

## Special Article - Anxiety Disorders

# Anxiety and Stress in Inner-City Black American Middle School Girls: Levels and Relationships

Pettiti K<sup>2</sup>, Ellzey D<sup>1</sup>, Davis MJ<sup>1</sup>, Pugh DM<sup>1</sup>, Stadulis RE<sup>1</sup> and Neal-Barnett AM<sup>1\*</sup>

<sup>1</sup>Department of Psychological Sciences, Kent State University, Kent State University, USA

<sup>2</sup>School Psychology, Kent State University, USA

\*Corresponding author: Neal-Barnett AM, Department of Psychological Sciences, Kent State University, USA

Received: April 18, 2017; Accepted: May 11, 2017;

Published: May 18, 2017

## Abstract

Left unaddressed, anxiety difficulties in adolescence are associated with higher risk for anxiety disorders later in life. As a result of racism and stigma, Black adult females experience anxiety different than their White counterparts. They experience the anxiety for longer periods of time and the symptoms are more intense. Few studies have explored the basic symptomatology of anxiety and perceived stress among Black adolescent girls. Yet, investigation of this area is key to better understanding the developmental trajectory preceding adulthood. The current study of a sample of 72 Black adolescent urban city girls aims to begin to lay the foundation of research examining the development of stress and anxiety in adolescent Black females. As part of a larger intervention study, participants were administered the MASC-2, Perceived Stress Scale, and an open-ended stress questionnaire. Our sample evidenced significantly higher anxiety than the population values. Moderate levels of perceived stress were present. Significant positive correlations were found for level of stress experienced the day of assessments and both anxiety and perceived stress. Common stressors identified by the girls included academic and relational issues. Understanding the specific stressors may be important to further our understanding of anxiety in this population, but also in the support and development of culturally sensitive interventions for this group.

**Keywords:** Black adolescent females; Anxiety; Perceived stress; Stressors

## Introduction

Anxiety and stress can have an adverse impact on an adolescent's life. Anxiety symptoms in childhood are associated with poor academic performance [1,2] and difficulty with social skills and peer relationships [3,4] as well as behavior difficulties [5]. Similarly, stress during childhood is associated with increased psychological symptoms [6] and the development of mental health disorders and/or physical illness [7] in adulthood.

Several studies have suggested racial differences in symptoms and intensity of anxiety and stress in youth. Compton and colleagues [8] found that Black youth reported significantly more harm avoidance and physical avoidance than their White counterparts. Litzman and colleagues' [9] study of depression and anxiety across three cohorts of youth—elementary, middle school, and high school—found higher anxiety symptoms in middle and elementary aged Black participants than their White counterparts.

Anxiety levels among Black urban adolescent females appear elevated. In a study of four urban areas, 20% of an Ohio urban sample of adolescent Black girls indicated that they experienced clinical levels of anxiety and 8% indicated subclinical levels [10]. Similar patterns were observed for Black girls residing in New York City [11]. Among adolescent girls living in communities with high levels of violence in Los Angeles, high levels of anxiety have been observed [12].

Sociocultural factors associated with black adolescent girls are somewhat overwhelming. It appears that skin color, racial identity, racism, and the acting White accusation play a role in the

development of anxiety within Black adolescent girls [13-15]. These factors are associated with higher levels of racial discrimination which can increase or trigger an increase in anxiety levels [16-18]. Sexism exacerbates these variables as gender issues interact with race [19,20]. When black girls enter adolescence, many take on multiple roles including but not limited to student, sibling, provider or caretaker. As a result, Black adolescent girls incur more daily hassles or small day-to-day problems than their white female peers. Such hassles are associated with increased anxiety [11,21].

The biological process of puberty also appears to impact anxiety in this population. Black girls are more likely to experience early puberty than their white counterparts [22]. One consequence of early puberty for these females is higher levels of physical avoidance [22].

Perceived stress is defined as the degree to which situations in one's life are appraised as stressful [23]. Limited research has been conducted on perceived stress, anxiety and Black adolescent girls. In a study of adolescents in the Princeton School system, Finklestein and colleagues [24] found that Black adolescents had higher levels of perceived stress than their White counterparts. Females had higher levels of perceived stress than males. In addition, it appeared that adolescents with highly educated parents (four-year college degree or beyond) endorsed lower levels of perceived stress [24]. Among Black adolescents in a large Midwestern school district, Sellers and colleagues [25] found that perceived stress may have a partial mediating effect on anxiety. Sociocultural factors including racial identity and racial discrimination appear to moderate perceived stress.

**Table 1:** Levels of Stress Experienced (Today and in the Past Year).

Time Period	N	Minimum	Maximum	Mean	SD
Today	72	0	100	35.59	35.02
Past Year High	72	1	100	75.69	27.1
Past Year Low	72	0	100	20.24	24.62

Based on current research, perceived stress’s role in manifestation of anxiety for Black adolescent girls is unclear. Data do show, however, that stressors have a predictive relationship for anxiety as well as depression [6]. Research indicates that left unaddressed, anxiety difficulties in adolescence are associated with higher risk for anxiety disorder later in life. Black female adults experience anxiety different than their White counterparts. They experience the anxiety for longer periods of time and the symptoms are more intense [26]. Black women with higher levels of anxiety also report poor emotion regulation [27]. Poor emotion regulation is related to a number of problematic behaviors such as violence [28]. Furthermore, studies show that among Black and White women, Black women are more likely to develop a stress related physical illness [29,30].

Few studies have explored the basic symptomatology of anxiety and perceived stress among adolescent girls in an urban setting. Yet, investigation of this area is key to better understanding the developmental trajectory preceding adulthood. This study aims to lay the foundation of this research by depicting the relationships between stress and anxiety in adolescent Black females. In this study, we examine levels of perceived stress and anxiety in a sample of Black adolescent urban inner-city girls. Specifically, we examine levels of perceived stress, current stress level and anxiety, the correlations among perceived stress and anxiety, as well as the correlation between current stress and anxiety. In addition, we look at most frequently endorsed stressors for this group and how these stressors may impact anxiety levels.

**Methods**

**Participants**

Participants were 72 Black/biracial seventh and eighth grade adolescent females between the ages of 12-15years enrolled in Sisters United Now (S. U. N.), an 8 session culturally-infused stress and anxiety intervention program for Black girls. Participants attended one of two middle schools located in a large mid-western, low-income, urban school district in the United States. Due to the high percentage of students within the district qualifying for federally assisted free and reduced lunches, all students within the district received free

breakfast and lunch. S.U.N participation required informed consent from both parent or guardian and the participants, as well as the consent of the participants’ school administration. Participants either self-selected to participate or were recommended for S.U.N. by their school counselor. For a full description of the S.U.N intervention, see Davis and colleagues [31]. The study was approved by the Institutional Review Board and was assigned Study 15-242.

**Measures**

**The multidimensional anxiety scale for children 2<sup>nd</sup> edition** [32]: The Multidimensional Anxiety Score for Children 2<sup>nd</sup> Edition (MASC-2) is a 50-item copyrighted questionnaire that assesses symptoms related to anxiety disorders including social anxiety, general anxiety, and separation anxiety. The questionnaire contains items such as “I worry about other people laughing at me” and “I have trouble asking other kids to play with me.” Responses are indicated using a 4-point Likert-type scale ranging from 0 to 3 (0- Never, 1- Rarely, 2- Sometimes and 3- Often). The social anxiety subscale was used to assess the presence of symptoms related to social anxiety. The MASC-2 was shown to be a valid and reliable measure for this population [32,33]. In our feasibility studies, the MASC-2 was shown to have excellent reliability ( $\alpha = .90$ ).

**Open-ended stress questionnaire:** This consists of open-ended questions about stress including the adolescent’s definition of stress, top three stressors for the adolescent, method of handling stress and amount of stress experienced over the past month using a 0 to 100% scale. This questionnaire allowed girls to give us their description of the stressors that impacted their lives.

**Perceived stress scale** [23]: The Perceived Stress Scale (PSS) is the most widely used copyrighted assessment for measuring the perception of stress. It is a measure of the degree to which situations in one’s life are seen as stressful. Items are designed to assess how unpredictable, uncontrollable, and overloaded respondents find their lives to be. The PSS asks about feelings and thoughts during the last month. Previous studies with Black adolescents report moderate-good reliability with  $\alpha$  ranging from .64 to .71 [25,34].

**Procedure**

As part of the S.U.N. pre-assessment, participants completed a variety of measures related to stress, anxiety, and racial identity during a morning class period. Facilitators read the questionnaires’ directions and items aloud. This allowed all participants to work at a similar pace by following along with the facilitators, ensured girls understood the questions and reduced any fatigue that may have been

**Table 2:** Correlations among anxiety & Stress measures.

		Perceived Stress	Total Anxiety Raw Score	Social Anxiety: Total Raw score
Perceived Stress	Pearson Correlation	1	.339**	0.143
	Sig. (2-tailed)		0.004	0.232
Total Anxiety: Raw Score	Pearson Correlation	.339**	1	.716**
	Sig. (2-tailed)	0.004		<.0005
Social Anxiety: Total Raw Score	Pearson Correlation	0.143	.716**	1
	Sig. (2-tailed)	0.232	<.0005	
Stress Test: Today's Stress	Pearson Correlation	.440**	.414**	.282*
	Sig. (2-tailed)	<.0005	<.0005	0.016

**Table 3:** Most Frequent Stressors.

Ranking	Stressors	N
1	Academic stressors	41
2	Familial stressors	19
3	Relational Stressors (non-specific)	15
4	Relational stressors (Friends)	6
5	Performance Issues	5
5	Autonomy (lack of)	5
7	Kids/caring for children	4
8	Violence/threat	3
8	Sports	3
8	Life	3
8	Too busy	3
8	Thoughts/Worries about future	3

induced by requiring the girls to read all of the questionnaires' items on their own. On average, participants completed all the measures within a 35-40-minute time period. Researchers also found it beneficial to administer the MASC-2 first because of its length.

### Data analysis

This is a mixed method study. All quantitative data was analyzed using SPSS at Kent State University. Descriptive statistics were calculated, correlations and t-tests were performed for the MASC-2 and PSS. Data from the open-ended questionnaire were analyzed using qualitative and quantitative methods. Researchers compiled a list of stressors identified by the participants. Frequency counts were performed. Descriptive statistics were calculated for level of stress experience in the past year and today.

## Results

### Anxiety and stress measures

Participants completed the MASC-2 and the PSS. The mean total Anxiety (MASCTot) for the MASC-2 was 69.06(SD=20.58) The Total Anxiety T-Score mean of 59.27 suggests the group had above average anxiety (i.e., almost one standard deviation above the age/gender matched population mean). A single sample t-test was conducted comparing the sample mean (69.06) to the MASC Manual population mean (50.0) yielding a significant difference,  $t(71) = 7.86; p < .0005$ .

The mean social anxiety score (MASCSoc) was 13.06 (SD=7.11). A single sample t-test was conducted comparing the sample mean to the MASC Manual population mean (M=11.0) yielding a significant difference,  $t(71) = 2.47; p = .016$  indicating this sample was somewhat more socially anxious than the population.

Participants were asked to share their levels of stress, on a scale from 0 to 100 for today (the assessment day) and in the past year. Results are presented in Table 1. In assessing their stress in the past year, they were to indicate both the low and the high levels of stress experienced. Stress on the day of the assessment was a bit below the mid-point and closer to their yearly low than their yearly high. While the girls demonstrated elevated anxiety on the MASC, their reported perceived stress and stress on assessment day was low moderate. As indicated by the standard deviations, there was much variability in the sample.

Table 2 presents the inter-correlations among the anxiety and stress measures. Perceived stress, as measured by the PSS, significantly and positively related to total anxiety but not social anxiety. The relationship between stress as experienced on the day of assessment and perceived stress was moderate, positive and significant. A positive and significant relationship was also found between MASCTot anxiety and stress today. As was to be expected, MASCTot and MASCSoc were significantly correlated.

### Stressors

The stress survey asked these adolescent girls what were the stressors that they experienced most frequently. Using open coding, each coder identified each stressor from the girls' statements. Then the coders would group stressors identified agreeing as to the categories the identified stressors best fit. Table 3 presents a summary of the reported responses.

Academic stressors were by far the most mentioned stressors. Family and relationship stressors (between friends or non-specified) were next in importance to the girls. Over 20 additional stressors were identified by at least one participant.

## Discussion

As indicated by the MASCTot scores, a significant portion of our sample reported elevated levels of anxiety. Social anxiety was also elevated in this sample. The highly elevated anxiety scores were unexpected. Whereas we expected some elevation in a portion of the girls, we did not expect such a high level of intensity or that over 65.4% would fall above the average range. Many of our girls lived in low-income neighborhoods populated by rental property, limited access to grocery stores and high crime. It was not uncommon for a large number to change residence at least twice during the school year. Instability in housing, food and safety are known risk factors for anxiety as well as other forms of psychopathology [6,12].

For Black women, anxiety symptoms are more chronic and intense [26]. Our results may offer a clue that helps explain this finding. As middle schoolers, our sample endorsed elevated levels of anxiety yet, most did not have a name for what they were experiencing. Perhaps these early elevations, coupled with lack of awareness and knowledge of anxiety, influence Black women's manifestation of anxiety. In other words, Black women know they are experiencing something, they just have never been given a name and explanation for it. In our work with adults, many women encourage us to work with Black girls saying, "If we had had this information when we were girls, it would have made a profound difference in our lives going forward."

Our sample reported moderate levels of perceived stress. MASCTot level and perceived stress was significantly correlated. Level of stress experienced the day of assessment ("today") was positively related to both anxiety and perceived stress. One possible explanation may be that the level of today stress may actually reflect a persistent level of stress for the girls. A more likely explanation for the findings relates to the specificity or types of stressors. Of the top five stressors generated by our sample, three are specific to interpersonal relationships (familial stressors, relational stressors-friends, relational stressors-not specified). Research with low-income Australian adolescents [35] found that those with anxiety were more likely to be exposed to relational stressors (mother's change of partners, prenatal

maternal dissatisfaction, and mother's partner trouble with the law).

The remaining top stressors focus on academic and performance stressors. This finding coupled with the predominance of relational stressors suggest that in subsequent studies, a closer examination of the role of social anxiety in the elevated MASCTot scores as well as in participants' lives is needed.

## Limitations

This study relied on adolescents' self-report. This method was chosen due to the difficulty found within this population to reach parents and legal guardians and instability in the contact information and home addresses provided. However, researchers should attempt to integrate multiple sources of data and reporters (e.g., teachers, parents, school staff) because doing so will provide researchers with a more accurate depiction of the participants and increase the reliability of the data. An alternative solution might be to include a short 15-minute participant interview in addition to the measures.

Our sample was limited to girls residing in low-income sections of a large urban city. Findings are likely to be different for girls in suburban or rural areas and among middle and upper-middle class Black girls. We plan to include these samples in the near future.

## Conclusion

This study provided quantitative and qualitative data on anxiety, stressors and perceived stress in urban Black adolescent girls, a demographic often overlooked in research. Both anxiety and perceived stress were related to stress experienced the assessment day. Given that anxiety levels are often reported as elevated in urban Black female populations, it appears important that we take a closer look at the stressors in their lives. Future studies should include guided interviews about stressors and racism, as well as the collection of biological or psycho physiological data. Understanding the specific stressors and whether there is a race-based component to the stressors may be important to further our understanding of anxiety in this population, but also in the support and development of culturally sensitive interventions for this group.

## Acknowledgement

This research was funded in part by grants from the Women's Endowment Fund of the Akron Community Foundation and the Kent State University Applied Psychology Center.

## References

- Mazzone L, Ducci F, Scoto MC, Passaniti E, D'Arrigo VG, Vitiello B. The role of anxiety symptoms in school performance in a community sample of children and adolescents. *BMC Public Health*. 2007; 7: 347-352.
- Wood JJ. Effect of anxiety reduction on children's school performance and social adjustment. *Developmental Psychology*. 2006; 42: 345-359.
- Fordham K, Stevenson-Hinde J. Shyness, friendship quality, and adjustment during middle childhood. *Journal of Child Psychology and Psychiatry*. 1999; 40: 757-768.
- La Greca AM, Lopez N. Social anxiety among adolescents: Linkages with peer relations and friendships. *Journal of Abnormal Child Psychology*. 1998; 26: 83-94.
- Barrett S, Heubeck BG. Relationships between school hassles and uplifts and anxiety and conduct problems in grades 3 and 4. *Journal of Applied Developmental Psychology*. 2000; 21: 537-554.
- Grant KE, Compas BE, Thurm AE, McMahon SD, Gipson PY. Stressors and Child and Adolescent Psychopathology: Measurement Issues and Prospective Effects. *Journal of Clinical Child and Adolescent Psychology*. 2004; 33: 412-425.
- Johnson NG, Roberts MC, Worell J. *Beyond appearance: A new look at adolescent girls*. Washington, DC, US: American Psychological Association. 1999.
- Compton SN, Nelson AH, March JS. Social phobia and separation anxiety symptoms in community and clinical samples of children and adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2000; 39: 1040-1046.
- Latzman RD, Naifeh JA, Watson D, Vaidya JG, Heiden LJ, Damon JD, et al. Racial differences in symptoms of anxiety and depression among three cohorts of students in the southern United States. *Psychiatry*. 2011; 74: 332-348.
- Frazier F, Belliston L, Brower L, Knudsen K. *Placing Black Girls at Promise: Report of the Rise Sister Rise Study Executive Summary*. Columbus, OH: Ohio Department of Mental Health. 2011.
- Jones-DeWeever A. *Black girls in New York City: Untold strength & resilience*: Institute for Women's Policy Research. 2009.
- Cooley-Strickland MR, Griffin RS, Darney D, Otte K, Ko J. Urban African American youth exposed to community violence: A school-based anxiety preventive intervention efficacy study. *Journal of Prevention & Intervention in the Community*. 2011; 39: 149-166.
- Duke B, Berry DC. *Dark girls: The story of color gender and race*. Los Angeles: Urban Winter Entertainment and Duke Media Productions. 2011.
- Mandara J, Gaylord-Harden NK, Richards MH, Ragsdale BL. The effects of changes in racial identity and self-esteem on changes in African American adolescents' mental health. *Child Development*. 2009; 80: 1660-1675.
- Murray MS, Neal-Barnett A, Demmings JL, Stadulis RE. The acting White accusation, racial identity, and anxiety in African American adolescents. *Journal of Anxiety Disorders*. 2012; 26: 526-531.
- Brody GH, Chen Y-F, Murry VM, Ge X, Simons RL, Gibbons FX, et al. Perceived Discrimination and the Adjustment of African American Youths: A Five-Year Longitudinal Analysis With Contextual Moderation Effects. *Child Development*. 2006; 77: 1170-1189.
- Gaylord-Harden NK, Cunningham JA. The impact of racial discrimination and coping strategies on internalizing symptoms in African American youth. *Journal of Youth and Adolescence*. 2009; 38: 532-543.
- Thompson VLS. Racism: perceptions of distress among African Americans. *Community Mental Health Journal*. 2002; 38: 111-118.
- Buckley TR, Carter RT. Black adolescent girls: Do gender role and racial identity: Impact their self-esteem? *Sex Roles*. 2005; 53: 647-661.
- Harris-Perry MV. *Sister citizen: Shame, stereotypes, and Black women in America*. New Haven: Yale University Press. 2011; 378.
- Cooper SM, Guthrie BJ, Brown C, Metzger I. Daily hassles and African American adolescent females' psychological functioning: Direct and interactive associations with gender role orientation. *Sex Roles*. 2011; 65: 397-409.
- Herman-Giddens ME, Kaplowitz PB, Wasserman R. Navigating the recent articles on girls' puberty in Pediatrics: what do we know and where do we go from here? *Pediatrics*. 2004; 113: 911-917.
- Cohen S, Kamarck T, Mermelstein R, others. *Perceived stress scale*. Measurement Instrument. Menlo Park, CA: Mind Garden. 1994.
- Finkelstein DM, Kubzansky LD, Capitman J, Goodman E. Socioeconomic differences in adolescent stress: The role of psychological resources. *Journal of Adolescent Health*. 2007; 40: 127-134.
- Sellers RM, Caldwell CH, Schmeelk-Cone KH, Zimmerman MA. Racial identity, racial discrimination, perceived stress, and psychological distress among African American young adults. *Journal of Health and Social Behavior*. 2003; 44: 302-317.

26. Breslau J, Aguilar-Gaxiola S, Kendler KS, Su M, Williams D, Kessler RC. Specifying race-ethnic differences in risk for psychiatric disorder in a USA national sample. *Psychological Medicine*. 2006; 36: 57-68.
27. Graham J, Calloway A, Roemer L. The buffering effects of emotion regulation in the relationship between experiences of racism and anxiety in a Black American sample. *Cognitive Therapy & Research*. 2015; 39: 553-563.
28. Davidson RJ, Putnam KM, Larson CL. Dysfunction in the neural circuitry of emotion regulation-a possible prelude to violence. *Science*. 2000; 289: 591-594.
29. Dingfelder S. African-American women at risk. *Monitor on Psychology*. 2013; 44: 56.
30. Harrell JS, Gore SV. Cardiovascular risk factors and socioeconomic status in African American and Caucasian women. *Research in Nursing & Health*. 1998; 21: 285-295.
31. Davis M, Belt LB, Pettiti K, Stadulis R, Neal-Barnett A. S.U.N: A musical cognitive restructuring for Black adolescent girls. Poster presented at American Psychological Association Division 45 Annual Convention. Eugene. 2014; 19-21.
32. March JS. *Multidimensional Anxiety Scale for Children*. Measurement Instrument. Cheektowaga, NY: Multi-Health Systems. 2013.
33. Fraccaro RL, Stelnicki AM, Nordstokke DW. *Multidimensional Anxiety Scale for Children* by J. S. March. *Canadian Journal of School Psychology*. 2015; 30: 70-77.
34. Neblett EW, White RL, Ford KR, Philip CL, Nguyễn HX, Sellers RM. Patterns of racial socialization and psychological adjustment: Can parental communications about race reduce the impact of racial discrimination? *Journal of Research on Adolescence (Wiley-Blackwell)*. 2008; 18: 477-515.
35. Phillips NK, Hammen CL, Brennan PA, Najman JM, Bor W. Early adversity and the prospective prediction of depressive and anxiety disorders in adolescents. *Journal of Abnormal Child Psychology*. 2005; 33: 13-24.