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BEHAVIOR AND EMOTIONAL PROBLEMS AMONG JAMAICAN CHILDREN AND ADOLESCENTS: AN EPIDEMIOLOGICAL SURVEY OF PARENT, TEACHER, AND SELF-REPORTS FOR AGES 6–18 YEARS

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ABSTRACT. *The study compared general population samples of Jamaican children ages 6–18 years, via Jamaican versions of the Child Behavior Checklist (CBCL) parent-, teacher-, and self-report forms. Repeated measures ANOVAs with informant as a repeated measures factor, assessed base-rate problem score differences according to children's area of residence (i.e., urban vs rural), gender, and age. No between subjects residence effects emerged for total problem score. However, adolescents self-reported higher total problem scores compared to the ratings they received from their parents and teachers. No gender total problem score effects emerged for any of the three informants, but girls received higher internalizing, and Somatic Complaints scores. Similar total problem scores across genders, and the high ratio of boys to girls in clinic samples suggest that Jamaican girls may not be receiving adequate services. Age X within subjects interactions revealed higher teacher reported problem scores for young adolescents, reflecting possible developmental changes within the classroom context and teachers' low thresholds toward these problems. The d statistic revealed base rate syndrome, internalizing, externalizing, and total problem score differences in most Jamaican vs US sub-samples. In addition to the non-CBCL problems observed in earlier studies, these findings clearly indicate a need to ascertain syndrome structure and other psychometric properties of the Jamaican instruments.* © *1999 Elsevier Science Ltd. All rights reserved*

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INTRODUCTION

The paucity of standardized, objective, and reliable ways of describing and classifying child behavioral and emotional problems impedes research, assessment, and communication regarding child psychopathology (Achenbach, 1991a). While this problem exists internationally, its existence is even more acute in Jamaica and other third-world Caribbean nations. In Jamaica, researchers and clinicians often rely on instruments and classification systems (e.g., Diagnostic and Statistical Manual [DSM]; American Psychiatric Association, 1994) designed for developed countries, particularly the US. Many US-designed instruments and classification systems possess adequate psychometric properties for assessment of US children. However, the appropriateness of *item content*, factor or syndrome structure, and other psychometric properties of these US-based instruments for third world nations like Jamaica are usually unknown. Furthermore, the absence of information on base rates (or prevalence) of psychological symptomatology and syndromes in many developing nations often make some instruments and their US-based norms inappropriate for research and clinical use in other nations (Lambert, Knight & Costigan, 1994).

The problems discussed above present certain challenges to researchers whose goals include developing instruments for cross-national research, while also making them appropriate for clinical and research use within the respective societies. Achievement of these goals is even more challenging for researchers who focus on child and adolescent (hereafter referred to as child) psychopathology. These researchers must focus on environmental context and the differences between informants who interact with children in these contexts when they design child assessment instruments. Environmental milieu, including home and school and the respective standards set by individuals who interact with children in these contexts, may contribute to differences between sources of information regarding child behavior (Achenbach, 1991a). Thus, within any society, comprehensive child assessment warrants multiple sources of data, as each source contributes a different perspective on children's functioning (Achenbach et al., 1990). Because contextual variations are important *within* and *across* societies, researchers must develop instruments that account for these phenomena. By attending to these inter- and intra-cultural issues, researchers can avoid ethnocentricity in their views on psychopathology, while testing for differences and similarities in child psychopathology across informants and settings within and across societies.

The present study is designed to begin addressing some of the intra- and inter-cultural challenges that confront professionals who assess children for national and international child psychopathology research. It also outlines some important steps in designing instruments for inter- and intra-cultural assessment and research. Therefore, while the present study focuses on child problems within Jamaica, it describes a procedure that allows multiinformant and cross-national comparisons between Jamaica and other societies, especially the US. While it uses widely researched and well established child assessment procedures, the present study also accounts for ideographic and sociocultural phenomena that affect expression and description of child psychopathology in Jamaica. It, therefore, builds on a body of research done in the US and in other nations (see Achenbach, 1991a,b,c,d for review) and an earlier cross-national clinic record survey that included Jamaican children and adolescents (Lambert, Weisz & Knight, 1989).

In the clinic-record study, trained recorders surveyed Jamaican children's clinic records. They recorded children's problems as reported by adults who accompanied the youngsters during intake interviews. The recorders subsequently matched the presenting problems to items on the Child Behavior Checklist (CBCL; Achenbach, 1991b), an instrument that is well standardized on US samples but widely used in cross-national research. The clinic-record survey revealed that many Jamaican clinic-referred children's problems matched the CBCL items. However, several Jamaican problems did not. Therefore, the study raised the concern that the CBCL item content did not thoroughly encompass the clinic-referred problems that were reported by Jamaican adults who accompany youngsters to clinics.

By using information from the clinic-record study, other Jamaican-based information, and the CBCL items, we constructed three forms (i.e., parent- teacher- and self-report) of the CBCL instruments for Jamaican youngsters. Since we were interested in making the instruments appropriate for child assessment within different Jamaican contexts and also for cross-national comparisons across Jamaica and other nations, we used information from three different sources: (1) the parent- teacher- and self-report forms of the CBCL; (2) Jamaican children's clinic records; and (3) input we gained from clinicians and teachers who work with Jamaican children. We included all CBCL items in our instruments, but we modified some original CBCL item wordings to linguistically ensure that they provided the intended meaning to Jamaicans. For example we substituted 'bad feelings' for 'feel's sick' in item '56c. Nausea, feels sick.' Also, we added problems that we identified in our clinic record search as well as those that Jamaican clinicians and teachers indicated were clinically relevant for Jamaican child assessment (e.g., 'rude to others', 'begs at home or on street') . Therefore, we

avoided the problems inherent in the indiscriminate use of assessment instruments in their original forms across English-speaking populations (Malgady & Rogler, 1988; Okazaki & Sue, 1995; Reid, 1995). Thus, the inclusion of Jamaican-specific items permits appropriate measurement within the Jamaican child population. However, since large portions of the three Jamaican instruments overlap with their CBCL counterparts, they will also allow cross-national comparisons with other nations, including the US.

Although the Jamaican instruments were designed for Jamaican children, limited information on their psychometric properties for this population exists. While some information on descriminant validity, test–retest, and interinformant reliability indices are documented (Lambert, Knight, Taylor & Achenbach, 1994, 1996), there is no information on the construct validity of the instruments. Thus, earlier studies on Jamaican children (Lambert, Thesiger, Overly & Knight, 1990; Lambert, Knight, Taylor & Newell, 1993) and cross-national comparisons on Jamaican and US children (Lambert et al., 1996) used CBCL constructs (i.e., factors or syndromes) to classify Jamaican children's problems. The absence of classification systems that were empirically derived on samples of Jamaican children led to a heavy reliance on the use of eight CBCL syndromes and two syndrome groupings to classify Jamaican children's problems for intra- and international research (Lambert et al., 1993, 1996). Compounding this problem is the absence of information on the base rates of the CBCL items, its syndromes, and groupings of the syndromes for Jamaican children. Moreover, no base rate information exists for the Jamaican items.

One may argue that psychometric theory and research suggest that it is pointless to examine problem differences at the micro (i.e., individual problem) level. However, the Jamaican instruments, like their CBCL counterparts, are broadband instruments that tap numerous types of problems and symptoms. Some of the child problems on the instruments may have very low base rates in some societies. Because of their low base rates, these items are often excluded from analyses that form problem syndromes, but these problems may be highly significant for clinical evaluation. An example is CBCL item '78. Smears bowel movements' (Achenbach, 1991b). Moreover, these individual problems may differ in prevalence rates according to age, gender, and urban vs rural places of residence. Therefore, while it is prudent to test the base rates of psychometric syndromes, it also behoves researchers who conduct epidemiological studies to identify and test base rates of individual problems excluded from syndromes.

Base rate information can suggest whether separate classification system norms are needed for different population segments (e.g., age groups, gender) within a given society and across different societies.

However, recent studies that compared Jamaican children's problems within Jamaica (Lambert et al., 1993) and across Jamaica and the US (Lambert et al., 1994) ignored potential base rate differences. These studies risked erroneous study inferences. This oversight occurred despite findings from a previous study (Lambert et al., 1989) indicating that the Jamaican child rearing customs may contribute to unique child behavior problem types, patterns, and prevalence in Jamaica. The study further revealed that Jamaican children's problems and problem patterns may vary according to age, gender and urban vs rural areas of residence. A brief primer on Jamaica heritage and its resulting child rearing patterns is therefore appropriate at this juncture.

The Jamaican society consists primarily of descendants from British-owned slaves from West Africa. While ethnic groups from other world regions such as Europe, Asia, and Middle-Eastern nations are represented in the population, their gene pools are often mixed with one another and those of African-Jamaicans. This is reflected in the Jamaican national motto 'Out of Many One People'. Thus, the cultural customs of Jamaica, including child rearing practices, primarily reflect African-British ethos (Lambert et al., 1989). For example, the British tradition of respect for authority figures (Zigler & Child, 1982) is combined with the African tradition of respect for one's elders. These traditions distinguish Jamaica from some North American societies like the US, where youth is admired and a certain degree of brashness and nonconformity is expected as a part of youth (Lambert et al., 1989).

The nature of their heritage makes Jamaican adults intolerant of many forms of externalizing behavior such as lying, stealing, and being 'rude' (e.g., disrespectful, impolite, defiant). Rude children are at risk for being punished and berated by adults. Moreover, important adults (e.g., parents, teachers) often admonish children against associating with rude children (see Lambert et al., 1989, for further review). Although *very few* studies on Jamaican children's behavior exist, earlier ethnographic research (Clarke, 1957) suggested that Jamaican adults are tolerant of many different types of behavior in young children. However, as children age, adults' tolerance levels change as a function of gender, problem severity, and problem type. Therefore, while they tolerate less problems in older than younger children, earlier research (Clarke, 1957) suggests that adults are less tolerant of externalizing behavior in older girls than in older boys. The converse is reportedly true for internalizing (e.g., depression, withdrawal) problems.

Supporting the notion of differential tolerance of problems according to age, recent clinic research (Lambert et al., 1989) revealed that Jamaican parents reported more problems for younger than older children but no problem type differences. There were no age $\times$ gender effects, but a gender $\times$ problem type difference emerged, reflecting more

externalizing problems for clinic-referred boys than girls. The converse was true for internalizing problems.

Problem types may also vary according to urban vs rural area of residence in Jamaica (Clarke, 1957; Cohen 1955a,b,c, 1956). On the one hand, rural dwellers usually adhere more rigidly to traditional societal customs than their urban counterparts. Given the Jamaican tradition of suppressing externalizing behavior, one might speculate that Jamaican children residing in urban areas may present more externalizing problems than rural youngsters. The converse might therefore be true for internalizing problems. On the other hand, urban environments are often more stressful than rural environments. As a result, urban children may display more problems than rural children, irrespective of problem type. Previous research (Lambert et al., 1989) involving Jamaican clinic-referred youngsters supported the latter problem type differences. That is, there were more problems for urban than rural youngsters, but there were no differences in problem type.

The gender, urban/rural, age, and problem pattern effects discussed above emerged from *unstructured* parent reports on clinic referred children in both Jamaica and the US. Thus, the findings reflected the views of only one set of informants and should, therefore, be viewed cautiously. Other procedural drawbacks included lack of attention to problem and syndrome base rates. Confounding factors, like parental biases involved in clinic referral and availability of treatment facilities, are also associated with clinic records surveys. Therefore, the study could not provide information on problem prevalence and base rates among the general Jamaican child population. By contrast, the present study uses a standard assessment procedure in its survey of general Jamaican child population samples.

The present study, therefore, represents a critical step in assessing the prevalence and base rates of problems for boys and girls ages 6–18 years who reside in urban and rural areas within Jamaica. The study also focuses on parents' and teachers' reports for children ages 6–18 years. Therefore, it tests problem base rates across two informants and two settings (i.e., home vs school) for the entire sample. The study also includes self-reports for children ages 11–18 years, which permits the testing of prevalence across three different reporters for the adolescent group.

The three Jamaican instruments retained the CBCL competency and problem items. They also included problem items that are *specifically relevant* to Jamaican youngsters. Therefore, the information derived from the present study will be important to researchers who specifically focus on Jamaican children and to those that include Jamaican youngsters in cross-national studies. Thus, it provides accurate behavior problem data obtained on children of different ages, gender, and urban vs

rural areas of residence within Jamaica. The study also allows researchers, educators, and clinicians who review studies that include Jamaican children to make more informed judgments regarding inferences drawn from these studies.

To summarize, the overarching goals of the present study were to: (1) test the base rates of CBCL- and Jamaican-based problems across different segments of the Jamaican population and to determine whether problems varied according to gender, urban vs rural residence, and age; (2) determine the base rates of CBCL problem syndromes and syndrome groupings used in earlier inter- and intra-cultural research that included Jamaican children; (3) determine whether findings from earlier ethnographic research on general populations of Jamaican children are evident in the present sample of Jamaican children; and (4) provide multiinformant assessment information to researchers, clinicians, educators, and policy makers who are interested in the virtually unstudied Jamaican child population.

METHOD

Instruments

JYC. The Jamaican Youth Checklist (JYC) is patterned after the Child Behavior Checklist (CBCL; Achenbach, 1991b). Like the CBCL, the JYC includes questions about child and parent demographics, questions about the child's competence in school and elsewhere. It also shares with the CBCL a list of 118 specific problems (e.g., 'sets fires', 'self conscious or easily embarrassed', 'wets bed') and two open-ended questions concerning other physical problems and other problems not listed elsewhere. On the JYC, parents state the degree to which their child shows each problem by rating 0 = *not true* of the child; 1 = *somewhat or sometimes true*; or 2 = *very true or often true* of the child.

While the Jamaican measure was designed to be similar in format to the CBCL to permit cross-national comparisons, it is also sensitive to the Jamaican culture and its concomitant child behavior problems. Therefore, the JYC format is similar to that of the CBCL: demographic items followed by competency items, which are not examined in this article; and problem items using the 0–1–2 rating scale we described earlier. The competency items are the same as the CBCL, except that the question 'Is your child in a special class' was dropped, because few if any Jamaican schools have special classes. The 120 CBCL problem items are included in the JYC and are listed in the same order as in the CBCL. As outlined in the introduction, some items were slightly changed to ensure that they concurrently reflect idiomatic expression in Jamaica and retain the intended meaning of the US-based instrument.

In addition, 35 other items were added to the JYC. Of these added items, 14 were derived from data on the referral problems of 360 admissions to Jamaican child and adolescent treatment facilities, and 21 were added at the recommendation of Jamaican clinicians and teachers who reviewed drafts of the JYC.

Preliminary tests on the psychometric properties revealed excellent test–retest and inter-informant reliability indices and that it effectively discriminates between clinic and general population samples (Lambert et al., 1994).

JTRF. Like the JYC, the Teacher Report Form of the Jamaican Youth Checklist (JTRF) is patterned after the Teacher's Report Form (TRF; Achenbach, 1991c). It includes items for rating academic performance, four adaptive characteristics, 118 specific behavior/emotional problem items and two open-ended items like those of the CBCL for adding additional problems. Like the JYC, some items were changed to match Jamaican expression, and 32 other items clinically appropriate for Jamaican children were added at the end of the JTRF. The problems are scored like those of the JYC, and 119 have counterparts in the JYC, although the wording differs slightly, such as referring to 'pupils' instead of 'children.' Patterning the TRF, 25 items are replaced on the JTRF with items that are more appropriate for teachers as detailed by Achenbach (1991c). Like the JYC, test–retest and inter-interviewer reliability indices are satisfactory (Lambert et al., 1996).

JYSR. The Jamaican self-report form was designated as the Jamaican Youth Self-Report (JYSR). Its format is the same as that of the Youth Self-Report Form (YSR; Achenbach, 1991d) and like the YSR, it is designed for administration to children ages 11–18 years. The JYSR has the same items as the YSR with modifications similar to those of the parent and teacher report instruments. In addition, 29 items relevant to Jamaican children were added at the end of JYSR. Like the JYC and the TRF, some items were changed to reflect Jamaican idiomatic expression. The JYSR has 17 of the same competence items and 131 of the same problems as the JYC, 114 of the same problems as the JTRF, and an open-ended item for adding other physical problems without known medical cause. Like the YSR, the JYSR items are worded in the first person and differ in other minor ways from those of the parent and teacher report forms as documented by Achenbach (1991d). In addition, the JYSR patterns the YSR in replacing 16 items deemed inappropriate for adolescents with socially desirable items that most adolescents endorse.

Test–retest reliability on the JYSR problem items estimated via Pearson correlations for reports of 20 Jamaican adolescents ages 11–18 years between one and two week intervals, was 0.91, $P < 0.01$.

Description Of Sample

Procedures used by Weisz et al. (1987) were used to sample children throughout Jamaica. Children ages 6–11 were sampled from urban and rural areas in Kingston, the largest city in Jamaica, and from rural areas in the northeastern region of Jamaica in 1990. Accordingly, children from 29 randomly selected elementary schools across the regions described were randomly sampled. These schools included 27 public and two private schools to mirror the proportions of such schools nationwide. This portion of the sample could not be selected to be representative of the entire country (79.1% resided in the Kingston and its surrounding suburban areas). However, since more than 27% of all Jamaicans reside in Kingston and 34% live in urban areas such as Kingston, it is an extremely important sample.

Similar procedures were used in sampling adolescents ages 12–18 years from urban, and suburban environments in Kingston and Montego Bay and in rural areas throughout Jamaica in 1994. These adolescents were sampled from 16 schools. For both child and adolescent samples, classes from each grade level were randomly selected. A maximum of one child or adolescent was randomly selected from each class, (e.g., 'the ninth adolescent on the alphabetical list').

Subjects and Research Design. The total sample included 864 children ages 6–18 years. Parents and teachers completed the JYC and JTRF, respectively, on all children in the sample and adolescents ages 11–18 years completed the JYSR. This formed a 2 (urban/rural) $\times$ 2 (gender) $\times$ 13 (age group: 6–18 years) factorial design for parent and teacher reports in one wave of analyses and 2 (urban/rural) $\times$ 2 (gender) $\times$ 8 (age: 11–18 years for) parent, teacher, and self-reports in the second wave.

Respondent Characteristics. Parents (or guardians) of the selected children and adolescents were asked to participate. Of those contacted for the child sample, 92% ($N = 415$) took part. The participation rate for the adolescent sample was 90% ($N = 446$). With parental permission, teachers of the children in both samples were also asked to participate. Completed teacher reports were obtained on 88%($N = 415$) of the children selected and on 99% ($N = 437$) of the adolescents. Adolescents ages 11–18 years were also asked to participate in completing the JYSR. Completed self-reports were obtained on 90% ($N = 484$) of the adolescents selected.

We derived SES groupings from a 5-step Jamaican scale (Smith, 1984). Analyses of these SES groupings yielded a mean of 2.89, SD = 0935, which is slightly lower than the midpoint of 3 for this scale, where 5 is the highest SES. SES is negatively correlated with child behavior and emotional problems in Jamaican and other societies

(Achenbach, 1991a; Lambert et al., 1996). Therefore, for all analyses we use a repeated measures ANCOVA model and controlled for potential SES confounds by including SES ratings as a covariate.

RESULTS

By using repeated measures ANCOVAs, we compared total problem scores and each of eight CBCL syndrome scores. The syndromes are designated *Withdrawn, Somatic Complaints, Anxious/Depressed, Social Problems, Thought Problems, Attention Problems, Delinquent Behavior*, and *Aggressive Behavior*. Second order principal factor analyses have revealed two broadband groupings of the syndromes, labeled internalizing and externalizing (Achenbach, 1991a). As discussed in the introduction, syndrome and broadband scores were used in previous research that included Jamaican children. Therefore, we also compared Jamaican children on internalizing and externalizing scores, as well as on the Jamaican-specific items and on the 33 individual CBCL items that were not included in the composition of any of the eight syndrome scales.

All research participants in the sample had parent and teacher reports. Therefore, for the first wave of analyses, we divided the sample according to the following three independent variables: urban vs rural; boys vs girls; and age. Parent vs teacher reporters were used as the repeated measures factor. Participants ages 11–18 years had parent, teacher, and self-reports. Therefore, for the second wave of analyses, we divided this group of participants according to the same three independent variables, but used parent, teacher, and self-reports as the repeated measures factor. These age × reporter groupings match previous CBCL research done in Jamaica (Lambert et al., 1996), the US, and other nations (see Achenbach, 1991a for review).

The large sample sizes provided high statistical power (see Table 1 for *N*s), Therefore, we accepted as significant only those effects that were *P*

TABLE 1

Urban Rural Areas Comparison of Total Problem Score Including Jamaican Items[a]

	Parent report (JYC)			Teacher report (JTRF)			Self-report (JYSR)		
	N	X	SD	*N*	X	SD	*N*	X	SD
Urban	550	26.03	18.20	550	24.81	23.96	265	57.94	26.54
Rural	313	27.08	16.98	313	28.42	22.37	235	50.95	22.01

[a] Means have been adjusted for SES by ANCOVA. The range of possible raw scores is 0 to 236 on the JYC, JTRF, and JYSR.

< 0.01. Also, we used Cohen's (1988) criteria in judging effect sizes (ES) of ANCOVA results as small, medium or large if they accounted for 1–5.9%, 5.9–13.8%, and >13.8% of the variance, respectively. We reduced the chance of type I error by identifying the three smallest significant effects, where three is the number expected by chance in a set of similar analyses using a $P < 0.01$ protection level (Feild & Armenakis, 1974).

Urban-rural Differences In Mean Scores

Parent and Teacher Reports. Repeated measures ANCOVAs done on parent and teacher reported total problem scores (including and excluding the Jamaican items) for ages 6 to 18 revealed no between or within subjects effects. For parent and teacher reports, between subjects effects emerged for urban vs rural youngsters on only *one* item, '29. Afraid of things other than school', ES = 2. Rural children received higher ratings than urban children on this item. The same trend emerged for internalizing scores, ES < 1. Both urban vs rural effects were small, and neither of the two between subjects effects were moderated by within subjects effects.

TABLE 2

Problem Items and Scales Showing Significant ($P < 0.01$) Between Subjects Gender Effects and the Associated Percentages of Variance[a]

Problem item		ES[b]	ES[c]	Type
	Males scored higher			
36	Gets hurt a lot	2	–	0
113	*Absentminded*	—	(3)	J
120	*Puts self in dangerous situations*	—	(4)	J
133	Throws stones at objects	3	(4)	J
135	Lazy	3	(5)[d]	J
	Females scored higher			
5	Behaves like opposite sex	2[d]	(6)	0
29	Fears (other than school)	11	(11)	0
44	Bites fingernails	1	—	0
140	Gossips	3[d]	(4)[d]	J
	Somatic problems	3	(6)	—
	Internalizing	1	(5)	—

[a] 0=Other, according to Achenbach (1991a) classification. J=Jamaican items.
[b] Comparisons between parent and teacher reports for ages 6–18 years.
[c] Comparisons between parent, teacher, and self-reports for ages 11–18 years.
[d] Item has a significant within subjects effect.

Parent, Teacher and Self-reports. Similar analyses done on all three reports revealed no between subjects effects for total problem score. However, the mean scores in Table 1 indicates significant within subjects effects $F(2,994) = 10.94$, $P = 0.0001$, ES = 2. Adolescents ages 11–18 years reported more problems than both their parents and teachers.

Gender Differences

The authors presented information on gender differences in teacher-reported ratings in six general population samples obtained in six different nations (Lambert et al., 1996). However, the present data from two and three informants provided a multi-informant test of gender effects in 6–18 year-old children throughout Jamaica. All significant gender effects are listed in Table 2. For this and subsequent tables, the numbers in the far left column represent the matching JYC, JTRF, and JYSR problems. Abbreviated problem item labels are in column two. The percentages of the variance (i.e., ESs) for the significant effects are listed for the *parent and teacher reports in column three*. For items that were *also significant* for the *second wave of analyses* (i.e., parent, teacher, and self-reports), *column four lists in parentheses* the ESs for these items. The tables also list and *italicize* items that were significant for all *three reports* but *not* for analyses on parent and teacher reports only. For these items, column four also lists their effect sizes. For columns three and four, all significant between subjects effects that were moderated by within subjects effects have the superscript *W* listed on the right of the ES values. The letters O and J in column five indicate that the items were non-syndrome CBCL items or were unique to Jamaican children, respectively.

Parent and Teacher Reports. Table 2 lists items that showed significantly higher scores for boys or girls in our repeated measures ANCOVAs. No significant between subjects effects emerged for total problem score. For boys, significantly higher scores for three problems, two of which were uniquely Jamaican emerged. Boys did not receive higher scores on any syndrome or syndrome grouping scores. All significant effects had small ESs, and none were moderated by within subjects effects.

For girls, significantly higher effects emerged for four items, one of which was Jamaican. Girls received higher scores than boys on the *Somatic Problems* syndrome and on internalizing score. Only one significant effect for girls, '29. Fears (other than school) was a medium effect (ES = 11). Between subject effects on items 5 and 140 were moderated by within subjects effects. Tukey HSD revealed higher teacher scores for girls on the two items but no parent reported differences.

Parent, Teacher, and Self-reports. Analyses of the three reports for children ages 11–18 years, revealed that boys obtained significantly higher scores than girls on four items. Two of these effects, '113. Absentminded' and '120. Puts self in dangerous situations' did not overlap with the significant effects that emerged from parent and teacher reports. Item 36, which was significant for analyses involving parent and teacher reports was not significant when the analyses included three reports. All four of the significant effects on which boys scored higher than girls were small ESs. Only item 135 was moderated by within subjects effects. Tukey's HSD revealed that neither boys nor girls ratings were significantly different for teachers and parents on this item. However, looking at each reporter separately, both parents and teachers rated boys higher than girls, whereas no significant gender differences emerged on the self-reports.

Girls obtained significantly higher scores on three problem items and on *Somatic Complaints* and internalizing scores. All of these significant effects overlapped with the significant effects that emerged from analyses involving parent and teacher reports only. Two medium ESs emerged.

TABLE 3

Problem Items and Scales Showing Significant ($P < 0.01$) Between Subjects Age Effects and the Associated Percentages of Variance[a]

Problem item		ES[b]	ES[c]	Type
	Younger youth scored higher			
58	Picks nose or other body parts	4	—	O
113	Absentminded	5	(9)	J
122	Selfish or won't share	4	—	J
123	Lacks self confidence	4	—	J
133	Throws stones at objects	4	—	J
134	Begs at home or on street	7	—	J
	Social Problems	4	—	—
	Attention Problems	7[d]	—	—
	Internalizing	4[d]	—	—
	Externalizing	5	(6)	—
	Total Problems	5[d]	—	—
	Older youth scored higher			
127	Laughs inappropriately	4	—	J

[a] O=Other, according to Achenbach (1991a) classification. J=Jamaican items.
[b] Comparisons between parent and teacher reports for ages 6–18 years.
[c] Comparisons between parent, teacher, and self-reports for ages 11–18 years.
[d] Item has a significant within subjects effect.

These occurred on item '29. Fears (other than school)', and on the *Somatic Complaints* syndrome. Only one of these between subjects effects, item '140. Gossips', was moderated by a within subjects effect. Looking at each reporter separately, Tukey's HSD tests also revealed that girls were rated higher than boys on both teacher and self-reports, while no gender differences were found on parent reports.

Age Effects

Parent and Teacher Reports. Younger children received higher scores on six individual problems, *Social Problems*, and *Attention Problems*, and on internalizing, externalizing, and total problem scores (Table 3). Five of the six individual items were uniquely Jamaican. One individual

TABLE 4

Problem Items and Scales Showing Significant ($P < 0.01$) Between Subjects SES Effects and the Associated Percentages of Variance[a]

Problem item		ES[b]	ES[c]	Type
	Lower SES scored higher			
99	Too neat/clean	3	(6)	O
116	*Gambles*	—	(3)	J
117	Doesn't answer people	1	—	J
118	Irritable	<1	—	J
132	Wanders off	2	—	J
134	Begs at home or on street	2	—	J
135	Lazy	2	—	J
140	Gossips	1	—	J
	Social Problems	—	(2)	—
	Anxious/Depressed	—	(3)	—
	Thought problems	1	(3)	—
	Attention problems	4[d]	—	—
	Delinquent	2	(3)	—
	Aggressive	2	(4)	—
	Internalizing	—	(4)	—
	Externalizing	2	(2)	—
	Total problems	3	(6)	—
	Higher SES score higher			
148	Other problems	8	—	O

[a] O=Other, according to Achenbach (1991a) classification. J=Jamaican items.
[b] Comparisons between parent and teacher reports for ages 6–18 years.

problem, item '134. Begs at home or on street' was a medium ES. *Attention Problems* score also had medium ES. All other effects were small. Internalizing, *Attention Problems* and total problem scores were moderated by within subjects effects. Tukey's post hoc tests showed that parents rated younger children higher on Internalizing, and *Attention Problems*, but did not report significant age differences for total problem scores. In contrast, teacher reports showed significant nonlinear age differences, with 10–13 year-olds receiving higher total problem scores than both their younger and older schoolmates.

Older children received significantly higher scores than younger children on only one item, '127. Laughs inappropriately.' This item is uniquely Jamaican and had a small ES.

Parent, Teacher, and Self-reports. Younger children scored higher than older children on one individual item, '113. Absentminded' and on externalizing problems. Both of these effects had a medium ES, and neither was moderated by a within subjects effect.

No significant effects emerged from analyses of all three reports for children ages 11–18 years.

SES Effects

Although we partialed out SES effects in the repeated measures ANCOVAS, involving place of residence, age, and gender, SES had significant linear associations with some problem scores in the two waves of analyses. Table 4 lists the significant SES effects associated with the analyses.

Parent and Teacher Reports. Lower SES children received higher scores on eight problems, and on *Thought Problems, Attention Problems, Delinquent Behavior, Aggressive Behavior*, externalizing problems, and total problem scores. Seven of the eight individual problems were unique to the Jamaican instruments. All significant effects were small in ESs. Higher SES children obtain higher scores on one item, '148. Other problems' not listed on the two instruments.' The ES was medium. *The Attention Problems* effect was moderated by within subjects effects. Post hoc tests revealed that teachers reported more attention problems than parents for all three SES groups.

Parent, Teacher and Self-reports. Analyses on the three reports revealed significantly higher scores for lower SES children on two problems ('99. Too neat/clean' and '116. Gambles') and on *Social Problems, Anxious/Depressed, Thought Problems, Attention Problems, Delinquent Behavior, Aggressive Behavior*, internalizing and externalizing scores, and total problem scores. No significant effects indicating higher

TABLE 5

Mean (±SD) CBCL Scale Scores of US and Jamaican Children and Adolescents

Parent reports	US mean	US SD	Jam. mean	Jam. SD	*d*[a] (ES)
Boys 6–11 years					
Withdrawn	1.8	1.9	2.8	2.3	0.47*
Somatic complaints	0.8	1.3	1.3	1.4	0.37*
Anxious/depressed	3.1	3.1	2.9	2.4	−0.07
Social problems	2.0	1.9	1.9	1.6	−0.06
Thought problems	0.5	0.9	0.5	1.0	0.00
Attention problems	3.3	2.8	3.3	2.9	0.00
Delinquent	1.6	1.7	1.9	2.1	0.16
Aggressive	8.2	5.8	7.0	4.8	−0.22*
Internalizing	5.6	4.7	6.9	4.5	0.28*
Externalizing	9.8	7.1	8.2	7.9	−0.21*
Total problems	24.3	15.6	21.3	11.8	−0.22*
Boys 12–18 years					
Withdrawn	2.4	2.2	3.3	2.4	0.39*
Somatic complaints	1.0	1.5	1.6	1.6	0.39*
Anxious/depressed	3.2	3.3	2.8	2.3	−0.14
Social problems	1.6	1.8	1.5	1.5	−0.06
Thought problems	0.5	1.0	0.4	0.8	−0.11
Attention problems	3.3	3.1	2.8	2.8	−0.17*
Delinquent	1.9	2.5	1.6	2.1	−0.13
Aggressive	6.8	5.7	5.3	5.1	−0.28*
Internalizing	6.4	5.5	7.6	4.8	0.23*
Externalizing	8.7	7.6	6.6	6.8	−0.29*
Total problems	22.5	17.0	18.9	12.2	−0.24*
Girls 6–11 years					
Withdrawn	2.0	2.0	2.7	2.5	0.31*
Somatic complaints	1.0	1.6	1.6	1.7	0.36*
Anxious/depressed	3.4	3.3	2.9	2.5	−0.17*
Social problems	1.9	1.7	1.6	1.5	−0.19*
Thought problems	0.5	1.0	0.6	1.0	0.10
Attention problems	2.5	2.5	2.8	2.8	0.11
Delinquent	1.2	1.4	1.6	1.8	0.25*
Aggressive	7.0	5.2	6.5	5.0	−0.10
Internalizing	6.3	5.5	7.0	5.0	0.13
Externalizing	8.2	6.1	6.2	7.2	−0.30*
Total problems	23.1	15.5	20.1	13.0	−0.21*
Girls 12–18 years					
Withdrawn	2.6	2.4	3.5	2.7	0.35*
Somatic complaints	1.4	2.0	2.3	2.4	0.41*
Anxious/depressed	3.7	3.8	3.3	2.7	−0.12
Social problems	1.7	2.0	1.6	1.8	−0.05
Thought problems	0.6	1.1	0.3	0.7	−0.32*

Table 5 (*continued*)

Parent reports	US mean	US SD	Jam. mean	Jam. SD	*d*[a] (ES)
Attention problems	2.6	2.9	2.6	2.6	0.00
Delinquent	1.4	1.9	1.1	1.7	−0.17*
Aggressive	5.7	5.2	5.7	5.1	0.00
Internalizing	7.5	6.6	8.9	5.8	0.23*
Externalizing	7.1	6.6	6.7	6.9	−0.06
Total problems	22.0	17.7	20.6	13.7	−0.09
Teacher reports					
Boys 6–11 years					
Withdrawn	1.8	2.5	3.1	3.7	0.41*
Somatic complaints	0.5	1.4	0.6	1.3	0.07
Anxious/depressed	3.2	3.7	4.2	4.2	0.25*
Social problems	1.8	2.7	2.2	2.9	0.14
Thought problems	0.4	0.8	0.5	0.9	0.12
Attention problems	8.7	8.5	11.0	8.9	0.26*
Delinquent	1.3	1.8	2.2	2.9	0.37*
Aggressive	6.0	8.2	8.0	9.4	0.23*
Internalizing	5.3	5.6	7.7	7.3	0.37*
Externalizing	7.2	9.6	10.2	11.7	0.28*
Total problems	23.5	21.9	20.9	18.2	−0.12
Boys 12–18 years					
Withdrawn	2.1	3.0	2.7	3.1	0.20*
Somatic complaints	0.6	1.5	0.5	1.0	−0.08
Anxious/depressed	2.8	3.9	3.3	3.1	0.14
Social problems	1.9	3.2	1.6	2.2	−0.11
Thought problems	0.4	1.0	0.5	1.0	0.10
Attention problems	8.7	9.1	9.0	7.3	0.04
Delinquent	1.6	2.7	2.2	2.9	0.21*
Aggressive	5.5	8.3	6.2	7.8	0.09
Internalizing	5.2	6.7	6.3	5.5	0.18*
Externalizing	7.1	10.5	8.4	10.0	0.13
Total problems	23.8	26.1	17.3	14.9	−0.31*
Girls 6–11 years					
Withdrawn	1.8	2.6	3.0	3.4	0.40*
Somatic complaints	0.7	1.6	0.9	1.6	0.13
Anxious/depressed	3.1	4.0	4.6	4.4	0.36*
Social problems	1.6	2.7	1.9	2.8	0.11
Thought problems	0.3	0.8	0.6	1.1	0.31*
Attention problems	5.5	6.9	9.1	8.9	0.45*
Delinquent	0.8	1.4	1.6	2.3	0.42*
Aggressive	3.5	5.8	6.3	7.9	0.40*
Internalizing	5.5	6.4	8.3	7.7	0.40*
Externalizing	4.2	6.8	7.9	9.7	0.44*
Total problems	17.2	19.0	18.8	18.0	0.09

(continued on next page)

Table 5 (*continued*)

Parent reports	US mean	US SD	Jam. mean	Jam. SD	d[a] (ES)
Girls 12–18 years					
Withdrawn	1.8	2.6	3.2	3.0	0.50*
Somatic complaints	0.4	1.0	1.0	1.9	0.40*
Anxious/depressed	3.0	4.1	4.9	4.4	0.45*
Social problems	1.4	2.7	2.2	2.9	0.29*
Thought problems	0.3	0.8	0.7	1.1	0.42*
Attention problems	4.7	6.5	8.0	7.3	0.48*
Delinquent	1.0	1.6	2.0	2.4	0.49*
Aggressive	3.2	6.4	6.3	8.1	0.42*
Internalizing	5.0	6.4	8.8	7.4	0.55*
Externalizing	4.2	7.6	8.3	9.8	0.47*
Total problems	15.6	19.9	19.3	16.2	0.20*
Self-reports					
Boys 11–18 years					
Withdrawn	3.4	2.2	4.7	2.4	0.56*
Somatic complaints	2.2	2.3	3.4	3.0	0.45*
Anxious/depressed	5.1	4.2	6.9	4.5	0.41*
Social problems	2.6	2.0	3.6	2.5	0.44*
Thought problems	2.3	2.1	2.7	2.6	0.17*
Attention problems	4.8	3.0	4.2	2.3	−0.22*
Delinquent	3.2	2.5	3.0	2.5	−0.08
Aggressive	8.5	5.2	6.8	4.8	−0.34*
Internalizing	10.5	7.0	14.6	8.2	0.54*
Externalizing	11.6	7.0	9.8	6.8	−0.26*
Total problems	37.3	19.1	45.2	19.9	0.41*
Girls 11–18 years					
Withdrawn	4.0	2.4	5.3	2.5	0.53*
Somatic complaints	2.9	2.9	4.3	3.1	0.47*
Anxious/depressed	6.4	5.1	8.4	4.3	0.42*
Social problems	2.5	2.1	4.0	2.5	0.65*
Thought problems	2.4	2.3	2.8	2.5	0.17*
Attention problems	4.6	3.0	3.9	2.8	−0.24*
Delinquent	2.5	2.2	2.7	2.6	0.08
Aggressive	7.9	4.9	7.2	4.7	−0.15
Internalizing	12.9	8.5	17.5	8.3	0.55*
Externalizing	10.3	6.3	9.9	8.3	−0.05
Total problems	38.9	21.3	48.8	19.6	0.48*

[a] $d = \mathrm{M2} - \mathrm{M1}/\sqrt{((\mathrm{SD1}^2 + \mathrm{SD}^2)/2)}$, where M2 and M1= means for Jamaican and US samples.

* Means are significantly different using a 95% confidence interval.

scores for higher SES children emerged. Medium ESs emerged for total problems and on item 99. None of the effects were moderated by within subjects effects.

Comparing Problem Base Rates Across Jamaican And CBCL Samples

Since earlier research used CBCL syndrome and syndrome groupings to classify clinic and nonclinic children's problems within Jamaica and across Jamaica and the US, we used an established meta-analytic approach to calculate effect sizes between means on the normative CBCL sample and samples from other populations (Sandberg, Meyer-Bahlburg & Yager, 1991). We calculated the effect sizes for differences between the CBCL normative sample and the Jamaican sample using the statistic *d* (Glass, Mcgaw & Smith, 1981), which measures the magnitude in differences between means according to standard deviation units. For example a *d* of 0.25 would mean that the means were a quarter standard deviation apart. The formula for *d* is $d = (M2 - M1)/\sqrt{((SD1^2 + SD2^2)/2)}$, where M2 and M1 = means for Jamaican and US samples respectively. The results are listed in Table 5. Significant mean differences are obtained using a 95% confidence interval. Since the effects are in standard deviation units, we used Cohen's (1992) criteria that interprets units that are less than 0.50 as small ESs, differences between 0.5 and 0.8 as medium and those above 0.8 as large.

Parents of US boys ages 6–11 and 12–18 years reported higher total and externalizing problem score base rates than Jamaican parents. The converse was true for internalizing scores. The trends were also evident in the syndromes that comprised the internalizing (e.g. *Withdrawn*) and externalizing (e.g., *Aggressive Behavior*). All ESs were small. Similar trends emerged for girls ages 6–11 years, but no base rate differences emerged for internalizing problems. Jamaican parents reported higher *Delinquent Problem* base rates for girls than US parents. The converse was true for girls ages 12–18 years and no significant base rate differences were observed in total problem score for this group. All significant parent reported effects were small.

Jamaican teachers' base rate scores were significantly higher than US teachers base rate scores for almost all syndrome scores and on internalizing and externalizing scores for three of the four age × gender groups. The exception was boys ages 12–18 years, for whom Jamaican teacher-reported base rates were significantly higher on three of four indices on which significant differences emerged. Base rate differences on total problem score emerged for girls ages 12–18 years and boys of the same age range. Jamaican girls were rated as having higher problem base rates than US girls. The converse was true for boys. All but two ESs were

small for teacher reports. Two medium ESs occurred for the *Withdrawn* syndrome and internalizing scores for girls ages 12 to 18 years.

Self-report scores revealed significant base rate differences on all but the *Delinquent Problems* syndrome score for boys ages 11–18 years. US boys' self-reported base rates were significantly higher than Jamaican boys' on *Attention Problems, Aggressive Behavior*, and externalizing problems only. Jamaican boys had higher base rate scores on the remaining significant effects. For girls ages 11–18 years, self-reported base-rate differences emerged for all but three categories. Jamaican girls reported higher base rate scores than US girls on all significant base rate effects but the *Attention Problems* syndrome. Similar to US boys, US girls reported higher base rate scores for *Attention Problems* than Jamaican girls. A total of five medium ESs emerged for self-reports. For both boys and girls, these emerged on *Withdrawn* and internalizing scores. For girls, a medium ES emerged for Social Problems.

DISCUSSION

Multi-informant ratings on behavior and emotional problems of Jamaican children revealed few differences involving total problem score as a function of place of residence, gender or age. The findings suggest that when ratings from three informants are considered, almost no base rate total problem score differences exist across the different Jamaican subgroups. Thus, they are in sharp contrast to the earlier clinic study (Lambert et al., 1989) that revealed significantly more problems in urban than rural children. Taken together, the findings from both studies suggest that the urban/rural differences found in the clinic study do not necessarily reflect reporter bias in the general Jamaican population. Like teachers and adolescents, parent ratings in the present study were similar for urban and rural children.

The urban/rural differences observed in the clinic study may be artifacts of factors involved in the clinical referral process in Jamaica. Families residing in urban areas have more readily available and accessible services. Greater impact of these services, in addition to greater awareness of child behavior disorders via more readily available media and other sources, may considerably lower urban parents' thresholds toward problems in children they refer for services. Thus, unlike their rural counterparts, they may report more problems when they obtain clinical services for their children. Rural parents, must often travel vast distances to seek clinical intervention for their children and may only report problems that are severe enough to warrant a day's travel to clinics that are usually located in urban and other regional areas within the Island. Further research that determines the severity of problems informants from rural vs urban areas report may further elucidate this

inference. Methodological procedures developed by Weisz and Weiss (1991) that compare clinic-referral rates with the general population prevalence rates of various types of problems urban vs rural children display may be appropriate.

The within-subjects differences in total problem score ratings of the three informants are also important. Jamaican adolescents were more likely to report higher problem score ratings than their parents or teachers. This finding underscores the robustness of this phenomenon in different societies. That is, like their Puerto Rican, Dutch, and US counterparts (Achenbach et al., 1990), Jamaican adolescents reported higher problem prevalence than their parents and teachers. However, these findings should be interpreted in the context of gender effects observed in the present study and the previous clinic study. Like the clinic study, the present study revealed no gender differences in total problem score.

The lack of gender differences in total problem scores in the general Jamaican child population and the higher clinic referral rates for boys require greater scrutiny. More specifically, similarity in magnitude of behavior and emotional problems and distress reported for girls vs boys by the three different informants suggest that Jamaican girls may not be receiving the clinical intervention they need. Adults such as parents, teachers, child care workers, and clinicians are the gate keepers of child mental health referral. Their attitudes toward problem behavior in boys vs girls and their distress thresholds regarding these problems might explain their differential gender referral rates.

The significant gender effects that emerged from our analyses of individual item scores, the US-based syndrome scores, and internalizing scores further supports this inference. Across two and three informants, girls scored higher than boys on the US-based internalizing scores and on the *Somatic Complaints* syndrome, which falls under the internalizing grouping of syndromes (Achenbach, 1991b,c,d). This finding supports the findings from earlier ethnographic studies (Clarke, 1957). That is, although Jamaican adults are, for the most part, intolerant of externalizing child problems, their lower threshold of tolerance for externalizing behavior in girls may differentially suppress this type of behavior in girls vs boys. Jamaican adults may therefore foster the development of internalizing problems in girls (see Lambert et al., 1989 for review). However, because of the disruptive nature of externalizing types of problems boys present, adults may more readily refer boys for clinical services than girls, who primarily suffer from internalizing problems.

Methods employed by Lambert et al. (1992) may assess these adults' attitudes and tolerance thresholds toward problem behavior in Jamaican boys and girls. Directly evaluating the behavior of these significant adults toward behavior and emotional problems in boys vs girls

when they occur is also crucial. One way of addressing this issue is to employ the Weisz and Weiss (1991) procedure described earlier to compare clinic-referral rates for boys vs girls with the general population prevalence rates exhibited by boys and girls. Empirical identification of similarity in base rates and differential referral rates may suggest the need to inform policy makers of the need to develop intervention programs (e.g., educating adults) to ensure that all children receive the help they need. Adults may be educated to recognize and obtain help for children with different types of behavior and emotional problems, irrespective of gender or problem type differences.

The gender differences on individual problems are also noteworthy. Although Jamaican boys were not more likely to present more externalizing problems than girls, a large number of the individual problems on which boys obtained higher scores than girls were *Jamaican-specific* problems. This is not surprising since most of these items emerged from clinic records of Jamaican children. The differential gender referral rates may explain these findings. Many of the non-CBCL items on the Jamaican instruments were derived from Jamaican children's clinic records and may, therefore, be highly representative of the problems boys exhibit. Although the extra items on which boys received higher scores were not included in the US classification system, their descriptions seem to reflect direct expression of behavior problems and emotional distress into the environment (e.g., '133. throws stones at objects'). Most behavior problems emerging under the externalizing grouping possess this quality. Factor analytic studies of JYC, JTRF, and JYSR from large clinic-referred samples are needed to determine whether these items warrant classification as externalizing behavior for Jamaican children.

Focusing on the differences in total problem scores and other syndrome scores on which within-subjects interactions occurred, children in the early adolescent years (i.e. ages 10–13 years) received higher teacher ratings than their older or younger counterparts. This finding suggests that young Jamaican adolescents may find the school environment more stressful than their older and younger counterparts and may, therefore, need intervention. However, one could also infer that Jamaican teachers who interact with these adolescents may have lower thresholds of tolerance for problem behavior exhibited by these children. This teacher-pupil dynamic may be exacerbated by the typical behavior adolescents in this age range exhibit in the classroom. Classroom-based behavior problems such as the impulsiveness and the mood changes (e.g., '14. Crying') that are often evident in the early adolescent years, can be rated as *Attention Problems* and internalizing problems, respectively. Therefore, Jamaican teachers may rate their young adolescent pupils as having more behavior problems in these and other domains than their

other pupils. Methodology used by Weisz, Chaiyasit, Weiss, Eastman, and Jackson (1995) that studies children and their behavior in Jamaican classrooms via direct observation and compares these with teacher ratings may further illuminate this issue.

The syndrome base-rate differences also need to be addressed. Most of the findings indicate significantly higher Jamaican parent reported base rates for syndromes that clustered under the internalizing grouping of the syndromes, and for internalizing score. The findings suggest that inferences from the earlier Jamaican study should be interpreted with caution. For example, the earlier findings suggested that by virtue of differences in child rearing practices, Jamaican clinic-referred children develop more internalizing than externalizing problems than their US counterparts. The present study indicates that the base rate for internalizing problems is significantly higher in the general Jamaican child population than in the US child population. In most cases, the converse was true for externalizing problems. The same general trends were observed in self-reports. They further suggest that differences observed in Jamaican vs US clinic children may not be products of the clinic referral process like differences in parental thresholds regarding different types of problems, but may reflect general population base rate differences.

To summarize, our study revealed some intriguing findings, particularly as they pertain to informant ratings, child gender, child age, urban/rural areas of child residence, and child problem types. Dependence of this and earlier studies on a child problem classification system designed from research on US children limits the potential strength of inferences one might draw from the findings. Additional research is needed to identify problem syndromes Jamaican children present. This future research can also contribute to the testing of whether the syndromes and groupings of syndromes observed in US children and children of other nations are valid for the classification of Jamaican children's behavior and emotional problems. To achieve these goals, future research should use the JYC, JTRF, and JYSR to ascertain the syndrome structure of problems Jamaican clinic referred children present. This research can build on the present and earlier studies and develop an empirically derived system for classification for behavior and emotional problems of Jamaican children. By combining the findings from the present study and those from the future research recommended here, one can provide national and cross-national scientists, educators, program evaluators, clinicians, policy makers, and other professionals with important information on Jamaican child problem assessment and procedures.

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