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Child behavior and emotional problems in Jamaican classrooms: a multimethod study using direct observations and teacher reports for ages 6–11

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Abstract

International research on children's problems relies heavily on parent and teacher ratings. Such ratings are helpful to professionals who assess children but are subjected to biases emerging from adults' personal involvement with the children they rate, and their own cultural experiences. This study investigated whether ratings of teachers versus observers on Jamaican children ages 6–11 differed according to informant, urban versus rural area, gender, and age. Significantly higher total problem scores emerged for ratings by observers than those by teachers. Observers also rated younger children as more demanding and aggressive while both informants rated rural children as exhibiting more externalizing problems than urban children. Opportunity for discharging behavior in the environment may have caused rural children to present more externalizing problems. Media and training effects may have increased teachers' tolerance for problems in children nationwide, but in contrast to observers' circumscribed observation periods, teachers' ratings may reflect their perspectives on children's problems over an entire academic year. © 2001 Published by Elsevier Science Ltd.

Keywords: Jamaica; Children; Classroom; Behavior; Observations; Problems; Psychopathology

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1. Introduction

To better understand child psychopathology, researchers have been studying children in their own nations (e.g., Achenbach, 1991a, b, c; Lambert et al., 1999) and surveying children across different nations (e.g., Crijnen, Achenbach, & Verhulst, 1999). Most of this research has focused on parent reports (Weisz et al., 1987). However, a growing number of investigators (e.g., Achenbach, 1991a; Sattler, 1992) have started to recognize that, when it comes to assessing children's behavior and emotional problems, there is no gold standard regarding informant reports and information needs to be gathered from multiple sources. As a result, recent studies have begun to focus simultaneously on two or more informants (e.g., Achenbach, Bird, Canino, Phares et al., 1990; Lambert & Lyubansky; 1999; Lambert, Lyubansky, & Achenbach, 1998). The bulk of this research, however, has focused on *parent and teacher reports*, two sets of informants who are personally involved in the lives of the children studied (Weisz et al., 1995). Parent and teacher reports are extremely important to researchers and clinicians who study and evaluate children's problems, as parents and teachers are often the gate keepers of child mental health services, determining whether children with behavior and emotional problems are referred for help. Specifically, they make decisions regarding the types of problems for which children are referred (Lambert et al., 1999) and when children's problems are severe enough to warrant clinical intervention (Achenbach, 1991a, b, c).

Despite the importance of their reports when children are assessed, information from parents and teachers is not without pitfalls. One important concern for researchers and clinicians who use parent or teacher reports to generate child assessment data is the effect of the relationship between the child and these adult informants who provide such data. Informants' ratings are likely to be colored by their relationship with children and the societal biases associated with child behavior in the nation they reside. Another area of concern is that parents' and teachers' reports of children's problems are influenced by their own values and expectations regarding appropriate child behavior (Lambert & Lyubansky, 1999; Puig et al., 1999). For example, parent and teacher expectations can be influenced by the settings (e.g., home versus school) in which they interact with children, by the behavior they expect of children in the respective settings, and by the role they play in children's lives (e.g., parent, teacher). Another concern is that parents' and teachers' evaluations of children's psychological problems may depend on behavior they consider to be age- and gender-appropriate, which may vary according to the geopolitical areas (e.g., urban versus rural) within a given society (Lambert, Weisz, & Knight, 1989). In Jamaica for example, adults and families who reside in rural areas are said to hold more traditional views regarding children and their problems than their counterparts who reside in urban areas (Lambert et al., 1989). While rural adults are said to be less tolerant of all types of child problems, they are also believed to be more intolerant of externalizing problems (e.g., fighting, stealing) than urban adults. The converse is believed to be true for internalizing problems (e.g., shyness, depression).

The above concerns suggest that relying entirely on the ratings of parents and teachers when conducting cross-national studies or research within any particular

society is unwise. An examination of the literature relying on parent and teacher reports in Jamaica and the United States supports this view. For example, several studies sought to compare the prevalence of problems exhibited by boys and girls of different ages and in different types of environment (i.e., urban versus rural). A clinic referral study comparing Jamaican youth with racially heterogenous groups of US children revealed that parents across the two nations reported more problems for urban than rural children (Lambert et al., 1989) but no differences according to problem type (i.e., internalizing versus externalizing). By contrast, a national general population Jamaican study (Lambert et al., 1999b) revealed no urban versus rural differences for parent or teacher reports. Similar discrepancies emerged for gender and age effects. For example, significantly higher externalizing problems and lower internalizing problems have emerged for boys versus girls in the clinic study described above (Lambert et al., 1989), while no gender differences were found in the total number of problems reported. The externalizing problem differences were also found in a similar study that focused on children of African descent in Jamaica and the United States (Lambert et al., 1999). However, unlike the earlier study (Lambert et al., 1989) that combined racial groups, no gender effects emerged for internalizing problems. Also, contrasting with the earlier study, which revealed no gender differences in total problems, significantly more problems were reported for boys than for girls. The differences in gender effects for total problem score across the two studies suggest that lumping children from various racial groups together may obscure important findings specific to homogenous racial groups (Lambert et al., 1999). Nonetheless, they are also indicative of the inconsistencies that result from relying exclusively on information from parents and teachers.

Interestingly, most age effects were robust across the two referred cross-national studies (Lambert et al., 1989, 1999), but not the national general population study (Lambert & Lyubansky, 1999). For example, parents of younger children in the clinic studies reported more problems to clinicians during intake interviews than those of older children. Teachers and parents in the general population study, however, reported no total problem differences according to age (Lambert & Lyubansky, 1999). As with discrepancies involving gender, it is possible that these findings reflect actual differences between clinic-referred and general population children. However, it is a possibility that they are an artifact caused by differences in parent and teacher expectations regarding what constitutes age-appropriate behavior.

Isolating the effects of parent and teacher perspectives in child assessment data is important, as numerous studies (e.g., Snyder & Swann, 1978) have established that adults' views and expectations can have a profound effect on children's behavioral outcomes. That is, adult expectations can influence their ratings of children's problems and may also shape the behavior and emotional problems that children present. Thus, both researchers and clinicians need to develop an understanding of not only how children's behavioral and emotional problems may differ from one country to another or within various segments of a given nation, but also the particular way that cultural beliefs and practices may be affecting parent and teacher reports of these problems.

To summarize, a review of the literature has revealed that children's problems may vary according to their demographic characteristics (e.g., age, gender, and SES) and where the children live (e.g., urban versus rural area). The literature base also suggests that problem differences may also be dependent on whether children are studied nationally (i.e., within Jamaica) or cross-nationally (e.g., Jamaica and the United States). Also important, are the findings that adults' reports on children's problem vary according to the type of informants who do the reporting. The differences in the findings across the different types of studies (e.g., clinic versus nonclinic) described above make it difficult to interpret their results. The problem of interpretation is especially salient for researchers who compare reports across different informants. Further complicating this issue are the differences in findings that emerge across referral status, national versus international studies, and whether the studies include ethnically heterogeneous or homogenous groups of children.

One way to begin disentangling these issues is to focus on a group of children from one culture. Jamaica, a nation of individuals who are virtually from the same ethnic background can provide such an opportunity. Comparing findings derived from teachers' ratings with those obtained from unbiased classroom observers who have no history of relationships with the children they rate is the next step. Therefore, focusing on the ratings of teachers versus those of unbiased observers on boys and girls of different ages and socio-economic status (SES) across urban and rural areas of Jamaica can provide an opportunity to test the effects of some demographic variables on ratings from one informant versus the other. Making appropriate inferences from this type of research requires an understanding of the Jamaican society, its people and the impact of their customs on the nation's children and their behavior.

The population of Jamaica primarily consists of descendants of "British-owned" slaves from the Ashanti, Yoruba, Ibo, and Fanti tribes in Africa (Brice-Baker, 1995). 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. For example, the British tradition of respect for authority figures (Ziegler & Child, 1982) is combined with the African tradition of respect for one's elders (Brice-Baker, 1995). These traditions distinguish Jamaica from some North American societies like the United States, where youth is admired and a certain degree of brashness and nonconformity is expected as a part of youth (Lambert et al., 1989).

In Jamaica, the school is recognized as a major socializing agent for children, and teachers are held in the highest esteem by families and children. The teaching profession is often called the "noble profession" as a reference to the special honor teachers are afforded in the Jamaican society. Jamaican teachers are also honored by a special day labeled "National Teacher's Day". Because teachers and the school system are endowed with the responsibility of setting standards of conduct for

children and other members of the community, Jamaican parents often rely on teachers' judgments regarding child socialization. Parents in Jamaica actively seek and take seriously the advice that teachers give them (Brice-Baker, 1995). Jamaican parents commonly call teachers their children's "day time parents" and they often defer to teachers' judgments regarding their children. Parents in Jamaica, their school-aged children, and other members of their families use astonishing terms such as "*cross*" (meaning fierce) to refer to the authority that teachers usually hold and display.

The nature of their heritage makes Jamaican teachers and the adults they influence intolerant of many forms of externalizing behavior (Bryce-Baker, 1996) including being disrespectful, lying, stealing, and being "rude" (Brice-Baker, 1996; Lambert et al., 1989). Rude children are at risk for being punished and berated by teachers and other adults. Like other Jamaican adults, teachers often admonish children against associating with rude children (see Lambert et al., 1989, for further review). Despite their general intolerance for externalizing behavior, earlier ethnographic research (e.g., Clarke, 1957) suggested that Jamaican adults are less tolerant of externalizing behavior in girls than in boys and that the converse is true for internalizing problems. Thus, boys may exhibit more externalizing problems than girls and the converse may be true for internalizing problems.

As discussed above, the research conducted thus far have yielded a variety of findings, many of which may be attributable to informant biases and their interactions with demographic characteristics of the children studied. Similarly outlined above is the power of using teacher reports versus structured classroom observations of boys and girls of various ages across urban and rural Jamaican settings. Confidence regarding the unbiased nature of classroom observations can be boosted if observers who rate the behavior children exhibit in the school context can be trained to follow highly specific rules in their ratings. Since observers do not have personal relationships with the children they rate, their ratings are less likely to suffer the relationship-based biases sometimes observed in parent and teacher reports (Weisz et al., 1995). Thus, one goal of this study was to assess children within Jamaica via unbiased observer reports and to compare the observers' reports with those obtained from classroom teachers who directly interact with the children.

Accomplishing this goal required that we surmount three methodological challenges. Like those identified in other studies (e.g., Weisz et al., 1995), one challenge was that low base rates of clinically relevant individual behavior problems in a short observation time span would show limited variability across children. A second challenge related to whether we should use trained observers from Jamaica or from another nation. Using Jamaican observers would involve the challenge of combating societally reinforced attitudes regarding Jamaican children's behavior. Selecting observers from other nations such as the United States requires the investment of vast resources to train and transport them to Jamaica. More challenging was ensuring that if US observers were chosen they would become familiar enough with the customs, gestures, and behavior of Jamaican children to

become effective observers. Highly related to the first challenge, the third challenge involved the availability of an appropriate list of behavior items documented to be of clinical significance in Jamaica.

We designed the present study to address the three challenges. To overcome the first and third challenges, we trained four observers to rate more than 100 specific problems and focused our analyses on summary scores of these problems. Furthermore, we trained each observer to follow specific rules regarding specific behavior and emotional problems they examined and to obtain and maintain high interobserver reliability prior to and during data collection. We addressed challenge two by selecting our observers in the United States, training them within Jamaica and the United States and allowing them to live in Jamaica for approximately 3 months. Since the data collection spanned only a 1 month period the observers had sufficient time to live in Jamaica and learn its customs well before beginning data collection. Also, the director of the study had lived for approximately 20 years in the United States and 20 years in Jamaica and prepared the observers to enter the Jamaican culture (e.g., giving seminars on Jamaica and its people) before their departure for Jamaica. Didactic and in vivo exposure and learning about Jamaican children, their culture, and behavior continued during the observers stay on the Island. Finally, by using measures that were already modified for Jamaican children or successfully used in their original form to study Jamaican youth (see Lambert, Knight, Taylor, & Achenbach, 1994; Puig et al., 1999) we made sure the sample of child problems included problems that were relevant for Jamaican youth.

Having addressed the challenges outlined above, we turned our attention to the three main questions of interest. (1) Will the total problem scores of Jamaican children differ according to observers' versus teachers' reports? (2) Will teachers' or observers' reports vary on internalizing, externalizing and total problems considered separately and will their reports vary according to children's ages, gender, and whether the children live in urban versus rural areas of Jamaica? (3) Will the ratings of the two informants on the syndromes empirically established for their respective measure differ according to children's ages and gender and whether they are urban versus rural dwellers?

To summarize, the study took the following format. A team of trained observers rated multiple problems in classroom settings of Jamaican urban and rural elementary schools. We focused on the individual child within each classroom and not the class itself so the pupil became the unit of analysis. The observations therefore focused on child problem prevalence as a function of urban versus rural place of residence, age, gender, and SES of the child. Besides individual problems, we also coded children's on-task versus off task behavior. Finally, to provide a comparison of teacher versus observer reports, we collected standard problem reports from the teachers (see "Teacher Reports Procedure and Measure" below) of all children we observed. Thus we assessed problem reports (i.e., problems that appeared on both observer and teacher lists) as a function of informant (i.e., teacher verus observer), urban versus rural area of residence, SES, and age.

2. Method

2.1. Subjects and study design

The sample consisted of 39 boys and 39 girls, ages 6–11 in Jamaican public elementary (primary) schools with a mean age of 8.7, SD = 1.59. To reduce the chance of school-based idiosyncracies in the results, we selected children from three rural and three urban schools. All children in the sample were Jamaican by nationality, but 95% identified themselves as African in origin. The remaining 5% stated that they were from other groups (e.g., Chinese, Indian) or a mixture of African and the other groups. Since we were cognizant that children who know they are being observed may behave differently than if they did not, we sent permission letters to at least 10 children in each classroom. In the parents' letters we noted that we may select their child from a group of 10 children. Once we obtained parental permission, we randomly selected one child from each classroom. However, the observed child was never told about his or her selection for observation before the completion of the observation period.

We used a five-step SES classification system specifically designed for Jamaica (Smith, 1984). In this system, 1 represents the lowest SES and 5 represents the highest SES. The mean SES for the total sample was 2.19, SD = 0.84. For urban and rural children the SES means were 2.2 (SD = 0.11) and 1.9 (SD = 0.17), respectively. Since SES is negatively correlated with abnormal behavior in most nations (e.g., Dohrenwend et al., 1992) and in Jamaica (Lambert & Lyubansky, 1999) we included SES as a covariate in all analyses.

2.2. Classes, teachers, and conditions during data collection

The mean number of students per class in each school was 40. Children in each school sat in benches, which seated approximately three children. In addition, the classrooms were usually separated only by a row of chalkboards showing the division between the classrooms. Thus, the activities from one classroom could easily be heard and seen from other classrooms. Notably, although outsiders may perceive this classroom arrangement as distracting to the pupils, Jamaican teachers' authority was such that discipline prevailed in the classrooms. This Jamaican classroom setting therefore differs from that of elementary schools in industrialized nations like the United States, where all children typically have their own desk and each classroom is separated by a solid wall.

2.3. Observational instrument and procedure

Observers used the Direct Observation Form (DOF) of the child Behavior Checklist (Achenbach, 1986). The observation procedure involved time sampling, with one DOF used for each ten-minute episode. The DOF included the following content:

1. *On/off-task ratings*. On each form, are 10 boxes with "on" and "off" written inside each. The Observer's timers (inaudible to participants) sounded after each minute, at which point the observer checked "on" if the child was on task and "off" if the child was off task. At the end of each 10 min period, the observers terminated their ratings.

2. *Individual problem ratings*. The DOF listed 96 individual behavior problems (e.g., cries, cruelty, bullying or meanness, physically attacks people, self-conscious, or easily embarrassed). It also included an item labeled "other problems" where observers record and rate problems that are not included on the DOF. A space for a rating of 0 (not observed), 1 (slight or ambiguous occurrence) 2 (definite occurrence with moderate intensity and less than 3 min duration) or 3 (definite occurrence with strong intensity or greater than 3 min in duration) is placed in front of each item. All the 96 specific behavior items listed in the Achenbach (1986) Direct behavior Observation Forms were used for observation ratings within Jamaica. Principal components analyses on the DOF have yielded six syndromes labeled *Withdrawn-Inattentive*, *Nervous-Obsessive*, *Depressed*, *Hyperactive*, *Attention Demanding*, and *Aggressive*. Second order factor analyses have yielded two major groupings of these syndromes: internalizing and externalizing (Reed & Edelbrock, 1983).

The observers observed each child for four 10 min episodes. To use all observation data, we computed the average of each 10 min observation score on each DOF variable of interest (e.g., total problems). We observed children during regular academic class activities and we excluded nonacademic activities (e.g., lunch and breaks). For each child, we randomly selected observation times their respective schools made available to us, with the constraint that we did not observe the child more than once in the same day. This randomization procedure effectively spread observations throughout the day. Reliability information on observational procedures was obtained by calculating agreement between trained observers using intraclass correlation coefficients (ICC) and is presented below.

2.4. Reliability indices for the observation procedure

The team of observers consisted of four observers (one Caribbean and three African Americans) receiving their training in psychology in the United States. These four observers were graduate students in clinical and counseling psychology. Ten randomly selected children of the total sample of 78 children were observed for reliability purposes. Thus, two pairs of observers simultaneously observed and rated these pupils' behavior. Interobserver reliabilities were calculated between pairs of observers. The average total problem score (i.e., sum of the ratings across all 96 problem items) ICC for the observers was 0.82. The average ICC for internalizing problems (e.g., nervous, withdrawn) was 0.57 and for externalizing problems (e.g., loud, swears) was 0.73. For the "On/Off- task" score, the ICC average was 0.89. Overall, these corresponding ICCs are comparable to those reported by Reed and Edelbrock (1983) for Achenbach's (1986) DOF, except the ICC for the internalizing

problems. Overall, it is more difficult to detect whether a given child has internalizing problems as opposed to whether a target child exhibits externalizing problems based solely on observational data. Thus, any findings on internalizing problems should be interpreted with caution.

2.5. Teacher report procedures and measure

In soliciting parental permission for potential pupil participation, we asked Jamaican parents to allow their child's teacher to complete the Jamaican Teacher's Report Form (JTRF; Lambert et al., 1994) if their child was selected for the study. All teachers completed two teacher report forms, one for each girl and boy observed in their classroom. A total of 21 urban teachers and 18 rural teachers of Jamaican children were asked to complete the checklists. All teachers consented to complete the teacher report forms. The JTRF patterns the Teacher Report form of the Child Behavior Checklist (TRF; Achenbach, 1991b) which was designed for, and normed on US children (Achenbach, 1991c). Although we have some psychometric indices for the JTRF, we have no information on its factor/syndrome structure. Because of the absence of empirically derived syndromes for Jamaican youth, we relied on those established for US children to classify Jamaican children's problems. A description of the TRF on which the JTRF is patterned is therefore provided next.

The TRF includes demographic information, questions about the child's adaptive functioning and academic performance, standardized test scores, and a list of 118 specific problems. Based on the preceding 2 months, teachers score each problem as 0 (not true of the child), 1 (somewhat or sometimes true of the child), or 2 (very true or often true of the child). Test–retest reliability for total problem scores was $r = 0.95$ for a mean interval of 15 days across various groups of children. The interrater correlation between teachers was $r = 0.60$ for total problems (Achenbach, 1991b). Principal component analyses of the TRF have yielded eight syndromes labeled *Withdrawn*, *Somatic Complaints*, *Anxious/Depressed*, *Thought Problems*, *Attention Problems*, *Delinquent Behavior*, *Social Problems* and *Aggressive Behavior*. Second order principal factor analyses have yielded the internalizing and externalizing groupings of the syndromes.

The JTRF has the same format as the TRF. Demographic items, child's adaptive functioning, and academic items are followed by problem items using the same 0–1–2 rating scale, all in the same order as on the TRF. Some items on the JTRF are slightly modified to represent Jamaican idiomatic expressions. In addition, the JTRF contains 32 extra items with problems particularly relevant to Jamaican children. However, to facilitate cross-instrument comparisons (i.e., across the DOF and JTRF), only the original TRF items were included in the analyses. As an estimate of test–retest reliability, a mean interclass correlation coefficient (ICC) of 0.78 was obtained for problem scores derived from 20 teachers who completed the JTRF twice over a one-week interval. Interrater agreement among 20 Jamaican teacher pairs who independently rated the same pupils in different conditions revealed an ICC of 0.61 (Lambert et al., 1996).

3. Results

3.1. Data analyses

To limit the chance of Type I error, we used the Bonferroni correction (Neter, Wasserman, & Kutner, 1987). Since our analyses on observer and informant reports were done in two waves, we used a corrected alpha of .006 for the first wave and .004 for the second wave. We interpreted the sizes of the significant effects via Cohen's (1988) criteria. Cohen classifies effects as *small* if they account for 1.0–5.9% of the variance, as *medium* if they account for 5.9–13.8%, and as *large* if they account for more than 13.8%. In all analyses, we entered SES and age as continuous variables in the model to simultaneously control for and to test their effects. Thus, the analyses were based on a general linear model ANCOVA design, with SES and age entered as continuous variables in the model.

The first wave of analyses focused on the observational measures. They consisted of 2 (urban versus rural) $\times$ 2 (gender) ANCOVA, with SES and age entered, respectively, as continuous variables in the model. We tested the effects of these variables on total problem scores, "On-task" scores, each of the six DOF scale scores, and internalizing and externalizing scores as dependent variables considered separately. We also tested whether internalizing or externalizing problems were most often observed across each region. To address this question, we performed a 2 (urban versus rural) $\times$ 2 (gender) $\times$ 2 (problem type) repeated measures ANCOVA with the two different problem types (i.e., internalizing and externalizing) as the within subjects factor, and SES and age as covariates.

The second wave of analyses compared teachers' reports via a 2 (urban versus rural) $\times$ 2 (gender) ANCOVA, with SES and age entered, respectively, as continuous variables. The total problem scores and each of the eight TRF syndromes were dependent variables considered separately. Similar to the analyses involving observers' reports, we also tested for teacher-reported problem type differences across urban versus rural regions of the country. Thus, we performed a 2 (urban versus rural) $\times$ 2 (gender) $\times$ 2 (problem type) repeated measures ANCOVA on teacher reports, with problem type as the within group factor and SES and age as covariates. The adjusted (i.e., for the SES and age covariates) means and standard deviations derived from all analyses are listed in Table 1.

Finally, teachers' versus observers' reports were analyzed using only the 86 items that were common to both the teacher form and the observation form. To have comparable scores for the Teacher Form (0–2 scale) and the observation measure (0–3 scale), the observation measure was first converted to a 0–2 scale by multiplying scores by $\frac{2}{3}$. Next, teachers' versus observers' ratings were analyzed via a 2 (reporter:—teacher versus observer) $\times$ 2 (urban versus rural) $\times$ 2 (gender) repeated measures ANCOVA, with reporter as the repeated measure factor and SES and age as covariates. We conducted separate analyses for total problem scores and for internalizing and externalizing problems as dependent variables. Thus, the alpha for these analyses was set at 0.025.

Table 1
Means (adjusted for covariates) and standard deviations for observer and teacher report measures across urban and rural jamaican children

Syndrome	Urban		Rural	
	M	SD	M	SD
Observers				
On task	6.50	0.14	5.65	0.11
Total problems	15.30	4.10	19.21	5.10
Internalizing	5.63	3.00	5.90	2.60
Externalizing	3.01[a]	1.80	5.00[a]	0.50
Withdrawn-inattentive	4.10	2.20	3.51	1.95
Nervous-obsessive	1.70	0.99	2.10	0.91
Depressed	1.30	0.94	1.90	0.91
Hyperactive	6.60	2.50	8.11	2.00
Attention demanding	0.89	0.56	1.74	0.80
Aggressive	2.40	1.90	3.80	1.24
Teachers				
Total problems	26.60	20.60	35.60	18.00
Internalizing	8.17	1.30	9.98	2.61
Externalizing	6.55[a]	2.20	9.67[a]	3.10
Withdrawn	3.47	2.19	2.90	1.40
Somatic complaints	0.41	1.90	0.36	0.76
Anxious depressed	4.70	2.10	4.39	2.18
Thought problems	0.74	0.58	0 .80	0.51
Attention problems	9.40	4.61	11.82	5.31
Delinquent behavior	1.16	0 .96	2.08	1.33
Aggressive behavior	5.38	2.20	7.56	2.40
Social problems	1.64	0.83	2.36	1.21

[a] $p<0.005$.

3.2. Observer ratings

3.2.1. On-versus off-task from DOF

We conducted a 2 (urban versus rural) × 2 (gender) ANCOVA on the on-task and off-task ratings considered separately across the 10 min intervals for each observational period. No significant main or interaction effects emerged for either analysis.

3.2.2. Direct observation problems

No gender effects emerged for any of the DOF syndromes, internalizing, externalizing or total problems. However, age effects emerged for the Attention/Demanding, F (1, 76) = 10.29, $p<0.002$; Aggressive Behavior, F (1, 76) = 20.73, $p<0.0001$; and externalizing F (1, 76) = 23.63, $p<0.0001$ scores. The significant effects accounted for 13%, 22%, and 25% of the variance, respectively. Thus, the

effect sizes were medium, large, and large, respectively. For all significant effects, younger children received higher observer ratings than older children.

Significant effects emerged for urban versus rural regions for externalizing scores, F (1, 76) = 7.88, $p < 0.006$. The effect size for this effect was medium as it accounted for 8% of the variance. As outlined in Table 1 rural children received significantly higher problem scores than urban children.

3.3. Teacher ratings

For teacher ratings, one significant effect emerged. A significant effect emerge for rural versus urban teachers ratings regarding externalizing problems, F (1, 76) = 9.73, $p = 0.002$, ES = 3%, therefore small. Table 1 indicates that rural teachers rated their pupils as exhibiting significantly higher externalizing scores than urban teachers.

3.4. Ratings of observers versus teachers

As previously noted, the DOF and JTRF have 86 overlapping items. These items allowed the comparison of total problem score ratings across informants. Therefore, we performed a repeated measures ANCOVA with gender and area of residence (i.e., urban versus rural) as independent variables, SES and age as covariates, total problem score as the dependent variable and reporter as the within subjects factor.

The analyses revealed a significant reporter within subjects main effect, F (1, 76) = 10.41, $p = 0.0001$ for total problems. This effect accounted for 3% of the variance, thus a small ES. Teachers' ratings were higher than observers' ratings. Means for teachers and observers's total problems scores were 25.5 (SD = 12.2) and 13.65 (SD = 4.0), respectively.

3.5. Correlations across reporters

Besides the above analyses, we ran Pearson correlations between teachers and observers for total problem score. This analysis revealed a negative nonsignificant correlation $r = -0.02$, $p = 0.66$ between observers and teachers ratings. Similarly, we computed Pearson correlations between observer's on-task ratings and teachers Attention Problems syndrome. The results were negative and nonsignificant, $r = -0.11$, $p = 0.33$.

4. Discussion

Most analyses were conducted for teachers and observers reports considered separately. Nevertheless, the present findings revealed that teachers' ratings of their pupils' total problem scores were significantly higher than the ratings of the same children by unbiased observers. The study also revealed medium to large significant age effects for observers ratings regarding Attention/Demanding, Aggressive

Behavior, internalizing, and externalizing problems. For all these effects, younger children received higher ratings than older children. Observers also rated urban children as having lower total problem scores than rural children. Interestingly, only one significant effect emerged for teachers reports. This finding revealed higher externalizing scores in rural children.

Finding that only one significant urban versus rural effect emerged for teacher reports is reminiscent of those observed in an earlier study (Lambert & Lyubansky, 1999). That study revealed virtually no teacher reported differences in the problems exhibited by both groups of children. The fact that the present study replicated these findings in a different group of children from different schools sampled nearly a decade later underscores that, like those of parents (see Lambert and Lyubansky, 1999), the ratings of teachers across urban and rural Jamaica are almost identical. The urban versus rural differences that occurred in an earlier clinic study (Lambert et al., 1989) may have reflected the differences in rural versus urban adults thresholds toward their children's problems when they decide to refer children for clinical intervention. As documented elsewhere (Lambert et al., 1989, 1999), rural adults must often travel vast distances to obtain clinical intervention for their children. Thus, adults from rural Jamaica must invest considerably more resources (i.e., time, money, and effort) than their urban counterparts when they decide to obtain clinical services for their children. Rural adults may therefore only seek clinical intervention for children they deem as having problems that are extensive or severe enough to warrant the effort and resources they must invest to obtain such services.

The present teacher-report findings and those of the earlier teacher-report survey seems to reflect the inferences drawn by MacMahon and Trichopoulos (1996) regarding urban versus rural comparisons in US-based and other epidemiological research. These authors implied that urban–rural differences are negligible and have not proven fruitful in the development of etiologic hypotheses. Except for externalizing problems we believe that this inference applies to the teacher report findings reported on Jamaican youth here, to those from teacher and parent reports recorded elsewhere (Lambert & Lyubansky, 1999), and to the ratings of unbiased observers.

Adding to the growing body of literature on quantitative studies of Jamaican children, the present study revealed no differences between urban and rural teachers' and observers' ratings of most problems children from the general Jamaican population present. The fact that this finding is emerging in research done in contemporary Jamaica versus that qualitatively observed in Jamaica nearly half a century ago is not surprising. Whether they reside in urban or rural areas, most modern day Jamaica adults (including parents and teachers) receive similar information regarding children's behavior and other developmental issues via the media. Much of this information is provided by local child development experts via the Jamaican media. Nevertheless the proliferation cable television with its plethora of stations from the United States provides a steady "diet" of US-based child development and behavior information to nearly all Jamaicans. The local and international information on normal and abnormal child development received by all adults across all regions of Jamaica may set both urban and rural adults

thresholds toward problems children present at equal levels. Their ratings on problems children from the general population are therefore similar.

Turning to the medium effects for urban versus rural differences in unbiased observers ratings, these findings revealed higher externalizing scores for rural than urban children. Similar findings were observed for teacher reports, but the effects for teachers were small. We view this finding as being especially intriguing. It sharply contrasts with those of the contemporary quantitative findings (e.g., Lambert and Lyubansky, 1999) and the earlier qualitative literature base (see Clarke, 1957) on problems Jamaican children present. The present findings underscore that the ratings of adults who are directly involved with children may be virtually invariant as far as urban–rural area of residence is concerned. Nevertheless, the actual behavior that children exhibit in the classroom settings may vary according to whether these children live in urban versus rural areas.

It is possible that by virtue of their environment where rural Jamaican children have the opportunity (e.g., via more wide open space) to discharge their behavior in the environment (i.e., the form externalizing problems usually take), they may continue to behave similarly within the context of the classroom. Because of their habituation to children's behavior in the urban versus rural settings in which they work, Jamaican teachers ratings may reflect the adjustment of their threshold levels to such behavior. Thus, while teacher reports do reflect the differences in behavior of school children in urban and rural contexts, the magnitude of their ratings is smaller than those of unbiased observers.

The overall informant differences may also reflect the demand characteristics that occur when teachers are asked to rate children's problems (see Weisz et al., 1995). The JTRF requests that the teachers rate their pupils' problems based on the preceding 2 months. Nevertheless, the teachers rated their pupils almost at the end of the academic year when they had extensive knowledge regarding each child. Teachers may have ostensibly used their comprehensive knowledge of their pupil's behavior over the year in their ratings rather than rating each child's behavior in the shorter period the measure requested.

When viewed in the context of almost no significant effects for teachers' reports, the significant and large age effects for observers' reports are also noteworthy. The recent parent and teacher report Jamaican national study (Lambert et al., 1999) study revealed findings that are similar to those the observers' reports revealed. The findings presented here might indicate greater present-day teacher tolerance toward behavior and emotional problems younger Jamaican children exhibit than lower threshold levels in the previous decade. These findings may also be interpreted in the context of the inferences we drew above regarding the small size of significant effects across urban versus rural teacher reports for externalizing problems. They should also be viewed within the framework of contrasting medium significant effects for urban–rural differences that emerged for observers' reported externalizing problems. The findings observed here may reflect differences between the actual behavior that younger elementary children exhibit and the high thresholds of tolerance Jamaican teachers nationwide hold toward these types of behavior.

As discussed earlier, teachers' reports may be attributed to the influence of the media, but other factors may also be responsible. One such factor is the recent upgrade in education that many well-experienced Jamaican teachers were required to undertake during the past decade. Many teachers returned to teachers' colleges throughout the Island where besides academic subject content areas, they obtained intensive education in child development issues. Their updated knowledge regarding differences in behavior of children at various stages of development may have increased their thresholds of tolerance for age-appropriate behavior in younger children. Observers by contrast, were trained to rate behavior as it occurred in the classroom setting and not asked to make judgments on the age appropriateness of such behavior.

In contrast to the inferences drawn regarding the present findings, one could also argue that the measures (i.e., DOF versus TRF) used by each set of informants are different from one another. The differences between the measures may have contributed to the divergent findings across teachers' and observers' reports. Another possible argument is that the present study was done on a different sample of children than that of previous studies. These artifactual notions are, however, debunked when viewed in the context of the fact that only the 86 similar items across both measures were used in the present analyses. Moreover, most of the nonsignificant urban–rural findings from the earlier teacher and parent reports study (Lambert & Lyubansky, 1999) were observed in the present study.

The differences between informant ratings in the present study raise a question regarding which set of informants provide more accurate information. In other words, whose report should clinicians and researchers put most credence in when they evaluate or study Jamaican children of different ages from different regions of the Island. The answer depends on the type of information the professional desires. Earlier in our discussion we lauded the impartiality of observers reports and their ability to reveal important gender and regional differences, findings that may be masked by teachers' attitudes and thresholds toward children's behavior. The reader should, however, remember that as presented in the introduction, we highlighted the importance of attending to the reports of adults including teachers and parents during child assessment. We further noted that such adults can provide information that emerges from long-term history and knowledge regarding target children. Much of this information may be so low in base rates (e.g., strange behavior or ideas, complains of loneliness) that they rarely occur during 10 min observation samples (Weisz et al., 1995). Others may require long-term and intimate knowledge regarding the child's behavior over time (e.g., rating depression based on baseline knowledge of the child's mood state) that observers and other professionals can never cultivate.

We therefore echo Weisz and his colleagues' (1995) assertion that the appropriateness of information from one type of informant depends entirely on the type of information the researcher or clinician desires. The reports that teachers and other adult reporters provide may be important to professionals who desire histrorically based information on which to base diagnostic and other important clinical decisions. Unbiased reports of classroom behavior may be helpful to the

professional who is interested in gathering baseline classroom behavior and assessing the effects of intervention on this behavior.

Having discussed the value of the present findings, the limitations the present study possesses temper the inferences we have drawn from them. Although we were careful to sample children from schools and classrooms in urban and rural areas of Jamaica, we cannot profess that children from the six institutions sampled here represent children from the entire island. The choice to train and transport observers from another nation to observe problems in Jamaican children may be another drawback. While we may have eliminated many Jamaican-based biases, we cannot be certain that the observers' ratings do not represent some of their own cultural biases and that these stances may account for some findings presented here.

Turning to the measures, although we modified the teacher measure to reflect Jamaican idiomatic expressions and added items that were clinically relevant for Jamaican youth, the DOF was used in its US-based format. Because we have no information on the factor structure of the problems on the JTRF and how the Jamaican problems might fit into this factor structure, these problems were not incorporated in the analyses. Also, we have no information on the factor structure for all items on either measure for Jamaican children. It may be argued that the responses to the measures could be subjected to a confirmatory factor analytical (CFA) procedures. Nevertheless the sizes of the present sample were much too small to make CFA findings reliable. Moreover dimensions from the CBCL-based system were derived from clinical samples and not general population samples such as our own. Thus like our own (Lambert et al., 1998; Puig et al., 1999) and other research (Achenbach et al., 1990; Weisz et al., 1995) that used the CBCL in nations outside the United States we relied on dimensions that were empirically derived on US samples to classify Jamaican children's problems.

Data from large clinical and a representative general population samples that use both measures throughout Jamaica are needed to address the shortcomings of the study. If observation data from general populations are simultaneously collected by native Jamaican and international observers, the convergence of ratings from local and international raters can be addressed. Comparing the ratings of teachers, local and international observers would further address the question of potential cultural biases in observers' ratings. The general population sample could also resolve the doubts regarding sample representativeness. Large clinical samples such as those currently being collected in Jamaica can allow the testing of factor structure equivalence (i.e., of those established on US population samples) via confirmatory factor analyses. If the US-based child-problem factor structures are replicated for the Jamaican sample, one can be more confident of the psychometric soundness of the measures used and that the present findings do not represent measurement artifacts. On the other hand, if factor equivalence is refuted and exploratory factor analyses reveal theoretically interpretable dimensions on either or both measures for Jamaican youth, the analyses of the present study may be repeated using the newly derived Jamaican dimensions.

While the present findings must be interpreted in the context of the methodological drawbacks described above, they can be useful to clinicians who

treat Jamaican children, educators who train the next generation of service providers, and trainers who provide in service training for practitioners who treat Jamaican youth. These professionals should bear in mind that information from unbiased observers versus that provided by adults who are directly involved in children's everyday lives may differ. They should also know that while the differences are in "the eyes of the beholder", the absence of gold standards regarding which informant provides the most trustworthy information, suggests that assessment data from multiple informants can provide richer and more comprehensive information on children's functioning.

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