

## **Do Problems of Clinic-Referred African-American Children Overlap With the Child Behavior Checklist?**

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*Many factors contribute to children's psychopathology. African-American children, members of the largest U.S. minority group, are reportedly at high risk for psychopathology, but researchers and developers of diagnostic measures seldom focus on them. We surveyed the clinic records of 1,605 African-American children, ages 4–18. Coders recorded children's problems, their gender, and age. They coded children's problems according to the Child Behavior Checklist (CBCL). Overlap between some problems African-American children presented and CBCL items emerged but other problems did not match CBCL items. For problems which matched the CBCL, associations between such problems and children's age emerged and boys had more problems than girls. The content and cultural validity of the CBCL for African-American children may, however, be questionable.*

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A criticism leveled against most behavioral science research is its limited focus on children of color such as African-American children (McLoyd, 1998), especially since as oppressed minorities, African-American children are believed to be at risk for the development of psychopathology. Another weakness is that research that focuses on or includes African-American children often

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indiscriminately uses diagnostic measures across ethnic-groups (Knight & Hill, 1998; Westermeyer, 1987). Such measures often fail to capture uniqueness in African-American children's problem presentation, which is often driven by sociocultural customs and socialization practices (Malgady & Rogler, 1988).

Most measures on children's problems including the Child Behavior Checklist (CBCL) (Achenbach 1991) on which this study focuses credit much of their content to expertise of professionals who research and treat children and the literature base on children's problems. Unfortunately, such literature usually focuses primarily on White middle-class children. Professionals who treat or conduct research on children and those that develop measures are usually White and middle class. Such professionals usually know very little about African-American children's culture. Thus, most child assessment measures lack content (Haynes, Richard, & Kubany 1995) and cultural validity (Guerra & Jagers, 1998) for African American children as they fail to include item content reflecting the psychological problems that such children present (Fabrega, Ulrich, & Mezzich, 1993; Sandoval, 1998). This problem may have severe consequences for African Americans as content validity forms the foundation on which other forms of validity (e.g., construct validity) are built (Guerra & Jagers, 1998; Haynes et al., 1995; Pumariiega, 1996). Using such measures to assess African Americans risks diagnostic error (Barbarin, 1998; Frisby, 1998).

A symbiotic relationship exists between assessment, research, and treatment. Effective intervention is guided by information derived from valid measures and such measures are required for research, which also informs intervention. This interdependence makes any problem that results in poor measurement validity far reaching in its consequences. Accurate base rate information is extremely important for adequate assessment as measurement norms depend heavily on accurate knowledge of base rate information (Gray-Little & Kaplan, 1998; Pumariiega, 1996; Taylor & Katz, 1996). Since most measurement development methodologies include numbers of African Americans relative to their ratio in the sample as they do in the U.S. population the absolute numbers of African-American children in such studies are usually much too small to obtain meaningful problem base rates (Pumariiega, 1996; Taylor & Katz, 1996). Absence of accurate base rate information can compromise the applicability of norms to African Americans. This problem that can contribute to misclassification, inaccurate research findings, improper diagnostic decisions, and subsequently result in poor treatment outcomes for African-American children (Johnson, 1993; Reid, 1995).

A pressing need therefore exists for rigorous research focused specifically on measurement issues pertaining to African-American children and the base rates of their problems. Such studies can also determine whether the content of psychological constructs identified in other socioethnic groups are evident for African-American children (Phinney & Landin, 1998; Steinberg & Fletcher, 1998). Techniques used in descriptive epidemiological studies (MacMahon &

Trichopoulos, 1996), which describe the prevalence and magnitude of pathology in particular, groups and subgroups (e.g., African-American boys versus girls of various ages) may apply to research on African-American children. Descriptive epidemiological studies can also help in identifying unique symptoms specific racial groups such as African Americans present (MacMahon & Trichopoulos, 1996). Such studies focus on questions of interest as opposed to a priori hypotheses. Answers to these questions can lead to the formulation of hypotheses and theoretical models that can guide subsequent research on African-American children (Kamphaus et al., 1999; MacMahon & Trichopoulos, 1996).

Using a descriptive approach, we surveyed the intake clinic records of referred African-American children ages 4 to 18 seen in outpatient inpatient settings throughout Michigan. One goal of our study was to learn whether the content of African-American children's behavior and emotional problems, as reported by adults to clinicians during intake interviews, matched items of the widely used CBCL (Achenbach, 1991). Recent national (e.g., Achenbach, 1991) and international (e.g., Lambert Weisz & Knight, 1989; Lambert et al., 1999) research on clinic population samples of racially heterogeneous and African-American children have revealed age and gender differences in the total number and type of problems children present. Therefore, a second goal of our study was to determine whether the total number and specific types of problems varied according to age and gender of African-American children.

## METHOD

### Research Design and Sample Characteristics

Presenting problems from clinic records of 1,605 African-American children ages 4–18 were obtained from 9 ambulatory clinics and 5 hospitals in Detroit, Flint, Ann Arbor, Lansing, Benton Harbor, Grand Rapids, and Muskegon. Children's mean age was 10.48,  $SD = 3.71$ , 662 were girls, and 983 were boys. The sample included cases seen between August 1994 and August 1995.

### Data Collection and Problem Classification Procedures

Four trained recorders reviewed the full written intake reports and extracted the presenting problems clinicians recorded during their first clinical interviews with children's parents. The recorders coded problems using the empirically based classification categories of the CBCL, a widely used measure in national and international settings. The CBCL contains demographic items, 7 social competence items, and 118 problem items on which parents rate their children. Principal

components analyses of parents' CBCL problem ratings on clinic-referred children have yielded eight syndromes labeled Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior, and Aggressive Behavior. Second-order principal factor analyses of the syndromes have yielded the internalizing and externalizing groupings of the syndromes (Achenbach, 1991). All problems were grouped for analyses according to these 10 categories and the total number of problems. However, absence of competence information and some demographic information such as socioeconomic status (SES) made it impossible to focus on such variables.

### *Method of Problem Coding*

The coders coded each child's presenting problems by matching them according to the 118 items on the CBCL according to two steps. First, the coders used a sample of 20 cases as training cases, compared their codings with each other, and reconciled differences when they occurred. Second, the 1605 cases were randomly assigned to one of the four coders but all coders coded the same randomly selected set of 50 cases, without the knowledge that those cases would be used to measure agreement. Agreement among the four coders was calculated using a percentage statistic (i.e., agreement among all 4 coders = 100%, agreement among 3 coders = 75%, agreement between 2 coders = 50% and no agreement between coders = 0%). For 395 presenting problems on the 50 reliability cases, the four coders had a 70% agreement regarding which of the 118 CBCL items each presenting problem appropriately matched.

### *Adjustment of CBCL-Based Scores for Data Analyses*

Procedures developed by Weisz et al. (1987) were used to calculate the total number of each child's problems that fit each CBCL syndrome and the internalizing and externalizing syndrome groupings derived from factor-analytic studies of the CBCL (Achenbach, 1991). For example, the number of problems that matched the Withdrawn syndrome for each child was totaled, divided by 9, the total number of CBCL problems that load on that syndrome and was multiplied by 100 to convert it to percentages. To account for variations in parents' verbal productivity during intake interviews, we divided the adjusted Withdrawn scores by the total number of problems listed for each child. We then multiplied this score by 14, the approximate ceiling for the number of problems listed. Parallel procedures were followed in calculating the scores for the seven other syndromes and the internalizing and externalizing scores.

## RESULTS

### CBCL Problems

Using each problem as the focus of analysis, log linear analyses were used to calculate whether differences for the number of children for whom parents reported specific problem differences according to age, gender, SES, and ambulatory status. Items for which significant effects emerged on one or more variables are listed in Table I. No significant interaction effects involving ambulatory status emerged, but main effects emerged for ambulatory status for 11 of the CBCL problems. Significantly larger percentages of younger children's parents reported 22 CBCL items to clinicians during intake interviews. By contrast, significantly larger proportions of older children's parents reported problems matching 15 CBCL items. The proportions of boys' parents who reported 11 specific problems were significantly higher than those of girls. The converse gender effect was true on eight CBCL problems. Finally a significant age  $\times$  gender interaction emerged for one item (i.e., "61. Poor school work") only and indicated that the significantly larger proportions of older boys' parents reported this item but that no gender effect emerged for the subsample of younger children.

### Non-CBCL Problems

Table II lists the non-CBCL problems that 1% or more ( $n > 16$ ) of the adults accompanying African-American children reported. The problems are listed in descending order reflecting those that the highest number of parents reported at the top of the list ( $N = 393$ ; 24.5%) and those that the least number of parents ( $n = 17$ ; 1.1%) reported at the bottom. We have no information regarding how the non-CBCL problems might form clusters or syndromes but most (i.e., two-thirds) of the twenty-four problems seemingly reflect externalizing types of problems (e.g., rude to others, homicidal behavior) as they are exhibited outward in the environment. Table II also lists the results of log linear analyses that tested for gender  $\times$  age interactions and for gender and age main effects on each problem item. Gender  $\times$  age interactions emerged for two items and main effects emerged for eight items.

### Least Prevalent Presenting CBCL Problems

No adults reported children's problems that matched CBCL problem "31. Afraid he or she might do something bad." Moreover, three or less (i.e.,  $<0.2\%$ ) of the 1,605 adults reported problems that matched 20 of the CBCL problems.

Table I. Child Behavior Checklist Items Reported for African-American Children

Problem	Age < 12				Age ≥ 12	
	Outpatient	Inpatient	Boys	Girls	Age < 12	Age ≥ 12
3. Argues a lot <sup>OUT</sup>	87, 6.0%	3, 1.8%	59, 6.0%	31, 5.0%	48, 5.6%	42, 5.6%
8. Can't concentrate <sup>M,Y</sup>	252, 17.5%	32, 18.9%	221, 22.5%	63, 10.1%	218, 25.4%	66, 8.8%
14. Cries a lot <sup>F,Y</sup>	103, 7.2%	8, 4.7%	52, 5.3%	59, 9.5%	71, 8.3%	40, 5.4%
15. Cruel to animals <sup>IN</sup>	8, 0.6%	6, 3.6%	12, 1.2%	2, 0.3%	9, 1.0%	5, 0.7%
16. Cruel to animals <sup>M,Y,IN</sup>	272, 18.9%	52, 30.8%	214, 21.8%	110, 17.7%	207, 24.1%	117, 15.7%
17. Daydreams <sup>Y</sup>	26, 1.8%	4, 2.4%	17, 1.7%	13, 2.1%	23, 2.7%	7, 0.9%
18. Harms self <sup>O,IN</sup>	125, 8.7%	35, 20.7%	87, 8.9%	73, 11.7%	65, 7.6%	95, 12.7%
21. Destroys others' things <sup>S,Y</sup>	36, 2.5%	6, 3.6%	30, 3.1%	12, 1.9%	32, 3.7%	10, 1.3%
22. Disobeys at home <sup>M,Y</sup>	282, 19.6%	33, 19.5%	208, 21.2%	105, 16.9%	191, 22.3%	122, 16.3%
23. Disobeys at school <sup>M,Y,OUT</sup>	275, 19.1%	21, 12.4%	217, 22.1%	78, 12.5%	192, 22.4%	103, 13.8%
25. Not get along with children <sup>Y</sup>	64, 4.5%	12, 7.1%	53, 5.4%	23, 3.7%	51, 5.9%	25, 3.3%
29. Afraid of things <sup>F,Y</sup>	38, 2.6%	2, 1.2%	17, 1.7%	23, 3.7%	29, 3.4%	11, 1.5%
34. Feels others are out to get him/her <sup>IN</sup>	7, 0.5%	4, 2.4%	7, 0.7%	4, 0.6%	4, 0.5%	7, 0.9%
35. Feels worthless <sup>F,O,OUT</sup>	49, 3.4%	1, 0.6%	23, 2.3%	27, 4.3%	14, 1.6%	36, 4.8%
37. Fights a lot <sup>M,Y</sup>	310, 21.6%	30, 17.8%	241, 24.5%	98, 15.8%	212, 24.7%	127, 17.0%
39. Hangs around troublemakers <sup>O</sup>	53, 3.7%	2, 1.2%	36, 3.7%	19, 3.1%	11, 1.3%	44, 5.9%
40. Hears sounds <sup>O</sup>	44, 3.0%	9, 5.3%	30, 3.1%	23, 3.7%	16, 1.9%	37, 5.0%
41. Impulsive <sup>M,Y</sup>	189, 13.1%	23, 13.6%	168, 17.1%	44, 7.1%	168, 19.6%	44, 5.9%
43. Tends to lie or cheat <sup>Y</sup>	134, 9.3%	17, 10.1%	99, 10.1%	52, 8.4%	94, 11.0%	57, 7.6%
46. Nervous movements <sup>Y</sup>	27, 1.9%	2, 1.2%	21, 2.1%	8, 1.3%	21, 2.4%	8, 1.1%
47. Nightmares <sup>Y</sup>	68, 4.7%	7, 4.1%	38, 3.9%	37, 5.9%	52, 6.1%	23, 3.1%
50. Too fearful or anxious <sup>Y</sup>	28, 1.9%	1, 0.6%	18, 1.8%	11, 1.8%	21, 2.4%	8, 1.1%
61. Poor school work <sup>IN</sup>	230, 16.0%	29, 17.2%	169, 17.2%	90, 14.5%	122, 14.2%	137, 18.3%
65. Refuses to talk <sup>IN</sup>	3, 0.2%	2, 1.2%	3, 0.3%	2, 0.3%	2, 0.2%	3, 0.4%
67. Runs away from home <sup>F,O</sup>	68, 4.7%	4, 2.4%	35, 3.6%	37, 5.9%	18, 2.1%	54, 7.2%
72. Sets fires <sup>M,Y</sup>	56, 3.9%	9, 5.3%	57, 5.8%	8, 1.3%	50, 5.8%	15, 2.0%

73. Sexual problems <sup>F,Y</sup>	32, 2.2%	1, 0.6%	14, 1.4%	19, 3.1%	26, 3.0%	7, 0.9%
77. Sleeps more than most <sup>O</sup>	23, 1.6%	1, 0.6%	13, 1.3%	11, 1.8%	6, 0.7%	18, 2.4%
78. Plays with feces <sup>IN</sup>	1, 0.1%	2, 1.2%	3, 0.3%	0, 0.0%	2, 0.2%	1, 0.1%
79. Speech problem <sup>M,Y,OUT</sup>	37, 2.6%	12, 0.8%	38, 3.9%	11, 1.8%	29, 4.5%	10, 1.3%
80. Stares blankly <sup>IN</sup>	1, 0.1%	3, 1.8%	2, 0.2%	2, 0.3%	3, 0.3%	1, 0.1%
82. Steals outside home <sup>M,O</sup>	113, 7.9%	12, 7.1%	90, 9.2%	35, 5.6%	47, 5.5%	78, 10.4%
84. Acts strange <sup>IN</sup>	13, 0.9%	5, 3.0%	7, 0.7%	11, 1.8%	10, 1.2%	8, 1.1%
86. Stubborn <sup>OUT</sup>	79, 5.5%	1, 0.6%	45, 4.6%	35, 5.6%	50, 5.8%	30, 4.0%
87. Sudden mood swings <sup>F,O</sup>	62, 4.3%	5, 3.0%	32, 3.3%	35, 5.6%	25, 2.9%	42, 5.6%
97. Threatens people <sup>O,IN</sup>	42, 2.9%	13, 7.7%	36, 3.7%	19, 3.1%	22, 2.6%	33, 4.4%
101. Skips school <sup>O</sup>	110, 7.6%	6, 3.6%	62, 6.3%	54, 8.7%	18, 2.1%	98, 13.1%
103. Sad, depressed <sup>F,O</sup>	211, 14.7%	20, 11.8%	109, 11.1%	122, 19.6%	60, 7.0%	171, 22.9%
104. Unusually loud <sup>Y,IN</sup>	21, 1.5%	6, 3.6%	19, 1.9%	8, 1.3%	20, 0.3%	7, 0.9%
105. Uses alcohol or drugs <sup>O,OUT</sup>	71, 4.9%	2, 1.2%	48, 4.9%	25, 4.0%	6, 0.7%	67, 9.0%
106. Destroys property <sup>M</sup>	58, 4.0%	8, 4.7%	51, 5.2%	15, 2.4%	42, 4.9%	24, 3.2%
108. Wets bed <sup>Y</sup>	78, 5.4%	11, 6.5%	58, 5.9%	31, 5.0%	75, 8.7%	14, 1.9%
111. Withdrawn <sup>O</sup>	125, 8.7%	12, 7.1%	84, 8.5%	53, 8.5%	59, 6.9%	78, 10.4%

Note. Only problem items with significant effects from loglinear analyses are included M, F, Y, O, OUT, IN indicate significant ( $p \leq .05$ ) chi-squares for gender, age, and clinic status, with each letter representing the group that had the highest proportion. M = males, F = females, Y = younger (ages 4-11), O = older (ages 12-18), OUT = outpatient, IN = inpatient, INT = significant age x gender interaction, with significantly higher proportions of older males' parents reporting this problem than older females, but no significant gender differences in the younger age group.

<sup>a</sup>Numbers in the left of each column = sum of respondents.

**Table II.** Most Frequently Reported Non-Child Behavior Checklist Items for African-American Children

Problem	Outpatient		Inpatient	Boys		Girls		Age < 12		Age ≥ 12		
	N	%		N	%	N	%	N	%	N	%	
Uncooperative <sup>Y</sup>	343	23.9%	51	30.2%	250	25.4%	143	23.0%	230	26.8%	163	21.8%
Mischievous or naughty <sup>M,Y</sup>	149	10.4%	13	7.7%	115	11.7%	47	7.6%	119	13.9%	43	5.8%
Easily frustrated <sup>M</sup>	80	6.5%	13	7.9%	66	6.7%	26	4.2%	59	6.9%	33	4.4%
Bad attitude <sup>OUT</sup>	74	6.1%	3	1.8%	43	4.4%	34	5.5%	41	5.5%	41	5.5%
Refuses to do school work <sup>Y</sup>	65	4.5%	3	1.8%	49	5.0%	19	3.1%	47	5.5%	21	2.8%
Sexually inappropriate <sup>IN</sup>	48	3.9%	13	7.9%	33	3.4%	28	4.5%	40	4.7%	21	2.8%
Disrespectful	46	3.8%	2	1.2%	28	2.8%	20	3.2%	27	3.1%	21	2.8%
Deliberately annoys others <sup>M</sup>	44	3.0%	1	0.6%	34	3.5%	11	1.8%	29	3.4%	16	2.1%
Talks/snaps back <sup>F</sup>	43	3.5%	3	1.8%	20	2.0%	25	4.0%	27	3.1%	18	2.4%
Lacks self confidence <sup>INT1</sup>	36	2.5%	1	0.6%	23	2.3%	14	2.3%	17	2.0%	20	2.7%
Rude to others <sup>Y</sup>	30	2.1%	3	1.8%	18	1.8%	15	2.4%	25	2.9%	8	1.1%
Poor relationships with adults <sup>O</sup>	31	2.2%	2	1.2%	20	2.0%	13	2.1%	11	1.3%	22	2.9%
Homicidal behavior	25	2.0%	4	2.4%	16	1.6%	13	2.1%	14	1.6%	15	2.0%
Doesn't express feelings	26	2.1%	1	0.6%	20	2.0%	7	1.1%	13	1.5%	14	1.9%
Doesn't finish tasks <sup>INT2</sup>	22	1.8%	2	1.2%	17	1.7%	9	1.4%	18	2.1%	6	0.8%
Forgets easily	22	1.5%	1	0.6%	14	1.4%	9	1.4%	15	1.7%	8	1.1%
Leaves home without permission	22	1.5%	1	0.6%	14	1.4%	9	1.4%	3	0.3%	20	2.7%
Irritable	17	1.2%	4	2.4%	12	1.2%	9	1.4%	13	1.5%	8	1.1%
Talks to self	16	1.1%	4	2.4%	9	0.9%	11	1.8%	7	0.8%	13	1.7%
Unmotivated	16	1.3%	2	1.2%	10	1.0%	8	1.3%	12	1.4%	7	0.9%
Carries weapon <sup>O</sup>	16	1.3%	2	1.2%	14	1.4%	3	0.5%	6	0.7%	12	1.6%
Irresponsible	16	1.3%	1	0.6%	12	1.2%	5	0.8%	9	1.0%	14	1.9%
Bossy	13	1.1%	4	2.4%	12	1.2%	5	0.8%	13	1.5%	8	1.1%

*Note.* Only items with significant effects are included. M, F, Y, O, OUT, IN indicate significant ( $p < .05$ ) chi-squares for gender, age, and clinic status, with each letter representing the group that had the highest proportion. M = males, F = females, Y = younger (ages 4-11) O = older (ages 12-18, OUT = outpatient, IN = inpatient, INT1 = significant age × gender interaction, with significantly larger proportions of older males' parents than younger males' parents reporting this problem, INT2 = no significant age differences for females, INT2 = significant age × gender interaction, in which larger proportions of younger males' parents reporting this item than the proportion of older males but no significant gender differences in the older age group.

<sup>a</sup>Numbers in the left of each column = sum of respondents.



### Inpatient Versus Outpatient Problem Differences

We assumed that African-American children are hospitalized for a variety of reasons but we also expected that children with specific types of syndromes (e.g., thought problems) might be more likely to be admitted to inpatient facilities. Therefore, we tested whether hospitalized children differed from their nonhospitalized peers according to the eight CBCL syndromes, the internalizing and externalizing groupings, and according to the total number of all problems.

To match Achenbach's (1991) age groupings, we divided age into three groups (4–5, 6–11, and 12–18) and performed a series of 2 (gender)  $\times$  3 (age-group)  $\times$  2 (inpatient vs. outpatient status) General Linear Analyses of Variance (ANOVAs) for each variable of interest. The only exception was internalizing versus externalizing problems where a 2 (gender)  $\times$  3 (age-group) repeated measures Analysis of Variance (ANOVA) with internalizing versus externalizing problem type as the repeated measures factor was performed. To limit the chance of Type I error, we used the Bonferroni correction (Neter & Wasserman 1987) which set alpha at .005. Cohen's (1988) criteria were used to interpret the effect sizes (ES) of all significant findings. Cohen classifies ANCOVA ESs as small if they account for 1.0% to 5.9% of the variance, medium if they account for 5.9% to 13.8%, and large if they account for more than 13.8%.

The analyses showed no significant interactions or main effects involving hospital status (i.e., inpatient vs. outpatient) for the eight syndromes, total CBCL, and total problem (including CBCL and non CBCL) scores (all  $ps > .005$ ). Similarly, no within-subjects interaction between problem-type and hospital status emerged ( $p > .005$ ). However, the repeated-measure ANOVA revealed a significant between-subjects effect for hospital status,  $F(1, 1,585) = 9.40$ ,  $p < .0022$ ,  $ES < 1\%$ . These results indicate that, across problem type, parents of ambulatory African-American children reported significantly more problems than parents of hospitalized children.

We also determined whether parents of hospitalized children were more likely than parents of ambulatory children to report more of the severest problems (e.g., suicidal behavior), which would almost always lead to the consideration of hospitalization in almost in almost any circumstance. We used a documented method (see Lambert et al., 1999 for detailed description) of distinguishing between severe and less serious CBCL problems. Thus, 23 of the 118 CBCL problems were classified as severe. We used the same procedure to adjust for verbosity of parents' reports described above under Method. Next, we performed a 2 (gender)  $\times$  3 (age-group)  $\times$  2 (inpatient vs. outpatient status) Analyses of Variance (ANOVA), with the sum of the 23-item severe items as the dependent variable. This analysis yielded a significant effect for hospital status, where parents of hospitalized children reported significantly more severe problems than parents of nonhospitalized children,  $F(1, 1589) = 12.70$ ,  $p < .0004$ ,  $ES < 1\%$  ( $ms = 13.42$  and  $9.94$ ;  $SDs = 13.27$  and  $13.16$  respectively).

**Table III.** Summary of Simultaneous Regression Analyses on Syndrome, Internalizing, Externalizing, and Total Problem Scores  $N = 1,605$ 

Predictors	Raw Weights	Standardized Weights
Withdrawn ( $R^2 = .050$ )		
Age*	1.125	.184
Gender*	5.016	.108
Anxious/Depressed ( $R^2 = .046$ )		
Age*	.620	.150
Gender*	3.913	.124
Thought Problems ( $R^2 = .005$ )		
Age	.239	.052
Gender	1.151	.033
Attention Problems ( $R^2 = .097$ )		
Age*	-1.808	-.259
Gender*	-6.648	-.125
Delinquent Behavior ( $R^2 = .052$ )		
Age*	1.115	.204
Aggressive Behavior ( $R^2 = .020$ )		
Age*	-.396	-.084
Withdrawn ( $R^2 = .050$ )		
Age*	-.396	-.084
Gender*	-3.735	-.104
Internalizing ( $R^2 = .045$ )		
Age*	.428	.151
Gender*	2.777	.128
Externalizing ( $R^2 = .029$ )		
Age*	.199	.060
Total Problems ( $R^2 = .059$ )		
Age*	-.071	-.115
Gender*	-.472	-.101

\*  $p < .0045$ .

### Gender and Age Differences in CBCL Problem Scores

We performed 11 simultaneous multiple regression analyses on each of the eight syndromes, internalizing and externalizing problems, and total problems as criterion variables. We used the Bonferroni correction (Neter & Wasserman, 1987) to control for Type I error. Thus, we used an alpha level of .0045. Table III lists the results of these analyses.

#### *Interactions*

No significant two-way interactions emerged for any of the scores.

#### **Age Effects**

As documented in Table III, significant age effects emerged for Withdrawn, Anxious/Depressed, Attention Problems, Delinquent Behavior, Aggressive

Behavior, and internalizing, externalizing, and total problems. Parents reported that younger children presented more Attention Problems, Aggressive Behavior and total problems than older children. The converse was true for Withdrawn, Anxious/Depressed, Delinquent, and internalizing and externalizing problems.

### Gender Effects

Significant gender effects (see Table III) indicated that parents reported more Withdrawn, Anxious/Depressed, and internalizing problems for girls than boys. By contrast, significantly more Attention Problems, Aggressive Behavior, and total problems were reported for boys.

### Internalizing Versus Externalizing Scores

We performed a 2 (gender)  $\times$  3 (age-group) repeated measures analysis of variance (ANOVA) with internalizing versus externalizing problem type as the repeated measures factor. The Bonferroni correction was used to limit the chance of Type I error. Cohen's (1998) criteria were used to interpret the sizes of significant effects (ES). The analysis revealed a problem type  $\times$  gender interaction  $F(1, 1,586) = 32.24, p < .0001, ES = \text{small} (2.0\%)$ . Components of this interaction revealed that parents reported more externalizing than internalizing problems in all children. However, parents also reported that boys had more externalizing problems than girls  $F(1,1604) = 29.95, p < .0001, ES = \text{small} (1.3\%)$ , (Means = 17.21 and 14.37, SDs = 12.07 and 12.41), whereas the converse was true for internalizing problems  $F(1, 1,604) = 20.65, p < .0001, ES = \text{small} (1.8\%)$ , (Means = 4.67 and 7.66, SDs = 9.44 and 12.29). An age-group between subjects effect  $F(2, 1,586) = 24.40, p < .0001, ES = \text{small} (3.1\%)$  emerged, showing that older children were referred more often than younger children for all problems.

## DISCUSSION

Our study revealed that respectable overlap emerged between African-American children's problems and slightly more than half of the items comprising the widely used CBCL. Nevertheless, the findings also revealed that more than 20 problems presented by small to large portions of the sample did not match any CBCL items. In addition of the 1,605 children sampled, parents of 16 or less of these children (<1%) reported children's problems that match 57 of the 118 CBCL items. The results therefore suggest that for African-American children, the items of the CBCL may *not* provide adequate coverage of clinically relevant problem behaviors. It is possible that the CBCL items that rarely match problems African-American parents reported might be too low in base rates to be relevant

for African-American children. Problem items low in base rates may be clinically significant and should be discarded with caution. The decision to retain or discard such items, however, rests heavily on accurate information on their base rates in both clinic and nonclinic populations, which for African-American children is sparse, unreliable, or nonexistent.

Turning to the *non-CBCL* problems, while we do not know how these problems might cluster with others to form specific syndromes for African-American children, clinical judgment suggests externalizing characteristics as they are emitted into the environment. The content of the non-CBCL problems are also intriguing when viewed within the context of our knowledge regarding African-American culture. In contrast to many European Americans who tend to be more individualistic in their values, African-Americans are collectivistic and emphasize the survival of their families and communities as opposed to the individual (e.g. Boyd-Franklin, 1989). African-Americans also value respectful behavior toward one another and they ardently value education (see Lambert et al., 2001 for review). Display of inappropriate behavior within the context of the family and especially that of the community is poorly tolerated in the African-American community. It is therefore not surprising that uncooperative behavior, a non-CBCL problem, is the most prevalent problem that parents report during clinical interviews when they refer their children for services. The high prevalence of items such as being uncooperative, refusal to do schoolwork, disrespectful, and deliberately annoying others may also reflect the intolerance that African-American adults have for behaviors that defy their values toward education and respect for one's family and peers.

The gender effect on attention problems is also intriguing, as they mostly reflect those observed in nonclinic and clinic population samples of heterogeneous racial and ethnic groups nationally and internationally (see Achenbach, 1991; Lambert et al., 1999). That is, boys' parents reported more attention problems than girls' parents. Replication of this finding, albeit small in effect sizes across numerous referred groups in the present study and in previous studies of referred and non-referred children suggests that this gender effect is robust across most groups of children. Also intriguing is that many earlier studies (e.g., Lambert et al., 1989; Weisz, 1987) found gender differences in problem type (e.g., internalizing versus externalizing) but few studies found gender differences in total problems. In our study of problems African American children (males at least those referred for clinical services) presented males reportedly exhibit more problems than their female counterparts. While the present inference must be drawn cautiously, as we do not know the base rates for total problems of African-American boys and girls, the findings may reflect differences in the parents' thresholds of tolerance regarding the behavior problems of boys versus girls rather than the prevalence of such problems.

The inferences we draw must be interpreted within the context of the study's limitations. A major limitation is the focus of the study on children in the state of Michigan, which limits generalization of the findings to other African-American children. Another drawback is that the archival data precluded the extraction of

strengths that African-American children are known to possess (e.g., resiliency) and demographic data such as socioeconomic status. Both constructs are documented to mediate problem behaviors in African-American children and other groups (see Dohrenwend et al., 1992; Lambert et al., 1999). Our reliance on unstructured parents' reports and the absence of a standard measure, such as the CBCL make it difficult to infer that parents' problem endorsement would be similar if they were given a list of several possible problem items. Relying on the syndromes of the CBCL, for problem classification is also problematic. We cannot be certain that the syndrome structure (i.e., factor model) of this measure derived primarily on White children is identical for African-American children. The absence of items on the CBCL that were apparently of clinical relevance to African-American children suggests that even if the syndromes from the original CBCL are confirmed for African-American children, the construct validity of the measure for group is doubtful given its questionable content and cultural validity for African American children (Guerra & Jagers, 1998; Haynes et al., 1995).

Research that uses a standard measure, but adds items established for heterogeneous samples, and adds culturally relevant items for African-American children is indicated. Alternatively, new measures reflecting culturally relevant items could be constructed for African-American children (Pumariega, 1996). Administering an established measure that is modified for African-American children and ensuring that the sample is representative of African-American children across the nation can elucidate, bolster, or debunk the inferences we generated from the findings our study. The same might be true for or a newly developed culturally relevant measure to such children. Methodology employed internationally (e.g., Lambert et al., 1996; Weisz et al., 1989) could be used to develop culturally appropriate instruments for African-American children. This methodology allows the testing of the equivalence of syndromes designed for, and established primarily on White middle-class children (see Lambert, Schmitt, Samms-Vaughan, & Russ, 2002). New items that emerged from the present study, and items that African-American parents, their children, and professionals (e.g., clinicians and teachers) who work with African-American children deem appropriate might also be added to these instruments.

New or modified measures developed for African-American children may also be normed on referred and nonreferred children. Confirmatory factor analyses of the CBCL data derived from clinic-referred African-American children can determine whether the factor structure of the CBCL matches reports on large samples of African-American children. Exploratory factor analyses on the same data (including both CBCL and non-CBCL items) can provide information on the syndrome structure of a measure that has cultural/content validity for African-American children.

To summarize, despite its limitations our study raised questions and hypotheses that may be addressed in future research. It also questioned whether the CBCL adequately covers problems African-American parents report when

they seek clinical services for their children and emphasizes the need to develop measures that better assess problem behavior in the African-American children. Furthermore, it suggests that researchers and interventionists who assess African-American children should use established measures such as the CBCL with caution as their cultural and content validity may be questionable for African-American children.

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### REFERENCES

- Achenbach, T.M. (1991). *Integrative Guide for the 1991 CBCL/4-18, YSR, and TRF Profiles*. Burlington, VT: University of Vermont, Department of Psychiatry.
- Barbarin, O.A. (1998). Integrating service and research on African American youth and families: Conceptual and methodological issues. In V.C. McLoyd & L. Steinberg (Eds.) *Studying Minority Adolescents: Conceptual methodological and theoretical issues* (pp. 297–325). Mahwah, NJ: Lawrence Erlbaum Associates.
- Boyd-Franklin, N. (1989). *Black families in therapy*. New York: Guilford.
- Cohen, J. A. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.) NY: Academic Press.
- Dohrenwend, B. P., Levav, I., Schroot, P. E., Schwartz, S., Naveh, G., Link, B. G., Skodol, A. E., & Stueve, A. (1992). Socioeconomic status and psychiatric disorders: The causation-selection issue. *Science*, 225, 946–952.
- Fabrega, H. Ulrich, R. & Mezzich, J.E. (1983). Do Caucasians and Black adolescent differ at psychiatric intake. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32, 407–413.
- Frisby, C.S. (1998). Culture and cultural differences. In J. Sandoval, C.L. Frisby, K.F. Gesinger, J.D. Scheuneman, & J.R. Grenier (Eds.). *Test interpretation and diversity: Achieving equality in assessment* (pp. 51–73) Washington, DC: American Psychological Association.
- Gray-Little, B. & Kaplan, D. (1998). Interpretation of psychological tests in clinical and forensic evaluations. In J. Sandoval, C.L. Frisby, K.F. Gesinger, J.D. Scheuneman, & J.R. Grenier (Eds.). *Test interpretation and diversity: Achieving equality in assessment* (pp. 141–178). Washington, DC: American Psychological Association.
- Guerra, N.G. & Jagers, R. (1998). The importance of culture in the assessment of children and youth. In V. C. McLoyd & L Steinberg (Eds.). *Studying minority adolescents: Conceptual, methodological, and theoretical issues* (pp. 167–181). Mahwah, NJ: Erlbaum.
- Haynes, S.N., Richard, D. C .S., & Kubany, E. S. (1995). Content validity in psychological assessment: A functional approach to concepts and methods. *Psychological Assessment*, 7, 238–247.
- Johnson, R. (1993). Clinical issues in the use of the DSM-III-R with African American Children: A diagnostic paradigm. *Journal of Black Psychology*, 19, 447–460.

- Kamphaus, R. W., Petoskey, M. D., Cody, A. H., Rowe, E. W., Huberty, C. J., Reynolds, C. R. (1999) A typology of parent rated child behavior for a national U.S. sample. *Journal of Child-Psychology and Psychiatry and Allied Disciplines*, 40, 607–616.
- Knight, G. P. & Hill, N. (1998). Measurement equivalence in research involving minority adolescents. In V. C. McLoyd & L. Steinberg (Eds.), *Studying minority adolescents: Conceptual, methodological, and theoretical issues* (pp. 183–210). NJ: Erlbaum.
- Lambert, M.C., Markle, F., & Bellas, V.F. (2001). Psychopathology and assessment in African American children and families: A historical, ecological, and strength-based perspective. In A. Neal-Barnett, J. Contreras, & K. A. Kerns (Eds.), *Forging links: African American children's clinical developmental perspectives*. Westport, CT: Praeger.
- Lambert, M.C., Samms-Vaughan, M.E., Lyubansky, M., Poldolski, C.L., McCaslin, S.E., & Rowan, G.T. (1999). Behavior and emotional problems of clinic-referred children of the African Diaspora: A cross-national study of African American and Jamaican children ages 4 to 18. *Journal of Black Psychology*, 25, 504–523.
- Lambert, M.C., Schmitt, N., Samms-Vaughan, M.E., & Russ, C. (2002). *Are the syndromes of the Youth Self-Report Form of the Child Behavior Checklist generalizable to Jamaican children?* Michigan State University. Manuscript submitted for publication.
- Lambert, M.C., Weisz, J.R., & Knight, F. (1989). Over- and undercontrolled clinic referral problems of Jamaican and American children and adolescents: The culture general and culture specific. *Journal of Consulting and Clinical Psychology*, 57, 465–472.
- MacMahon B. & Trichopoulos, D. (1996). *Epidemiology: Principles and methods*. (2nd ed.). New York, NY: Brown.
- Malgady, R.G. & Rogler, L.H. (1988). Reply to “The empirical basics of ethnocultural and linguistic bias in mental health” evaluations of Hispanics. *American Psychologist*, 1097.
- McLoyd, V.C. (1998). Changing demographics in the American population: Implications for research on minority children and adolescents. In V. C. McLoyd & L. Steinberg (Eds.), *Studying minority adolescents: Conceptual, methodological, and theoretical issues* (pp. 3–28). Mahwah, NJ: Lawrence Erlbaum.
- Neter, J., & Wasserman, W. (1974). *Applied linear statistical models*. Homewood, IL: Irwin.
- Phinney, J. & Landin, J. (1998). Research paradigms for studying ethnic minority families within and across groups. In V. C. McLoyd & L. Steinberg (Eds.), *Studying minority adolescents: Conceptual, methodological, and theoretical issues* (pp. 89–109). Mahwah, NJ: Erlbaum.
- Pumariega, A. J. (1996). Culturally competent outcome evaluation in systems of care for children's mental health. *Journal of Child and Family Studies*, 5, 389–397.
- Ransford, O. (1971). *The slave trade: The story of transatlantic slavery*. London: John Murray.
- Reid, R. (1995). Assessment of ADHD with culturally different groups: The use of behavior rating scales. *School Psychology Review* 24, 537–560.
- Sandoval, J. (1998). Testing in a changing world. In J. Sandoval, C.L. Frisby, K.F. Gesinger, J.D. Scheuneman, & J.R. Grenier (Eds.). *Test interpretation and diversity: Achieving equality in assessment* (pp. 3–49) Washington, DC: American Psychological Association.
- Steinberg, L. & Fletcher, A. C. (1998). Data analytic strategies in research on ethnic minority youth. In V. C. McLoyd & L. Steinberg (Eds.), *Studying minority adolescents: Conceptual, methodological, and theoretical issues* (pp. 279–294). NJ: Erlbaum.
- Taylor, D. & Katz, P.A. (1996). Health related services available to Black adolescents. In M.K. Singer (Ed.), *Adolescents* (pp. 36–75). Lincoln, NE: University of Nebraska Press.
- Weisz, J.R., Suwanlert, S., Chaiyasit, W., & Walter (1987). Over- and undercontrolled clinic-referral problems among Thai and American children and adolescents: The wat and wai of cultural differences. *Journal of Consulting and Clinical Psychology*, 56, 719–726.
- Weisz, J.R., Suwanlert, S., Chaiyasit, W., Weiss, B., Achenbach, T.M., & Trevathan, D. (1989). Epidemiology of behavioral and emotional problems among Thai and American children: Teacher reports for ages 6–11. *Journal of Child Psychology and Psychiatry*, 3, 471–484.
- Westmeyer, J. (1987). Cultural factors in clinical assessment. *Journal of Consulting and Clinical Psychology*, 55, 471–478.