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Last, Cynthia; Perrin, Sean

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LUND UNIVERSITY

PO Box 117  
221 00 Lund  
+46 46-222 00 00

## Anxiety Disorders in African-American and White Children

Cynthia G. Last<sup>1,2</sup> and Sean Perrin<sup>1</sup>

*There are little available data on African-American children with anxiety disorders. Treatment-seeking African-American (n = 30) and white children (n = 139), with a current DSM-III-R anxiety disorder, were compared on sociodemographic background variables, clinical characteristics, and lifetime rates of specific DSM-III-R anxiety disorders. Overall, results suggested that the anxiety-disordered African-American and white children who sought treatment from an outpatient mental health facility were more similar than different. The two groups did, however, differ somewhat on several variables (trend only), including rates of school refusal, severity of primary anxiety disorder, lifetime prevalence of posttraumatic stress disorder, and total scores on the Fear Survey Schedule for Children-Revised. More specifically, white children were more likely to present with school refusal and higher severity ratings, while African American children were more likely to have a history of posttraumatic stress disorder and score higher on the FSSC-R. The impact of these findings and the need for additional research are discussed.*

While recent data have indicated that anxiety is one of the most frequent complaints among children and adolescents (Anderson, Williams, McGee, & Silva, 1987; Kashani et al., 1987), little is known about the similarities and differences between African-American and white children seeking treatment for anxiety. African-Americans have been largely overlooked by anxiety researchers, and there are few existing studies addressing this topic. As suggested by Neal and Turner (1991), comparison of the two groups' sociodemographic and clinical profiles may aid mental health professionals seeking to develop programs targeted to the particular needs of African-

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<sup>1</sup>Nova University, Ft. Lauderdale, Florida 33065.

<sup>2</sup>Address all correspondence, reprint requests, to Dr. Cynthia Last, Nova University, 3111 University Drive, Suite 307, Coral Springs, Florida 33065.

Americans. Also, by comparing these two groups, we may increase our understanding of the etiology of anxiety disorders by identifying risk factors for anxiety that reflect the particular sociocultural backgrounds of African-Americans and white Americans.

Neal and Turner (1991) reviewed the available data on anxiety in African-Americans and concluded that there is evidence, albeit limited, to suggest a relationship between anxiety and race (Kashani & Orvaschel, 1988; LaPouse & Monk, 1959; Nalven, 1970). In an early study of childhood fears, LaPouse and Monk (1959) found that African-American children reported significantly more fears than their white counterparts. The fears assessed in this study centered around the use of other persons' property (e.g., towels, utensils, dishes), animals, weather (lightning and thunder), and people (dentists, teachers, policemen, etc.).

Neal and Turner (1991) suggested that the African-American children in this study reported more fears because many of the fear eliciting stimuli (e.g., using other persons' property) reflected the real hostility directed toward African-Americans in the late 1950s. It is possible that such results might not be obtained today. Further, it is difficult to interpret these results as they were obtained without the benefit of standardized measures of childhood fear or DSM-III criteria for phobic disorders. We do not know if any of the children in this study met criteria for an anxiety disorder or if the two groups differed in their prevalence rates of anxiety disorder.

A study of Nalven (1970) found an increased prevalence of animal fears among African-American children from a low income area as compared to white children from the suburbs. Neal and Turner (1991) point out that this difference may be accounted for, at least in part, by semantic differences in African-American and white children. In the Nalven (1970) study, African-American children were more likely than whites to report fears of specific animals (e.g., a fear of rats) when interviewed. Conversely, white children were more likely to describe a general fear of animals (e.g., a fear of dangerous animals) than to identify specific animal fears. Thus, the prevalence of specific animal fears may have been overestimated by interviewers naive to these semantic differences between whites and non-whites, and who did not probe for specific animal fears in the white children.

As with the LaPouse and Monk (1959) study, no mention was made of the potentially confounding effect of socioeconomic status (SES), nor were standardized measures of anxiety or diagnostic criteria utilized in the Nalven (1970) study. It is not clear what differences Nalven would have observed had the two groups of children been selected from similar communities and assessed with current fear inventories or structured clinical interviews. However, both the LaPouse and Monk and Nalven studies do

point to a potential link between phobias and race that requires further analysis.

The link between anxiety and race was further explored in a recent epidemiological study employing the Diagnostic Interview for Children and Adolescents (Kashani & Orvaschel, 1988). Kashani and Orvaschel found an increased prevalence of anxiety disorders among a small sample of non-white children when compared to whites selected from a midwestern public school system. These results are, however, based on an extremely small sample of nonwhites ( $n = 8$ ) that included two Asian and six African-American children. Further, no data specifying the sociodemographic or diagnostic composition of the two groups separately were provided.

However limited, the results of these studies suggest that African-American children may be more likely to have anxiety disorders in general and phobias in particular than their white counterparts. Data from studies of African-American adults (Reiger et al., 1984; Robins et al., 1984; Warheit, Holzer, & Arey, 1975) also support this hypothesis as African-American adults were three times more likely to report simple phobias and had a higher incidence of agoraphobia than white adults. However, many of these studies with adults are subject to the same flaws as those described above in studies of African-American children. Taken together, it is clear that there is a need for methodologically sound research with African American children that addresses the relationship between anxiety and race.

In this study, we examine the similarities and differences between clinically referred African American and white children with anxiety disorders. We compare the two groups on sociodemographic background variables, lifetime prevalence rates of DSM-III-R anxiety disorders, and clinical characteristics. In addition, we attempted to address the limitations of previous studies by incorporating structured clinical interview and standardized self-report measures to assess childhood anxiety and DSM-III-R anxiety disorders, and by examining the influence of socioeconomic status on our results. Further, all diagnostic interviews were conducted by trained child clinical psychologists and the reliability of their diagnoses was assessed.

## METHOD

### *Subjects*

Subjects included a total of 169 anxiety-disordered boys and girls ranging in age from 5 to 17 years. Children in the African-American ( $n = 30$ ) and white groups ( $n = 139$ ) were consecutive referrals during a 4-year period (September 1985 through August 1989) to the Child and Adolescent

Anxiety Disorder Clinic (CAADC) at Western Psychiatric Institute and Clinic, University of Pittsburgh School of Medicine. The CAADC is an outpatient clinic which evaluates and treats school age children with anxiety disorders.

### *Procedure*

At the time of intake, the child and at least one parent were interviewed separately by a clinical psychologist with a modified version of the Schedule for Affective Disorders and Schizophrenia for School-Age Children (Present Episode) (K-SADS; Last, 1986). This version of the K-SADS was modified by Last to include comprehensive sections on all DSM-III anxiety disorders, using rating scales based on DSM-III criteria. In addition, this modified interview schedule covers past as well as current psychopathology. All of the clinical psychologists conducting interviews in this study were white, as are the authors.

In administering the K-SADS, the parent(s) alone is (are) interviewed first about the child ("parent interview" data), then the child is interviewed alone about him- or herself ("child interview" data). Ratings from the parent(s) and child are then combined by the clinician to form a summary rating for each item. After each interview, the clinician diagnosed the child, based on the summary K-SADS ratings, using the DSM-III-R classification system, but without regard to exclusionary rules delineated for the anxiety and affective disorders. This procedure has been outlined in detail by Barlow et al. (1986). Briefly, a child may meet the basic DSM-III-R criteria for two (or more) disorders, which because of different times of onset and/or antecedents, can be considered to be independent. In such cases, both diagnoses are assigned. If the child received two or more concurrent diagnoses, the disorder that caused the greatest impairment in functioning was designated as the primary diagnosis. Inclusion criteria for the study was a current DSM-III-R diagnosis of an anxiety disorder.

Interrater diagnostic agreement was obtained by having a second clinician independently review audiotapes of interviews. Reliability coefficients for diagnoses (lifetime) were computed for 71 of the 169 intake interviews conducted. Kappa coefficients of agreement were: any anxiety disorder = .86, panic disorder = .84, avoidant disorder = .86, obsessive compulsive disorder = .80, overanxious disorder = .91, posttraumatic stress disorder (PTSD) = 1.0, separation anxiety disorder = .94, simple phobia = .86, and social phobia = .92. In the event of a diagnostic disagreement, the diagnosis given by the live interviewer was used.

In addition to diagnostic information, information on certain sociodemographic and clinical variables were obtained at this time, including age and sex of the child, family socioeconomic status, disorder duration and severity, and presence of school refusal. Family socioeconomic status was assessed with the Hollingshead inventory (Hollingshead, 1975). Severity of disorder was assessed by clinicians using a 5-point Likert scale (0–4), with higher scores indicating greater severity. Severity ratings assigned by the interviewer reflected both the number of symptoms of the psychiatric disorder present and the resultant level of impairment.

Interrater agreement for severity ratings of primary anxiety disorder was obtained for 61 of the 169 intake interviews conducted where both raters agreed on the diagnosis. A Cronbach alpha of .71 was obtained for severity of primary anxiety disorder. Again, in the event of a disagreement, the severity rating given by the live interviewer was used.

Prior to being interviewed with the K-SADS, subjects were asked to complete several questionnaires designed to assess anxiety. These measures included the Fear Survey Schedule for Children-Revised (FSSC-R; Ollendick, 1983), the Children's Manifest Anxiety Scale-Revised (RCMAS; Reynolds & Paget, 1981), and the Modified State-Trait Anxiety Inventory for Children (STAIC-M; Fox & Houston, 1983). At this time, subjects also completed the Children's Depression Inventory (CDI; Kovacs, 1980), which assesses depressive symptomatology.

### *Data Analysis*

A series of  $2 \times 2$  chi-square analyses with Yates' correction for continuity was performed to test for differences among categorical variables (sex, socioeconomic status, school refusal, and diagnosis). Age-at-intake and severity and duration of disorder were compared with two-tailed *t*-tests. A multivariate analysis of covariance (MANCOVA) was performed on the raw scores for the four measures, with race as the independent variable and age-at-intake and socioeconomic status as the covariates.

Given the large number of comparisons performed, the per-comparison alpha was reduced to .002 (Bonferroni correction) to keep the experimentwise error rate under 5%. Comparisons that were significant at  $p < .05$  but  $> p = .002$  were treated as trend data. Also, given the unequal sample sizes in the two groups, tests for homogeneity of sample variances were performed along with the *t*-tests (*F*-test) and MANCOVA (Box M test). Sample variances for the two groups were found to be homogeneous for all comparisons.

## RESULTS

The sociodemographic and clinical characteristics of the two groups are presented in Table I. The African-American and white groups did not significantly differ on any of the sociodemographic or clinical variables. However, several trends in the data were observed. A greater percentage of subjects in the African-American group fell into the lowest Hollingshead category (Hollingshead score of V). The percentage of subjects in each of the five specific Hollingshead categories were I: white = 11.5%, African-American = 0%; II: white = 20.9%, African-American = 10%; III: white = 25.2%, African-American = 26.7%; IV: white = 25.2%, African-American = 23.3%; V: white = 17.3%, African-American = 40% ( $\chi^2 = 11.0, p < .03$ ). Also, clinicians rated the primary anxiety disorders of children in the white group as more severe than those of the children in the African-American group ( $t = 2.9, p < .01$ ) and there were more (%) school refusers in the white group at intake ( $\chi^2 = 4.0, p < .03$ ).

In order to determine if SES might account for the observed differences in severity ratings and school refusal, all subjects were grouped into either a high-SES ( $n = 91$ ) (Hollingshead score of I, II, or III) or Low-SES ( $n = 77$ ) (Hollingshead score of IV or V) group and compared for severity and the incidence of school refusal. No differences were observed for mean severity ratings of primary anxiety disorder [low-SES = 2.6 ( $SD = 0.9$ ), high-SES = 2.7 ( $SD = 0.9$ )]. However, there was a higher rate of school

**Table I.** Sociodemographic and Clinical Characteristics of African-American ( $n = 30$ ) and White ( $n = 139$ ) Anxiety-Disordered Children<sup>a</sup>

	Group	
	White	African-American
Age-at-intake, years ( <i>SD</i> )	12.6 (3.5)	11.6 (3.8)
Sex, % male	54.0	63.3
SES, % low (Hollingshead score of V)	17.3	40.0 <sup>b</sup>
Disorder duration, years ( <i>SD</i> )	2.2 (2.6)	2.6 (2.9)
Disorder severity, rating ( <i>SD</i> )	2.7 (0.9)	2.3 (0.8) <sup>c</sup>
School refusal, %	53.6	30.0 <sup>b</sup>

<sup>a</sup>Note: Disorder duration and severity is for the primary anxiety disorder at intake. SES = socioeconomic status.

<sup>b</sup> $p < .03$ .

<sup>c</sup> $p < .01$ .

refusal in the low-SES group as compared to the high-SES group (57.1% vs. 40.7%,  $\chi^2 = 3.9$ ,  $p < .05$ , respectively).

Rates of specific anxiety disorders, primary at intake and lifetime, for the two groups are presented in Table II. Only the comparison for lifetime prevalence rate of PTSD approached significance, with an increased lifetime prevalence of PTSD in the African-American group. Separation anxiety, overanxious disorder, and phobic disorders were the most frequently occurring disorders in both groups. While not significantly different, panic disorder, obsessive compulsive disorder, and social phobia were more frequent among whites, and simple phobia was more frequent among African-Americans than whites.

As with severity and school refusal, the influence of SES on the prevalence of PTSD was examined. Although nonsignificant, there was a greater prevalence of PTSD (lifetime) in the low-SES group as compared to the high-SES group that approached trend (7.7% vs. 1.1%,  $\chi^2 = 3.1$ ,  $p < .08$ , respectively). As there were a greater number of African-Americans from low socioeconomic backgrounds, we compared the prevalence of PTSD in whites and African-Americans from low socioeconomic backgrounds *only* and found 21.1% of the African-Americans with a lifetime history of PTSD as compared to only 3.4% of the whites ( $\chi^2 = 4.1$ ,  $p < .05$ ).

Lifetime prevalence rates of any depressive disorder (major depression, dysthymia, or depression not otherwise specified), major depression, and any behavioral disorder [conduct disorder, attention deficit-hyperactivity disorder (ADHD), oppositional disorder] also were compared for the two groups. The two groups did not differ on any of these rates (whites

**Table II.** Rates of Specific Anxiety Disorders in African-American ( $n = 30$ ) and White ( $n = 139$ ) Anxiety-Disordered Children

Specific anxiety disorder	White				African-American			
	Primary at intake		Lifetime		Primary at intake		Lifetime	
	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>
Separation anxiety disorder	26.6	37	41.0	57	23.3	7	36.7	11
Avoidant disorder	2.2	3	11.5	16	3.3	1	10.0	3
Overanxious disorder	12.9	18	28.1	39	20.0	6	23.3	7
Panic disorder	12.9	18	16.5	23	3.3	1	3.3	1
Obsessive compulsive disorder	7.9	11	12.9	18	3.3	1	6.7	2
PTSD <sup>a</sup>	2.2	3	2.2	3	10.0	3	13.3	4
Simple phobia	18.0	25	40.3	56	26.7	8	50.0	15
Social phobia	17.3	24	36.7	51	10.0	3	26.7	8

<sup>a</sup>White vs. African-American,  $p < .02$  (lifetime). PTSD = posttraumatic stress disorder.

vs. African-Americans: any depression—33.8% vs. 20.0%; major depression—25.2% vs. 16.7%; and any behavior disorder—14.4% vs. 13.3%).

Mean raw scores on the FSSC-R, RCMAS, STAIC-M, and CDI for the two groups are presented in Table III. A significant multivariate effect was obtained [ $F(5, 108) = 2.53, p = .033$ ] for the comparison of the two groups on the four measures; however, only the FSSC-R was significant at the univariate level ( $F = 4.56, p = .035$ ). African-American children had significantly higher total scores on the FSSC-R than did the white children. Socioeconomic status and age-at-intake both were significantly related to raw scores on the FSSC-R (beta =  $-.22, t = -.25, p = .015$ ; beta =  $-.19, t = -.22, p = .031$ ) and the means for this measure are corrected for these two covariates. The scores for both groups on the four measures are comparable to other groups of anxiety-disordered children.

## DISCUSSION

Overall, the results of this study suggest that anxiety-disordered African-American and white children who seek treatment from an outpatient mental health facility are more similar than different diagnostically, sociodemographically, and in terms of clinical features. The two groups did not significantly differ with regard to age, sex, duration of disorder, or lifetime history of a depressive disorder. There was a trend toward differences between the two groups for the incidence of school refusal, clinical severity

**Table III.** Mean Scores and Standard Deviations (in Parentheses) for the FSSC-R, RCMAS, STAIC-M, and CDI in African-American ( $n = 19$ ) and White ( $N = 97$ ) Anxiety-Disordered Children<sup>a</sup>

	Group		Univariate $p <$
	White	Black	
FSSC-R <sup>b</sup>	130.2 (28.5)	145.3 (21.4)	.04
RCMAS	14.4 (7.1)	12.8 (7.5)	n.s.
Trait anxiety	16.1 (4.1)	16.5 (4.2)	n.s.
State anxiety	13.1 (3.3)	12.5 (2.6)	n.s.
CDI	13.1 (7.4)	12.5 (6.3)	n.s.

<sup>a</sup>FSSC-R = Fear Survey Schedule for Children-Revised; RCMAS = Children's Manifest Anxiety Scale-Revised; STAIC-M = Modified State-Trait Anxiety Inventory for Children; CDI = Children's Depression Inventory.

<sup>b</sup>Scores are corrected for age and socioeconomic status.

ratings of primary anxiety disorder, lifetime prevalence of PTSD, and total scores on the FSSC-R.

A little more than half of the white group (53.6%) had symptoms of school refusal as compared to 30.0% for the African-American group. However, within both groups, the majority of the school-refusing children were from lower socioeconomic backgrounds. Further, when collapsed across races, there were more school refusers (trend only) from lower socioeconomic backgrounds than from higher socioeconomic backgrounds (57.1% vs. 40.7%, respectively). Thus, white children from lower socioeconomic backgrounds were more likely to report school refusal than African-American children from lower socioeconomic backgrounds.

The increased rate of school refusal in the white vs. African-American children is supported by the findings of a recent study by Neal, Lily, and Zakis (in press) on African-American and white children and school related anxiety. Neal et al. (in press) factor-analyzed the responses of 109 African-American and 124 white children on the FSSC-R and found a three-factor solution for the African-American children that did not include school fears, while the five-factor solution found for the white children did. Neal et al. (in press) suggested that this absence of school fears in African-American children may reflect either the relative comfort that African-American children experience in school or a shift in competency concerns away from classroom tasks to other areas (Neal et al., in press). In other words, the incidence of school refusal may be lower among African-Americans than among whites because of lower levels of performance anxiety around school-related tasks. Thus, African-American families may be less likely than whites to seek treatment for school refusal.

It is also possible that the higher rate of school refusal in the white children is related to their higher severity ratings when compared to the African American children (white = 2.7 vs. African-American = 2.3). In testing this hypothesis we found that the primary anxiety disorders of school refusers ( $n = 84$ ) were rated as more severe than nonschool refusers ( $n = 81$ ) (2.9 vs. 2.3,  $p < .001$ , two-tailed). However, when we eliminated school refusers from our comparison of the severity ratings for the white and African-American groups, the white children still were rated as more severe (2.44 vs. 1.90,  $p < .02$ , two-tailed). Therefore, the severity differences between the two groups cannot be accounted for solely by the increased prevalence of school refusal in the white group.

Also, the higher clinician severity ratings assigned to the white children as compared to the African-American children could not be accounted for by socioeconomic status differences between the two groups. Collapsing across race, children from high and low socioeconomic backgrounds received similar severity ratings (2.7 and 2.6, respectively). Further, the se-

verity ratings do not appear to be related to diagnostic differences between the two groups as none were observed.

The somewhat higher severity ratings assigned to the white children may reflect a cultural/racial bias by the white interviewers to focus on externalizing symptoms of psychiatric disorder rather than the internalizing symptoms usually associated with anxiety when evaluating the African-American children. Thus, African-American children with internalizing symptoms of anxiety similar in severity to those of whites might have their anxiety disorder rated as less severe. However, anxiety-disordered African-American children seeking treatment may actually be less severely disordered than their white counterparts. Additional research is needed determine if real severity differences or any systematic biases exist in the diagnostic evaluations of African-American children by white vs. African-American psychologists.

The somewhat increased rate of PTSD in the African-American group observed in this study may be related to the higher proportion of low-socioeconomic-status children in this group rather than race per se. Though a trend only, there was a greater prevalence of PTSD (lifetime) in children from lower socioeconomic backgrounds as compared to those from higher socioeconomic backgrounds (7.7% vs. 1.1%, respectively). In fact, among children from lower socioeconomic backgrounds with PTSD, 21.1% were African-American and only 3.4% were white. Neal and Turner (1991) have pointed out that African-Americans from low socioeconomic backgrounds may be at greater risk for the development of PTSD because of the greater number of stressors (e.g., crime, abuse, poverty) encountered by African-Americans from low socioeconomic communities.

Finally, African-American children scored significantly higher on the FSSC-R (total scores) than did whites, after correcting for age-at-intake and socioeconomic status, indicating that the African-American children in our study reported a greater number of phobic responses than did the white children. A multivariate analysis of the specific subscales of the FSSC-R revealed no significant differences between African-Americans and white children, though African-Americans scored higher on all of the subscales. The diagnostic data for the two groups suggest that the higher scores on the FSSC-R observed for the African-American children in this study may be related to the higher lifetime prevalence of simple phobias observed in this group as compared to the white children.

While the differences between the two groups for the prevalence of simple and social phobias were nonsignificant, the observed differences on the FSSC-R suggest that African-Americans are more likely to report phobic responses in general than whites, and, in particular, phobic responses that would come under the diagnostic category of simple phobias. This ob-

servation is consonant with the previous findings of LaPouse and Monk (1959) and Nalven (1970) who found an increased prevalence of simple phobias in African American children as compared to whites. However, our results are based on a small, treatment-seeking sample of African-Americans, and the lack of *significant* differences between the African-American and white children in this study for simple and social phobias suggests that further research is needed to determine if there is a relationship between race and the prevalence of phobic disorders.

Aside from these few observed differences, it would appear from these data that anxiety-disordered African-American children *seeking treatment* are very similar to their white counterparts. Separation anxiety, over-anxious disorder, and phobias predominated in both groups. Both the white and African-American children scored in the pathological range on widely used, standardized self-report measures of childhood fear and anxiety. Primary anxiety disorder duration did not differ, nor did lifetime prevalence rates of depressive and behavioral disorders.

In interpreting the results of our study, several points should be kept in mind. First, our findings are for clinically referred children, and do not address potential differences/similarities between nonreferred (community samples) of anxiety-disordered African-American and white children. Large-scale epidemiological investigations are needed to provide answers to such questions. Second, it should be noted that although approximately one-third of youngsters referred to Western Psychiatric Institute and Clinic at the University of Pittsburgh School of Medicine are African-American, at our anxiety specialty clinic African-American children constituted only 18% of our patient flow.

There are several possible reasons for the under-representation of African-American youngsters at our specialty clinic. First, it is possible that African-American youngsters are less likely than their white counterparts to present for treatment for anxiety disorders because they are less likely to have such conditions. Alternatively, it is possible that African-American children are just as likely as white children to have anxiety problems, but are *not identified* by families and/or psychiatric personnel as having significant anxiety symptoms. This may be due to cultural/racial biases to attend to externalizing symptoms of behavioral disorders, as opposed to internalizing symptoms often present in anxiety disorders.

Further, the present study does not address the stability of diagnoses over time or differential treatment effects for whites and African-Americans. Longitudinal and treatment outcome studies with African-Americans are needed to further elucidate the relationship between anxiety and race and the particular treatment needs of African-Americans. Future research should attempt to replicate and extend the findings observed in our study

with larger samples of African-Americans from diverse sociodemographic backgrounds, both seeking treatment and in the community.

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