

Strengths-Based Factors Related to Post-Traumatic Stress Problems in Black Youth with High Body Weights

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Abstract

Objective: Black youth with high body weights [BYHW; Body Mass Index (BMI) \geq 95th percentile] endure unique stressors (e.g., exposure to discrimination due to race and size) that may contribute to psychopathology. Factors that decrease mental health problems associated with these stressors have been underexamined in BYHW. The current study assessed how multisystemic resilience, weight-related quality of life (QOL), and discrimination were associated with post-traumatic stress problems in BYHW from the perspective of youth and their caregivers.

Methods: A total of 93 BYHW and one of their primary caregivers were recruited from a Midsouth children's hospital. Youth ranged in age from 11 to 17 years ($M_{\text{age}}=13.94$, $SD=1.89$), were mostly girls (61.3%), and had CDC-defined BMI scores above the 95th percentile. Nearly all caregivers were mothers (91.4%; $M_{\text{age}}=41.73$ years, $SD=8.08$). Youth and their caregivers completed measures of resilience, discrimination, weight-related QOL, and post-traumatic stress problems.

Results: Utilizing linear regression modeling, the youth model was significant [$F(3, 89)=31.63$, $p<.001$, Adj. $R^2=.50$], with higher resilience ($\beta=-.23$; $p=.01$) and lower discrimination ($\beta=.52$; $p<.001$) associated with fewer post-traumatic stress problems. The caregiver regression model was also significant [$F(2, 90)=10.45$, $p<.001$, Adj. $R^2=.17$], with higher weight-related QOL associated with lower post-traumatic stress problems ($\beta=-.37$; $p<.001$).

Conclusions: Findings illustrate differences in youth and caregiver perceptions of factors related to post-traumatic stress problems in BYHW. Youth emphasized both internal and external contributors to stress, while caregivers focused on internal variables. Such knowledge could be harnessed to develop strengths-based interventions that address health and well-being among BYHW.

Keywords: African American youth; discrimination; obesity; resilience; stress problems

Introduction

Despite national efforts to develop prevention programs, more than 20% of youth have a body mass index (BMI) at or above the 95th percentile (Bohnert et al., 2020; Fryar et al., 2020). Moreover, rates of high body weight¹ are higher in Black youth relative to the national average, with 24.2% of Black youth being classified as having a high body weight (Fryar et al., 2020). Youth with high body weights may experience physical (e.g., facets of cardiometabolic disease), psychological (e.g., depression), and psychosocial (e.g., low self-esteem) difficulties that persist into adulthood (Pizzi & Vroman, 2013; Xu & Xue, 2016). Research also suggests that high body mass may be associated with increased stress (Hackman et al., 2016; Nieman & LeBlanc, 2012). More specifically, youth with high body weights may experience weight-associated challenges (e.g., internalized weight stigma; Puhl & Latner, 2007) and weight-related discriminatory experiences (i.e., unfair treatment due to body size; Puhl &

King, 2013) that could be particularly distressing and result in post-traumatic stress problems (Braun et al., 2022). Post-traumatic stress problems represent psychological difficulties that arise in response to experiences of trauma (Achenbach & Rescorla, 2007) and impact health over time (McFarlane, 2010). Black youth likely endure traumatic stressors due to racial discrimination and oppression (Carter, 2007), which have been linked to heightened post-traumatic stress problems (Bird et al., 2021; Carter et al., 2020). Thus, the intersection of high body weight and being Black-identified may result in post-traumatic stress problems. Notably, theoretically informed studies assessing variables associated with less distress in this population are limited. The current study addressed this research gap by examining how strengths-based factors are related to fewer post-traumatic stress problems as reported by help-seeking BYHW and their caregivers.

Resilience theory (Zimmerman et al., 2013) provides a framework for conceptualizing post-traumatic stress problems and how BYHW function within the context of their intersecting marginalized identities. In this model, resources are defined as factors residing outside of the individual (e.g., support systems) and assets are factors residing within the individual (e.g., self-esteem; Zimmerman et al., 2013).

¹ We have chosen to use the term “high body weight” rather than “obesity” to avoid the use of stigmatizing language, given term preferences of people living with high body weights (see Puhl, 2020).

Resources can be examined using the multisystemic resilience model (Ungar, 2021; Ungar & Liebenberg, 2011). This model describes the individual, relational, and contextual resources available to youth and highlights a young person's ability to navigate toward and obtain these needed resources. Assets can be viewed as weight-related quality of life (QOL; i.e., the impact of weight-specific functioning on well-being), which has been associated with adaptive outcomes (Kolotkin et al., 2006). Specifically, more positive quality of life has been linked to improve physical and social functioning in youth. By categorizing multisystemic resilience as a resource and weight-related QOL as an asset through the lens of Resilience theory, this study centered the role of strengths in the context of post-traumatic stress problems among help-seeking BYHW.

Resilience and Weight-Related QOL in Youth with High Body Weights

Although the empirical literature frequently highlights risk factors that contribute to poor health outcomes in Black youth, these youth also have resources that facilitate resilience (Miller & MacIntosh, 1999). Definitions of resilience have varied across the literature. The present study defined resilience as one's ability to navigate toward and obtain needed resources (Ungar & Liebenberg, 2011). Past research has shown a connection between resilience and positive adjustment (Sulimani-Aidan, 2018), as well as lower stress problems among Black youth (Jones, 2007). For example, Austin et al. (2022) linked facets of resilience (e.g., perceptions of embedded achievement) to fewer emotional and conduct problems following stressful experiences among African American youth. Although this study highlighted resilience as a resource, it focused solely on race-related resilience. This restricted conceptualization of resilience may not fully capture strengths across the social ecology that could be essential to the functioning of BYHW. The current study expanded on this work by exploring resilience resources across the social ecology. Additionally, we examined assets (i.e., weight-related QOL) and their associations with post-traumatic stress problems.

The association between weight-related QOL and post-traumatic stress problems among youth with high body weights has received little attention in the literature. Weight-related QOL captures weight-specific, health-related quality of life by assessing how weight might impact physical comfort, body esteem, social life, and family relations (Kolotkin et al., 2006). During adolescence, youth may become hyperaware of their body size and weight and notice how they may look different from, and be treated differently than, their peers (Lawler & Nixon, 2011). These experiences can lead to body dissatisfaction, low self-esteem, and a limited social life, all of which have been linked to lower weight-related QOL (Puhl & King, 2013). Little work has evaluated the direct relation between weight-related QOL and post-traumatic stress problems among BYHW. In line with Resilience theory (Zimmerman et al., 2013), higher weight-related QOL constitutes an asset linked to diminished stress problems and has been identified as a mutable target for intervention (Kolotkin et al., 2006).

Perspectives of Youth Functioning

Previous research has examined factors associated with youth stress problems by primarily using youth self-report data (Edwards et al., 2008). Despite the benefits of youth self-report (Rebok et al., 2001), it is useful to consider other informants, such as caregivers, who can provide complementary information by offering their own perspectives on youth functioning (De Los Reyes et al., 2016). Caregivers may possess in-depth knowledge that could guide their ability to understand youth wellbeing (Godoy et al., 2019). Thus, it is valuable to examine youth functioning from multiple perspectives as differences between youth and their caregivers may be useful to comprehensively understand stress problems (Cohen et al., 2010).

Current Study

BYHW are systematically exposed to weight- and race-related discriminatory experiences that may contribute to heightened post-traumatic stress problems (Bird et al., 2021; Braun et al., 2022; Carter et al., 2020). Most research has examined how post-traumatic stress problems are associated with poorer health outcomes, with less work focused on strengths and positive functioning. To our knowledge, no studies have simultaneously explored resilience, weight-related QOL, discrimination, and post-traumatic stress problems among BYHW, which is a significant research gap. Guided by Resilience theory (Zimmerman et al., 2013), this study examined how youth's multisystemic resilience (resources) and weight-related QOL (assets) were associated with post-traumatic stress problems among help-seeking BYHW. Youth and their caregivers independently reported on these aspects of youth functioning. The relation between discrimination and youth's post-traumatic stress problems was also examined from the youth's perspective, given the pervasive effects of discrimination on Black communities and individuals with high body weights; parent report of youth discrimination experiences was not obtained in this study. It was hypothesized that: (1) higher self-reported resilience, greater self-reported weight-related QOL, and lower self-reported discrimination would be associated with lower self-reported post-traumatic stress problems in the youth report model, and (2) higher caregiver-reported youth resilience and greater caregiver-reported youth weight-related QOL would be associated with lower caregiver-reported youth post-traumatic stress problems in the caregiver model.

Method

Participants

Participants were 93 non-Hispanic Black identified youth ($M_{\text{age}}=13.94$, $SD=1.89$; 61.3% female) and a primary caregiver (total $N=186$) recruited from a pediatric healthy lifestyle clinic (HLC; 76.3%) and primary care clinics (PCC; 23.7%) in the Midsouth, United States. All youth were at or above the 95th percentile for BMI ($M_{\% \text{BMI}_{p95}}=150.01$, $SD=38.06$). Caregivers ranged in age from 29 to 69 years ($M_{\text{age}}=41.73$, $SD=8.08$) and were predominantly the biological mother (91.4%) of the participating youth. Regarding educational attainment, 65.6% of caregivers reported completing education past the twelfth grade. In terms of socioeconomic status (SES), youth most frequently reported living comfortably (50.5%), while caregivers most frequently

Table I. Sociodemographic Characteristics of the Sample

Characteristic	Youth		Caregiver	
	%	<i>n</i> = 93	%	<i>n</i> = 93
Race				
Black	100	93	95.2	89
Multiracial (with Black)	0	0	4.8	4
Gender				
Female	61.3	57	91.4	85
Male	38.7	36	8.6	8
Socioeconomic status				
"We live very well"	37.6	35	5.4	5
"We live comfortably"	50.5	47	39.7	37
"We live from paycheck to paycheck"	10.8	10	43.0	40
"We don't have a steady income"	1.1	1	10.8	10
"We have no current income"	0	0	1.1	1
Caregiver-reported highest level of education				
Middle School: 7th Grade	–	–	1.1	1
High School: 9th Grade	–	–	1.1	1
High School: 10th Grade	–	–	2.2	2
High School: 11th Grade	–	–	2.2	2
High School: 12th Grade	–	–	28.0	26
College: Freshman	–	–	11.8	11
College: Sophomore	–	–	21.5	20
College: Junior	–	–	9.7	9
College: Senior	–	–	9.7	9
Graduate School: 1st year	–	–	3.2	3
Graduate School: 2nd year	–	–	5.4	5
Graduate School: 3rd year	–	–	1.1	1
Graduate School: ≥4th year	–	–	3.2	3
Caregiver-reported income level				
<\$20,000	–	–	17.2	16
\$20,001–\$40,000	–	–	31.2	29
\$40,001–\$60,000	–	–	10.8	10
\$60,001–\$80,000	–	–	10.8	10
\$80,001–\$100,000	–	–	10.8	10
>\$100,001	–	–	9.7	9
Not reported	–	–	9.7	9

reported living paycheck to paycheck (43.0%) (see [Table I](#) for additional demographic details).

Procedure

Following institutional review board approval, participants were recruited from the HLC and PCC. The HLC provides weight management services (i.e., medical care) and other health services (e.g., medication management) for youth upon referral ([Burton et al., 2018](#)). The PCC provides a range of health services, including preventive care and medical treatment. Prior to study enrollment, youth and a primary caregiver were screened for eligibility. Youth were eligible if they were between the ages of 11 and 17 years, self-identified as Black/African American, were fluent in English, not currently pregnant, had no sensory or cognitive impairments that could impact the caregiver-child relationship, and were currently receiving services at the HLC or PCC. Caregivers also had to be English speaking and identify as one of the youth's primary day-to-day caregivers. Eligible and interested participants were enrolled in the study. Prior to beginning their interviews, caregivers provided consent for their own participation as well as their child's, while youth provided assent. Youth were administered a 1-hr survey that included reliable and valid self-report measures assessing post-traumatic stress problems, discrimination, resilience, and weight-related QOL. Caregivers completed a separate self-report survey independently in which they provided information on their child's

functioning. Youth and caregivers each received a \$20 gift card for completing the questionnaires. They also received a list of local and national health resources and supports. Participant consents did not include permission for public release of deidentified data. As such, aggregate data may be available upon reasonable request to the corresponding author.

Measures

Youth and Caregiver Demographics

Youth reported their age, gender, race, ethnicity, and perceived SES. Caregivers reported their own age, gender, race, ethnicity, perceived SES, and total household income. Perceived SES was assessed from both the youth's and caregiver's perspectives using the single item, "Which of these phrases best describes your family's socioeconomic status?", with response options of "(1) we live very well," "(2) we live comfortably," "(3) we live from paycheck to paycheck," "(4) we don't have a steady income," and "(5) we have no current income." Thus, responses ranged from 1 to 5 with lower scores indicating higher perceived SES. This SES item has been used in other study protocols ([Rybak et al., 2017](#)) and is similar to the assessment of SES in previous work with treatment-seeking youth and their caregivers ([Evans et al., 2022](#)). In this sample, caregiver-reported SES and caregiver-reported household income were significantly, positively correlated [$r(90) = .273, p = .008$].

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

	1	2	3	4	5	6	7	8	9	10	11
1. YR PTSP	–										
2. Youth %BMip95	–.05	–									
3. YR resilience	–.48***	.05	–								
4. YR weight-related QOL	–.44***	–.35**	.26	–							
5. YR discrimination	.68***	.13	–.42***	–.51***	–						
6. CR youth PTSP	.32**	.10	–.20	–.20	.31**	–					
7. CR youth resilience	–.36***	–.13	.32**	.17	–.12	–.26*	–				
8. CR youth weight-related QOL	–.03	–.62***	.11	.36***	–.16	–.42***	.38***	–			
9. Youth age	.07	.17	–.07	–.21*	.16	–.01	.08	–.09	–		
10. YR perceived family SES	.20	.06	–.15	–.16	.18	.19	–.08	–.06	.26*	–	
11. CR perceived family SES	.04	–.19	.09	–.02	–.07	.06	.01	–.14	–.22*	.11	–
M	56.15	150.01	118.39	85.59	17.17	53.73	118.89	82.70	13.94	1.75	2.62
SD	7.06	38.06	14.87	14.27	8.09	6.13	16.12	17.67	1.86	0.69	0.79

Note. %BMip95 = Youth BMI Percent of the 95th; CR=caregiver-reported; PTSP=post-traumatic stress problems; SES=socioeconomic status; Weight-Related QOL=weight-related quality of life; YR=youth-reported.
 * $p < .05$, ** $p < .01$, *** $p < .001$.

Youth BMI Percent of the 95th

To determine BMI percent of the 95th (%BMip95) youth participant’s BMI was obtained from their medical records by research staff. Reference standards provided by the Centers for Disease Control and Prevention were then used for the calculation of %BMip95 based on age and sex. In the current sample, %BMip95 scores ranged from 92.70 to 283.77.

Youth Post-Traumatic Stress Problems

The Youth Self-Report (YSR) and Child Behavior Checklist (CBCL) are a pair of measures, each consisting of 113 items, that assess youth’s behavioral, emotional, and social problems over the past six months (Achenbach & Rescorla, 2001). The YSR was administered to all youth and the CBCL was administered to all caregivers. Given the aims of the current study, the 14-item Post-traumatic Stress Problems (PTSP) subscale was used to examine challenges that have been linked to experiencing trauma and post-traumatic stress responses (Achenbach & Rescorla, 2007). Example items from the PTSP subscale include, “I have trouble concentrating or paying attention” (YSR), and my child experiences “Sudden changes in mood or feelings” (CBCL). Responses are rated on a 3-point Likert scale and range from 0 to 28, with higher scores indicating more post-traumatic stress problems. The YSR and CBCL demonstrate adequate discriminant and convergent validity (Gomez et al., 2014), and have been used with Black-identifying samples (Nyborg & Curry, 2003). The YSR and CBCL PTSP subscales have displayed acceptable reliability, internal consistency, and validity (Achenbach & Rescorla, 2007), and have been used in samples that include Black-identifying youth (Winningham et al., 2019). In this study, Cronbach’s alpha for the PTSP subscale of the YSR was .84 and .71 for the PTSP subscale of the CBCL.

Youth Resilience

The Child and Youth Resilience measure (CYRM; Ungar & Liebenberg, 2011) consists of 28-items assessing youth’s access to multilevel resources that may support and bolster their wellbeing. The CYRM-28 was administered to youth while the CYRM-Persons Most Knowledgeable (CYRM-PMK; identical item content to CYRM-28 but from the perspective of the caregiver) was administered to caregivers. The CYRM-28 and CYRM-PMK assess three primary domains of

youth resilience: individual, relational, and contextual. Example items include, “I am aware of my own strengths” (CYRM-28) and “The youth enjoys his/her community’s traditions” (CYRM-PMK). Responses are rated on a 5-point Likert scale and range from 28 to 140, with higher scores indicating more resilience. The CYRM has demonstrated good reliability and content validity (Ungar & Liebenberg, 2011), and has been used with Black-identifying samples (Dinc & Topcu, 2021). In the current study, Cronbach’s alpha was .91 for the CYRM-28 and .95 for the CYRM-PMK.

Youth Weight-Related Quality of Life

The Impact of Weight on Quality of Life (IWQOL-Kids; Kolotkin et al., 2006; Nadeau et al., 2011) scale includes 27-items examining youth’s weight-specific, health-related quality of life over the past week. The IWQOL-Kids Adolescent Form was administered to all youth, and the IWQOL-Parent Form was administered to all caregivers. Both IWQOL forms assess four primary domains: physical comfort, body esteem, social life, and family life. Example items include, “Because of my weight it is hard for me to move around” (IWQOL-Kids Adolescent Form) and “Because of my child’s weight he/she doesn’t like to change his/her clothes or undress in front of others” (IWQOL-Parent Form). Responses are rated on a 5-point Likert scale and range from 0 to 100. The IWQOL is scored such that higher scores indicate greater quality of life. The IWQOL-Kids has been identified as a reliable measure of youth’s current weight-related quality of life (Zeller et al., 2015) demonstrating good convergent and discriminant validity (Kolotkin et al., 2006; Nadeau et al., 2011). The IWQOL-Kids has been used with samples that include Black-identifying youth and treatment seeking youth (Kolotkin et al., 2006; Modi et al., 2008; Nadeau et al., 2011). Cronbach’s alpha coefficients for IWQOL-Kids Adolescent Form and Parent Form were .92 and .95, respectively.

Youth Discrimination

The Everyday Discrimination Scale (EDS; Williams et al., 1997) was administered to youth. The EDS consists of nine items assessing everyday discriminatory experiences that could be related to any aspect of youth’s intersectional identities (e.g., race, gender, religion, height, weight). Example items

include, “People act as if they are afraid of you” and “People act as if they’re better than you.” Responses are rated on a 6-point Likert scale and range from 9 to 54. All items are reverse scored, such that higher scores indicate more experiences of discrimination. The EDS demonstrates good reliability and validity and has been used with diverse samples (e.g., Black, Hispanic/Latinx, and Asian-identifying individuals; Kim et al., 2014). In the current sample, Cronbach’s alpha was .82.

Data Analytic Plan

Analyses were conducted in SPSS version 28. Data screening confirmed that assumptions were met for normality, outliers, and multicollinearity (Tabachnick & Fidell, 2019). Less than 1% of the data were missing and were addressed via mean imputation at the item level. To determine which covariates should be included in the primary analyses, Pearson correlations were run for continuous variables (i.e., youth age, perceived family SES, %BMIp95) and independent samples *t*-tests were run for categorical variables (i.e., youth gender, youth recruitment group). Associations were examined between these covariates and youth post-traumatic stress problems.

Two linear regression models were run to examine factors associated with youth post-traumatic stress problems from the perspective of BYHW and their caregiver. For the youth model, the dependent variable was youth-reported post-traumatic stress problems (YSR) and the independent variables were weight-related QOL (IWQOL-Kids Adolescent Form), resilience (CYRM-28), and discrimination (EDS). For the caregiver model, the dependent variable was caregiver-reported youth post-traumatic stress problems (CBCL), and the independent variables were weight-related QOL (IWQOL-Kids Parent Form) and resilience (CYRM-PMK). Posthoc power analyses run in G*Power (Faul et al., 2007) indicated that the study was sufficiently powered for both the youth ($f^2=1$, $\alpha=.05$, $n=93$, $1-\beta=1.00$) and caregiver ($f^2=0.24$, $\alpha=.05$, $n=93$, $1-\beta=.99$) models.

Results

Preliminary Analyses

Means, standard deviations, and correlations among continuous study variables are provided in Table II. Preliminary analyses indicated that none of the covariates were significantly related to youth- or caregiver-reported youth post-traumatic stress problems. Thus, no covariates were included in the

primary analyses. Results from the preliminary analyses revealed that BYHW and their caregivers reported similar levels of youth post-traumatic stress problems, resilience, and weight-related QOL (see Table II). The average PTSP scores were in the normative range and below clinical thresholds (≥ 70 =at risk, ≥ 80 =clinically significant). Notably, for both youth and their caregivers, the mean weight-related QOL score was higher than average scores reported in other studies (e.g., de Laat, 2022; Modi et al., 2008; Nadeau et al., 2011) suggesting that our sample endorsed a better quality of life relative to previous samples. While some of these studies included participants who were treatment-seeking or racially diverse, previous studies have not exclusively examined treatment-seeking BYHW and weight-related QOL.

Primary Analyses

The youth regression model, which included youth-reported resilience, weight-related QOL, and discrimination, was significant, $F(3, 89)=31.63$, $p<.001$, $f^2=1.00$ (see Table III). This model accounted for 50.0% of the variance in youth-reported post-traumatic stress problems, and the effect size was large. While higher levels of resilience ($\beta=-.23$, $p=.01$; $f^2=.09$) and lower discrimination ($\beta=.52$, $p<.001$; $f^2=.35$) were both linked with fewer post-traumatic stress problems, effect size estimates indicate that discrimination had a large influence on youth’s post-traumatic stress problems while resilience had a small effect. Weight-related QOL was not significantly associated with youth post-traumatic stress problems in this model.

The caregiver regression model, which included caregiver-reported youth resilience and weight-related QOL, was significant, $F(2, 90)=10.45$, $p<.001$; $f^2=.20$ (see Table III). This model accounted for 17.0% of the variance in youth’s post-traumatic stress problems and yielded a medium effect size. In this model, greater weight-related QOL ($\beta=-.37$; $p<.001$; $f^2=.14$) was associated with fewer post-traumatic stress problems, and the effect size was small. Caregiver-reported youth resilience was not significantly linked to post-traumatic stress problems.

Discussion

Guided by Zimmerman’s Resilience theory (2013), the present study examined how strengths-based factors, including resources (i.e., multisystemic resilience) and assets (i.e., weight-related QOL), were linked with post-traumatic stress problems among help-seeking BYHW. Past literature has

Table III. Linear Regression Models Examining Factors Related to Youth Post-Traumatic Stress Problems

	β	YR Post-traumatic Stress Problems		
		<i>t</i>	R^2	<i>F</i>
YR discrimination	.52	5.67***	.50	31.63***
YR resilience	-.23	-2.86*		
YR weight-related QOL	-.12	-1.36		
			CR youth post-traumatic Stress Problems	
CR youth resilience	-.12	-1.18	.17	10.45***
CR youth weight-related QOL	-.37	-3.64***		

Note: CR=caregiver-reported; Weight-Related QOL=weight-related quality of life; YR=youth-reported.

* $p<.05$, *** $p<.001$.

evaluated direct associations between stress problems and poor health outcomes among Black youth (Austin et al., 2009), but to our knowledge no studies have examined how Black youth's post-traumatic stress problems are associated with multisystemic resilience and weight-related QOL in help-seeking BYHW, nor how experiences of discrimination relate to post-traumatic stress problems in this population. Given the negative consequences associated with heightened post-traumatic stress problems, it is important to identify mutable strengths-based factors that could be targeted in future intervention work.

Findings partially supported the first hypothesis, given that in the youth model, higher resilience and lower discrimination were associated with fewer post-traumatic stress problems. This result is in line with past literature that highlights multisystemic resilience as a vital resource among Black youth who endorse high levels of stress problems (Jones, 2007). For example, endorsing a better self-image (e.g., positive perceptions of one's behavior; Herd et al., 2022), support from family and friends (Trickey et al., 2012), and valuing connections with one's community and culture (Gapen et al., 2011) are all essential social ecological factors measured by the CYRM that facilitate multisystemic resilience. Moreover, these resilience variables have been shown to protect against the development of post-traumatic stress symptoms in other samples (Fincham et al., 2009). Understanding how help-seeking BYHW utilize resilience resources to bolster their functioning, and from whom they receive and draw support, would be a meaningful next step in future work. This is particularly important given that youth's resilience only yielded a small effect on their post-traumatic stress problems in this study. Indeed, elucidating specific mechanisms of resilience may illuminate which resilience resources uniquely contribute to reduced post-traumatic stress problems. Such awareness may allow interventionists to help BYHW adapt and withstand life challenges, possibly reducing their susceptibility to the long-term effects of post-traumatic stress.

Consistent with previous work, in this sample, experiences of discrimination had a large effect on youth's self-reported post-traumatic stress problems. Discrimination has been identified as a significant social driver/determinant of health and a major psychosocial stressor (Pascoe & Smart Richman, 2009). Although discrimination may be quite common for BYHW due to their intersecting marginalized identities (i.e., Black identifying, high body weight), studies exploring contributions of discrimination in the context of Black youth health and well-being are limited. Given increased exposure to discrimination, BYHW are at risk of internalizing these discriminatory experiences which can have a long-lasting impact on the way they perceive their overall wellbeing. Accordingly, this finding shows the importance of understanding the impact of daily discrimination experiences and intervening to reduce their negative effects on BYHW.

Findings also partially supported the second hypothesis, as per caregiver report, greater weight-related QOL was associated with lower perceived post-traumatic stress problems for youth. This result underscores the connection between caregiver perceptions of youth well-being and observations of their child's post-traumatic stress problems. This finding trends with a small body of research examining weight-related concerns of BYHW, which found that caregivers are likely to recognize when Black youth experience changes in their QOL (Fallon et al., 2005). Notably, caregiver

perceptions of youth's weight-related QOL could be impacted by their own weight-related experiences (Modi et al., 2008) or parenting stress (Guilfoyle et al., 2010), which may not represent the actual lived experiences of their children. In addition, the current study's sample was help seeking, so it is likely that caregivers were particularly concerned about their child's weight and/or health, which may have influenced study results. Overall, findings highlight the unique social ecological factors that caregivers and youth perceive as related to youth's post-traumatic stress problems. Caregivers may benefit from family-based interventions that provide psychoeducation about ways to improve youth's weight-related QOL and bolster their resilience. Participating in such programming may strengthen caregiver-youth relations resulting in improved perceptions of youth's post-traumatic stress problems from the perspective of caregivers and better weight-related QOL for youth.

The disparate findings between youth and caregiver models indicate that help-seeking BYHW and their caregivers hold different perceptions of what relates to post-traumatic stress problems in youth. In contrast to the first hypothesis, youth-reported weight-related QOL was not significantly linked to youth self-reported post-traumatic stress problems while caregiver analyses did show an association from their perspective. This suggests that caregivers' perceptions and biases toward youth's weight impact how they view their child's weight-related QOL, which may not always represent how the youth personally feels. BYHW may have fewer concerns about their general health and social functioning related to their body size, and instead perceive factors outside of their weight (i.e., resilience and discrimination) as more strongly associated with their post-traumatic stress problems. Findings underscore the importance of assessing both youth and caregiver perspectives of youth functioning in order to create multi-pronged interventions that target strengths and areas for growth between caregivers and youth, which may ultimately reduce youth's posttraumatic stress problems (Jacques-Tiura et al., 2017).

In contrast with the second hypothesis and contrary to findings in the youth model, caregiver-reported youth resilience was not significantly associated with youth's post-traumatic stress problems. Findings should be interpreted in the context of this help-seeking sample who were looking for opportunities to address their weight or health concerns. Given that these youth and their caregivers reported average to high levels of resilience, caregivers may believe that the youth have sufficient access to multilevel resources; however, the null finding warrants elaboration in future studies with this population.

Limitations

Several limitations should be considered when interpreting study findings. Data were cross-sectional, which prohibits drawing conclusions regarding directionality and temporality of findings. The sample was help-seeking and recruited from clinics in the U.S. Midsouth, which limits generalizability of study findings to other populations such as: BYHW who are not seeking services and families in other geographic regions. Additionally, the analyses did not account for youth's perceived stress levels or the number of traumatic events youth experienced. Lastly, caregiver and youth models were analyzed separately, so possible influences of parent-reported

variables on youth-reported outcomes, and vice versa, were not explored.

Future Research Directions

Longitudinal research is needed to assess study variables across multiple time points, and to examine directionality of findings, as there could be bidirectional associations among these variables. Findings also highlight the need for continued research examining different forms of stress (i.e., chronic, perceived, race-related, weight-related) that may be associated with post-traumatic stress problems among BYHW. Of note, this help-seeking sample of BYHW and their caregivers reported similar perceptions of youth's post-traumatic stress problems, with average scores in the normative range according to both informants. Future research on samples with more variability in post-traumatic stress problems would strengthen and extend our findings. Given the divergent perspectives shown between BYHW and their caregivers, future mixed-methods studies could explore strengths-based variables that may impact the functioning of BYHW. Future research could also move beyond self-report measures to biomarkers of stress (i.e., cortisol) to advance this work. Finally, examining how resilience may moderate the effects of discrimination and weight-related QOL on youth's post-traumatic stress problems may offer valuable information to guide intervention work with this population.

Conclusions

This study utilized a strengths-based, theoretically informed approach to evaluate resources, assets, and post-traumatic stress problems from the perspective of BYHW and their caregivers. The role of discrimination was also examined to offer a comprehensive view of factors impacting post-traumatic stress among Black youth. For BYHW, greater resilience and lower discrimination were significantly linked with fewer post-traumatic stress problems, whereas according to caregivers, higher weight-related QOL was associated with fewer post-traumatic stress problems. These findings highlight the importance of considering both youth and caregiver perspectives, which provide valuable and comprehensive insight into how resources (i.e., multisystemic resilience) and assets (i.e., weight-related QOL) may be linked with post-traumatic stress problems among BYHW. Results also indicate that differential targets for intervention (e.g., bolstering multilevel resilience, improving weight-related QOL, fostering healthy coping mechanisms in response to discriminatory experiences) may emerge when working with BYHW and their caregivers. Given that interventions for help-seeking BYHW are most often "standard care" (e.g., behavioral lifestyle interventions, pharmacotherapy, weight loss surgery; Byrd et al., 2018), knowledge from the current study could guide the development or adaptation of culturally responsive, family-focused interventions for this unique population.

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Conflicts of interest

The authors have no conflicts of interest to disclose.

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