early without penalty. Following survey completion, which took approximately 1.5 hours, participants were provided with a list of local mental health resources and received course credit as compensation for their time and effort.

Measures

Demographics. Participants completed a brief demographics questionnaire regarding their age, sex, race, and family income.

Posttraumatic stress symptoms. The PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013) is a 20-item self-report measure that assesses participants' PTSS severity over the past month based on their self-selected most traumatic event. Symptoms assessed include avoidance (e.g., "Avoiding memories, thoughts, or feelings related to the stressful experience?"), intrusion

(e.g., “Repeated, disturbing dreams of the stressful experience?”), negative mood and cognitions (e.g., “Having strong negative feelings such as fear, horror, anger, guilt, or shame?”), and change in arousal and reactivity (e.g., “Being “super alert” or watchful or on guard?”). Responses ranged from 0 (*Not at all*) to 4 (*Extremely*) based on past month symptoms. Responses were summed to generate a total score ranging from 0 to 80, with higher scores indicating higher symptom severity. The PCL-5 has demonstrated strong internal consistency ($\alpha = .94$), test-retest reliability ($r = .82$), convergent validity ($r_s = .74$ to $.85$), and highly variable to good discriminant validity ($r_s = .31$ to $.60$; Blevins et al., 2015). Cronbach’s alpha for the current study was $.95$.

Lifetime trauma exposure. The Life Stressor Checklist—Revised (LSC-R; Wolfe et al., 1997), is a 30-item self-report inventory that assesses traumatic or stressful life events. Participants responded yes/no regarding if an event had occurred at any point in their lifetime. Examples of events included serious disaster, such as an earthquake, hurricane, large fire, or explosion; sudden or unexpected death of a loved one; and a very serious accident or accident-related injury. For endorsed events, participants completed follow-up questions regarding the age at which the event began, the age at which the event ended, if they believed they were in harm’s way, if they experienced feelings of helplessness, fear, or horror, as well as how much the event has affected them in the past year. Participants were asked to respond on a scale from 1 (*Not at all*) to 5 (*Extremely*) when asked about how much the traumatic event has impacted them in the past year. For the current study, only PTSD-qualifying events (identified using DSM-IV-TR criteria for PTSD) were included in analyses (American Psychological Association, 2013). Test-retest reliability has demonstrated Kappa values of $.70$ (Norris & Hamblen, 2004). Internal reliability was not calculated for this measure because participants may experience one

potentially traumatic event without necessarily experiencing another, so LSC-R items need not be related.

Community violence exposure. A 35-item adapted version of the Survey of Exposure to Community Violence (SECV; Richters & Saltzman, 1990) scale was utilized in the current study. Specifically, this self-report measure assessed gang association, exposure to selling drugs, witnessing or experiencing a home break-in, witnessing or experiencing a police arrest, witnessing or experiencing threats of physical harm, witnessing or experiencing physical assault, mugging, sexual assault, molestation or rape, exposure to someone carrying or holding a weapon, hearing a gun fired in or near the home or experiencing or witnessing a gunshot, seeing a dead person in the community, or witnessing a homicide. Eighteen items, including experiencing a mugging or being beat up, witnessing others being chased by gangs or older kids, personally experiencing or witnessing a serious accident, witnessing domestic or interpersonal violence, experiencing or witnessing sexual assault or rape, and experiencing or witnessing physical assault with a weapon, were removed from the original measure as these constructs were assessed via other measures included in the dataset. Sample items included the following: “How many times have you yourself been chased by gangs or individuals?”, “How many times have you yourself actually been beaten up or mugged?”, and “How many times have you seen or heard a gun fired in your home?” (Richters & Saltzman, 1990). Responses range from 1 (*Never*) to 9 (*Almost every day*). Items were summed to produce a total score measuring frequency of community violence, with scores ranging from 0-315. The SECV measure has demonstrated strong internal consistency among young adult samples with alpha values ranging from .55 to .65 regarding community violence victimization and .72 to .81 regarding witnessing community violence (Scarpa et al., 2002; Scarpa, 2003). Cronbach’s alpha for the current study was .92.

Ethnic Identity. The Multigroup Ethnic Identity Measure-Revised (MEIM-R; Phinney & Ong, 2007) is a 6-item assessment of ethnic identity. The scale is preceded by an open-ended question in which participant's self-identify their ethnic group. Six close-ended items then assess exploration of (e.g. "I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.") and commitment to (e.g. "I have a strong sense of belonging to my own ethnic group.") one's ethnic identity on a 5-point scale which ranged from 1 (*Strongly disagree*) to 5 (*Strongly agree*) (Phinney & Ong, 2007). A total score was generated by averaging all item values. Prior research has indicated good reliability, with internal consistency alpha values ranging from .81 to .89 for the overall scale (Phinney & Ong, 2007; Yoon, 2011). Cronbach's alpha for the current study was .88.

Social support. The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) is a 12-item self-report assessment of perceived social support from family (e.g. "I get the emotional help and support I need from my family"), friends (e.g. "I can count on my friends when things go wrong."), and significant others (e.g. "I have a special person who is a real source of comfort to me."). Responses were rated on a 7-point Likert scale from 1 (*Very strongly disagree*) to 7 (*Very strongly agree*). Responses were summed then averaged to create a mean total score (ranging from 12-84). Previous research indicates strong internal reliability for the mean total scale (total scale $\alpha=.88$; Zimet et al., 1988). Cronbach's alpha for the current study was .93.

Community Cohesion. The Community Cohesion Scale (CCS) is a 6-item measure adapted from the Social Cohesion and Trust Scale developed by Sampson, Raudenbush, and Earls (1997). CCS items assessed participant's safety and unity within their neighborhood (e.g., "Your neighborhood is a safe place to live"; "You live in a close-knit neighborhood") with

responses ranging from 1 (“*Strongly disagree*”) to 4 (“*Strongly agree*”). The original measure included 5 items, but an additional item was added to capture a general sense of neighborhood safety (i.e., “Your neighborhood is a safe place to live”). A total score was created by summing the 6 items. The Social Cohesion and Trust scale has previously demonstrated strong psychometric properties, with alpha coefficients ranging from .77 to .83 (Chen et al., 2015; Maguire-Jack & Showalter, 2016). In the present study, Cronbach’s alpha was .81.

Community disorder. The Community Disorder Scale (CDS; Cutrona et al., 2000), a 9-item measure, assessed neighborhood appearance via the Community Dilapidation subscale and Community Deviance subscale. Participants were asked to respond to items questioning whether children in the neighborhood have nowhere to play but the street, the closest playground is well maintained, vacant or deserted buildings present a problem for the community, drinking occurs in public, people are seen selling or using drugs, groups of people are hanging out and causing trouble, gang violence presents a problem in the neighborhood, and the extent to which there is trash or broken glass on the streets, or graffiti on buildings and walls. Responses ranged from 1 (*Strongly disagree*) to 4 (*Strongly agree*). Items were summed to create a total score and subscale scores. Only the total score was used in the current study. The CDS has demonstrated high internal consistency ($\alpha=.79$; Cutrona et al., 2000). Cronbach’s alpha for the current study was .90.

Data Analytic Plan

Hierarchical linear regression modeling was conducted using IBM SPSS version 25.0 to assess the influence of cumulative trauma exposure and contextual risk and protective factors on PTSS among emerging adults of color. Based on established hierarchical multiple regression standards, general demographic variables were entered in the first model, trauma-frequency

related variables were added in the second model, and the final model included contextual risk and protective factors, which were the key focus of the current study. Specifically, demographic factors (i.e. sex, income, and age) were included in Model 1, trauma-related variables (i.e. frequency of trauma and community violence exposure) were added in Model 2, and contextual factors (i.e. ethnic identity, social support, community disorder, and community cohesion) were added in Model 3. For data analyses, sex was dichotomized as men/women. Those who did not identify as men or women ($n=2$) were removed from the sample. G*Power 3.1 was used to calculate power based on the study's sample size and number of independent variables. The power analysis indicated that the study was adequately powered ($\alpha = .05$, $ES = .95$, $1 - \beta = .95$). Further, there was no evidence of multicollinearity among all independent variables and the outcome ($VIF < 2$; Tabachnick & Fidell, 2013).

Results

Participants' developmental stage at the time of their first PTSD qualifying event varied, with the most frequently reported developmental stage being late childhood (i.e., ages 6-10; 34%). The most frequently reported traumatic events were the expected loss of a loved one (54%), the unexpected loss of a loved one (52%), and emotional abuse or neglect (41%). Additional descriptive statistics are provided in Table 1, along with the intercorrelations among continuous study variables.

Findings from the hierarchical linear regression model are presented in Table 2. Statistical significance was determined based on $p < .05$. The first model containing demographic variables was not significant. The second model, which added trauma-related variables, was significant, $F(5, 197) = 18.71$, $p < .001$, $R^2 = .31$, with income ($\beta = -.14$, $p = .022$), cumulative trauma exposure ($\beta = 0.44$, $p < .001$) and community violence exposure ($\beta = 0.18$, p

= .006) significantly related to PTSS. This model accounted for 31% of the variance in PTSS. In this model, higher levels of PTSS were related to lower income, more frequent trauma exposure, and greater community violence exposure. Contextual risk and protective factors were added in the third and final model. This model was significant, $F(9, 193) = 14.32, p < .001$, accounting for 37% of the variance in PTSS. Cumulative trauma exposure ($\beta = 0.35, p < .001$), community violence exposure ($\beta = 0.15, p = .018$), and perceived social support ($\beta = -0.29, p < .001$) were significantly related to PTSS. Specifically, higher posttraumatic stress symptoms were associated with experiencing more frequent trauma, experiencing more community violence, and reporting lower levels of social support. Results partially support the study hypotheses given that more trauma exposure and less perceived social support were related to higher PTSS; however, sex, income, age, ethnic identity, community cohesion, and community disorder were not related to PTSS, which was contrary to expectations.

Discussion

The current study examined associations between individual, relational, and environmental contextual risk and protective factors and PTSS among trauma-exposed, emerging adults of color. Specifically, ethnic identity, perceived social support, community cohesion, and community disorder were analyzed in relation to PTSS, while accounting for demographic and trauma-related factors. To examine these relationships, the Person-Environment Interaction model was utilized in order to expand upon past literature by assessing the unique impact of contextual factors in a racial minority sample (Slaug, Iwarsson, & Björk, 2018). Based on previous studies' attention to trauma exposure and mental health disparities among racial minority individuals, the present study offers a unique perspective with its exclusive focus on

lifetime trauma in a racial minority sample (Alegría et al., 2013; Asnaani et al., 2010; López et al., 2017; Roberts et al., 2010; Widom et al., 2012).

Based on past literature, the current study hypothesized that specific demographic variables (i.e., sex, age, and income) would be associated with higher rates of PTSS, such that younger age, lower income, and female sex would be related to greater PTSS. Contrary to expectations, none of these demographic variables were related to PTSS in this sample. Though income was a significant predictor of PTSS in initial models, the relationship did not remain stable in the final model, which was inconsistent with previous research and the current hypothesis (McDevitt-Murphy et al., 2012; McGuire, 2016). McDevitt-Murphy et al. (2012) noted that quality mental health resources are not regularly available in low income areas. However, college campuses typically provide free mental health resources for students, such that no matter one's income, treatment is available. Thus, a college-student sample may mitigate the effects of lower income on PTSS. Additionally, all participants in the current study were currently enrolled in a University which presumably indicates moderate financial stability. Severely low-income or poverty levels were not common in the present sample, thus the relationship between income and PTSS may not be as salient in this set of participants. Previous research suggests that women are more likely to experience PTSD-qualifying events and thus are more likely to report PTSS (Breslau, 2009; Javidi & Yadollahie, 2012; McGuire, 2016). Though women are more likely to experience PTSS, they are also more likely to seek mental health treatment which may make the relationship between sex and PTSS less salient in the current sample. Additionally, as mental health awareness increases, the stigma towards mental health diagnoses decreases (Sontag-Padilla et al., 2018). This shift may contribute to a reduced disparity between the sexes in reporting trauma-related symptoms. Age may not have been significantly

related to PTSS in the current study as the sample lacked variance in age as it was limited to emerging adult college students ($M_{age} = 20.27$), ranging from 18-25 years old. Though PTSS is most common among emerging adults, PTSS is also associated with the time since trauma (Arnett, Žukauskienė, & Sugimura, 2014; Breslau, 2009; Javidi & Yadollahie, 2012).

Participants reported their most significant traumatic event during late childhood, thus trauma-related symptomatology may have subsided by emerging adulthood. Moreover, past research shows that as mental health awareness increases in University settings, individuals may be more likely to become aware of and seek treatment for trauma-related symptoms, which may have contributed to the non-significant findings related to demographic variables (Sontag-Padilla et al., 2018).

It was hypothesized that more frequent trauma exposure via reports of lifetime PTSD-qualifying events and community violence exposure would be related to greater PTSS. Results indicated that both greater reports of lifetime trauma and greater community violence exposure were associated with increased reports of PTSS, which is consistent with past research and supports the trauma-related hypothesis. These findings contribute to existing literature which highlights the relationship between compounding trauma and PTSS (Agorastos et al., 2014; Frazier et al., 2009; Hodges et al., 2013; Holt, Buckley, & Whelan, 2008; Mohammad et al., 2014; Turner, Finkelhor, & Ormrod, 2006; Turner et al., 2016). These results further emphasize the importance of assessing cumulative trauma (i.e., lifetime trauma and community violence exposure) when analyzing PTSS among racial minorities. The current study highlights the relationship between trauma exposure and PTSS expanding the literature by assessing how the frequency of different types of trauma relate to symptomatology in individuals of racial minority

status. Further, past literature has not focused on cumulative trauma specifically among persons of color as research typically examines either lifetime trauma or community violence exposure.

Finally, it was hypothesized that contextual risk and protective factors, the key focus of the current study, would be associated with PTSS. Specifically, greater ethnic identity, higher perceived social support, and increased community cohesion were expected to be related to lower levels of PTSS while higher community disorder was expected to be associated with higher PTSS. In line with expectations, more perceived social support was related to less PTSS. This relationship is consistent with past literature which suggests that high-quality social support protects against trauma exposure and negative trauma-related outcomes (Barr et al., 2011; Bolen & Gergely, 2014; Flannery, 2007; McGuire, 2016). To date, there is little research on the relationship between higher perceived social support and lower PTSS in minority samples (Button, O'Connell, & Gealt, 2012; Kim, Sherman, & Taylor, 2008). As participants in the current study are individuals of minority status, study results contribute to a growing body of literature examining minority health disparities. Greater focus on the factors related to PTSS among persons of color may contribute to alleviating the racial differences in mental health diagnoses and treatment. Specifically, as social support was related to PTSS in the current sample, individuals of racial minority status may benefit from fostering relationships with family, friends, and significant others. Social support may aid in alleviating specific posttraumatic stress symptoms (e.g., social isolation, loneliness, emotional detachment, and feelings of mistrust or hostility). Though some minorities are less likely to engage in social support following trauma or other adversity, persons of color may be more likely to benefit from support from friends, family, or significant others during times of stress or crisis than their White counterparts (Kim, Sherman, & Taylor, 2008).

Contrary to expectations ethnic identity, community cohesion, and community disorder were not significantly related to PTSS in the current sample of trauma-exposed emerging adults of color. Ethnic identity has been shown to serve as a protective factor in trauma-exposed minorities in buffering the negative effects of trauma (Grant, 2008; Bruce & Waedle, 2008). Although ethnic identity may serve as a key resource in healing from trauma, the relationship between ethnic identity and PTSS is not evident within the current study. While ethnic identity was high among participants ($M = 3.87$, $SD = 3.64$), the lack of racial variance (i.e., only 4 racial identities reported) in the current sample may have contributed to the non-significant findings in that the relationship between ethnic identity and PTSS may not have been clear without a lower ethnic identity comparison group (i.e., presumably White individuals). Additionally, community cohesion and community disorder were not related to PTSS in the current study. Though community-level factors have been shown to be associated with mental health outcomes in past research, these findings were not consistent within this sample of trauma-exposed, racial minority emerging adults (Fagan, Wright, & Pinchevsky, 2013; Gapen et al., 2011; Johns et al., 2012). Participants' college student status in the current sample may have contributed to the null findings related to community-level variables and PTSS in that there is potentially less of a sense of community in university settings than in one's home or childhood neighborhood. Participants may have been referring to their current college community when considering community cohesion and community disorder, which could have produced lower scores for these constructs. Although these findings did not support the contextual variable-related hypothesis, past research is limited in this area, thus, researchers should continue to explore the relationship between environmental factors and PTSS.

Clinical Implications

A variety of clinical implications emerge from the current study that should be considered when working with trauma-exposed emerging adults of racial minority status. Specifically, findings highlight the importance of accounting for violence frequency and targeting PTSS among trauma-exposed persons of color in order to provide effective, comprehensive care. Findings suggest that clinicians should consider assessing lifetime trauma via comprehensive measurement tools that include assessments of violence at home, in the community, and at various points in the lifespan in order to fully capture one's trauma profile. As research shows differences in PTSS across racial groups, clinicians should be mindful of how minority status may influence symptomatology. Clinicians should provide culturally appropriate psychoeducation and therapeutic techniques and account for racially motivated traumatic experiences. Given that perceived social support was significantly related to PTSS following trauma, quality social support from family, friends, and/or significant others may contribute to reduced trauma-related symptomology. Further, social support could be fostered by teaching interpersonal skills utilizing dialectic behavioral therapy and social skills training. The importance of healthy and stable social support may be especially salient during transitory life stages such as emerging adulthood. Thus, social support may be a key resource in reducing PTSS and should be fostered in clinical and intervention settings.

Strengths and Limitations

This study benefitted from its inclusion of individual, relational, and environmental factors in one comprehensive model, its assessment of compounding, lifetime trauma, and its focus on racial minority participants. Though this study offers many strengths, there are several limitations that should be considered when interpreting findings. The data is cross-sectional

which limits causal interpretation between contextual variables and PTSS. Additionally, retrospective recall was required for several of the study measures. While some measures queried participants about their current feelings or behaviors, other measures required that participants recall past-month symptomatology (Weathers et al., 2013) and past trauma-related details (Wolfe et al., 1997). This retrospective recall may create response bias and hinder accuracy in reporting. Trauma experiences were dichotomized into “yes/no” categories and summed to create a trauma frequency score which limits event-specific details including timing, severity, and frequency of each type of trauma (Richters & Saltzman, 1990; Wolfe et al., 1997).

Moreover, participants completed all aspects of the study online via self-report measures which could also contribute to reporting bias (e.g., acquiescence bias, extreme responses, response fatigue). Self-reporting could have also presented a risk of social desirability as some items were sensitive in nature as they captured mental health-related symptoms and trauma history which could have prevented participants from providing fully honest responses.

As participants were recruited from US Midwest and US MidSouth universities, the study lacks broad sampling which affects external validity. Further, most of the sample identified as female, Black or African American, and were all currently attending college. As previous research has noted variance across race and sex in PTSS, it is possible that this lack of racial and gender diversity could have skewed the results (Alegría et al., 2013; Alisic et al., 2014; Breslau, 2009; Javidi & Yadollahie, 2012; López et al., 2017; Roberts et al., 2010).

Future Research Directions

Considering study limitations, future researchers should utilize a longitudinal design to allow for causal associations between contextual risk and protective factors and PTSS. Further, assessing contextual risk and protective factors, trauma experiences, and PTSS across time may

illuminate how patterns change across time and highlight the potentially important role that developmental stage might play in these relationships. Though the present study benefitted from assessing trauma frequency across settings and measurement tools, trauma reporting would be enhanced by assessing the timing, frequency, and severity of each event; thus, a more comprehensive exploration of lifetime trauma exposure is warranted. Additionally, although the current study was strengthened by its focus on compounding trauma, it may be helpful to examine associations between study variables as related to specific traumatic events.

While the current study offers a unique perspective by assessing contextual risk and protective factors among emerging adults of racial minority status, future studies should include a more balanced proportion of racial and ethnic groups, as this sample was predominantly African American with few individuals identifying as members of other racial groups. Also, future research that includes a larger sample may offer more nuanced information on the relationships between study variables and PTSS. As social support was associated with PTSS, it would be beneficial for future researchers to take a deeper look at this construct to explore how support from different sources (i.e., family, friends, significant others) may influence PTSS. Finally, future researchers should more widely disseminate the survey to a sample with greater diversity in sex, race, education level, and age to allow for increased generalization.

Conclusions

Given the prevalence of lifetime trauma exposure and its negative effects on mental health, it is necessary to understand how contextual variables may be associated with posttraumatic stress. The present study used the Person Environment Interaction Model to explore associations between individual, relational, and environmental factors and PTSS among trauma-exposed, racial minority young adults. Results emphasize the importance of social

support as it was the only contextual factor related to PTSS in this sample. Additionally, both lifetime trauma frequency and community violence exposure were associated with greater PTSS. Taken together, these findings highlight the protective role of social support in racial minorities following trauma and the need for a greater focus on racial minority research in an effort to reduce mental health disparities.

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Appendix A

Table 1. Means, Standard Deviations, and Correlations among Continuous Study Variables

	1	2	3	4	5	6	7	8
1. PTSS	1	-	-	-	-	-	-	-
2. Age	-.02	1	-	-	-	-	-	-
3. Traumatic Events	.52***	.08	1	-	-	-	-	-
4. Community Violence Exposure	.37***	.10	.41***	1	-	-	-	-
5. Ethnic Identity	.02	-.10	.15*	.12	1	-	-	-
6. Perceived Social Support	-.41***	.03	-.28***	-.14*	.20**	1	-	-
7. Community Cohesion	.26***	-.01	.18*	.31***	.03	-.08	1	-
8. Community Disorder	-.22**	-.03	-.14*	-.17*	.17*	.29***	-.55***	1
<i>M</i>	23.39	20.27	3.56	49.42	3.87	63.09	16.39	17.58
<i>SD</i>	19.13	1.95	2.39	33.44	.89	15.97	6.86	3.75

Note. $N = 203$. * $p < .05$. ** $p < .01$. *** $p < .001$

Appendix B

Table 2. *Summary of Hierarchical Regression Analysis Examining Associations with Posttraumatic Stress Symptoms*

Variable	Posttraumatic Stress Symptoms				
	β	T	Adj. R ²	ΔR ²	F
Model 1			.02	---	2.60
Sex	.20	1.42			
Age	-.01	-.11			
Yearly Family Income	-.17	-2.47*			
Model 2			.31	.29	18.71***
Sex	.06	1.05			
Age	-.06	-1.07			
Yearly Family Income	-.14	-2.31*			
Cumulative Trauma	.18	2.81**			
Community Violence Exposure	.44	6.75***			
Model 3			.37	.06	14.32***
Sex	.08	1.44			
Age	-.04	-.77			
Yearly Family Income	-.09	-1.44			
Cumulative Trauma	.15	2.38*			
Community Violence Exposure	.35	5.41***			
Ethnic Identity	.00	.04			
Perceived Social Support	-.29	4.58***			
Community Cohesion	.02	.32			
Community Disorder	.10	1.39			

Note. N = 203

p* < .05. *p* < .01. ****p* < .001