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# The Nisonger Child Behavior Rating Form: Age and Gender Effects and Norms

**Marc J. Tassé, Michael G. Aman, David Hammer, and Johannes Rojahn**

*The Nisonger Center for Mental Retardation and Developmental Disabilities, The Ohio State University*

*The Nisonger CBRF is a new informant behavior rating scale that was adapted for assessing children and adolescents with mental retardation. A total of 369 children referred to interdisciplinary diagnostic clinics for children with developmental disabilities were rated on the Nisonger Child Behavior Rating Form by their parents and teachers. Normative data (means, T scores, and percentiles) are presented. Subscale scores were analyzed as a function of age and gender. Age influenced 3 of 8 subscales on the parent ratings and 1 subscale on the teacher ratings. Gender did not influence subscale scores. Age and gender results are discussed in relation to previous studies of subject variables.*

Recent prevalence estimates of psychopathology and behavior problems in individuals with mental retardation vary widely, ranging from 10% to 40% (Rojahn & Tassé, in press). Many factors, unrelated to psychopathology and behavior problems, may account for much of the variability in reported prevalence, such as different methodologies used in the studies, sampling techniques, or number of disorders evaluated. More in-depth reviews of these factors are

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Requests for reprints should be addressed to Marc J. Tassé, Department of Psychology, Université du Québec à Montréal, P.O. Box 8888, Station Centre-Ville, Montreal, Quebec, Canada H3C 3P8; Internet: TASSE.MARC_J@UQAM.CA; or to Michael G. Aman, The Nisonger Center UAP, The Ohio State University, 1581 Dodd Drive, Columbus, OH 43210.

contained in Jacobson (1990), Nezu, Nezu, and Gill-Weiss (1992), and Reiss (1994). There seems to be a consensus among clinicians and researchers that people with mental retardation experience the entire range of psychopathology (Menolascino, 1988). Although recent epidemiological studies (Reiss & Valenti-Hein, 1994; Rojahn, Borthwick-Duffy, & Jacobson, 1994) reported that prevalence of behavioral and emotional problems in children with mental retardation is lower than that in adults with mental retardation, such problems remain markedly higher than in children of average intelligence (Rutter, Tizard, Yule, Graham, & Whitmore, 1976).

Aman (1991a) conducted an extensive review of instruments for assessing psychopathology and behavior problems in persons with mental retardation. In a sequel to this review, Aman (1991b) addressed the complexity of assessment within this population. In order to deal with all relevant dimensions, it is necessary to consider the separate domains of age (childhood, adolescence, and adulthood), functional level (mild through profound mental retardation), and type of informant (e.g., self, significant other, and clinician). Following his review of the existing instruments and their psychometric properties, Aman (1991a) identified a particular need for instruments for children with mental retardation.

To address this need, we set out to adapt an existing informant instrument for assessing children with developmental disabilities. After reviewing the available tools for assessing children, irrespective of IQ, we settled on the Child Behavior Rating Form (CBRF), which was developed by Edelbrock and Rancurello at the Western Psychiatric Institute and Clinic in Pittsburgh[1] (Edelbrock, 1985). Later, Kolko (1988) studied the CBRF in psychiatric inpatient children and determined that its psychometric characteristics were sound. Kolko also conducted a factor analysis on data from some 200 children and developed a tentative scoring system for the instrument.

However, the CBRF has received little attention in the mental retardation literature. As it seemed to be an instrument with good face validity for this population and as it covered a wide range of internalizing and externalizing problems, we decided to adapt it for use with children with mental retardation. (In a companion paper [Aman, Tassé, Rojahn, & Hammer, 1996, pp. 41–57, in this issue.], we described the procedures used to do this.) The major changes and additions to the original CBRF included the following. First, we altered the instructions so that raters were asked to assess both frequency of occurrence and problem severity. Second, several items were rewritten to make them more specific and/or concrete. Third, several items descriptive of self-injury, stereotypic behavior, and affective problems were added (Aman et al., 1996). We collected data on 369 children and had these youngsters rated by their parents and (most of them) by their teachers. Separate factor analyses on the parent and teacher ratings resulted in parent and teacher versions of the Nisonger CBRF.

[1]The authors wish to thank Drs. Craig Edelbrock and Michael Rancurello for permission to use CBRF items.

These versions were quite similar, but they had enough differences to warrant retention of slightly different item pools and slightly different scoring schemes. We named the modified scale the Nisonger CBRF, after the University Affiliated Program for Mental Retardation and Developmental Disabilities at The Ohio State University where it was developed. The Nisonger CBRF was found to have good internal consistency, strong concurrent validity with similar subscales on the Aberrant Behavior Checklist (ABC; Aman & Singh, 1986), and moderate-to-good parent-teacher agreement (see Aman et al., 1996).

We believe the Nisonger CBRF is a sound instrument for assessing emotional and behavioral problems in children and adolescents with mental retardation. Therefore, we would like to make it broadly available to clinicians and researchers. The goals of this paper were to (a) examine the age and gender effects across the different subscales of the Nisonger CBRF for the parent and teacher versions and (b) provide useful normative data for clinicains using the Nisonger CBRF.

## METHOD

### *Participants*

A total of 369 children and adolescents between the ages of 3 and 16 years participated in this study. Children were consecutive clients visiting the Nisonger Center interdisciplinary clinics for MR/DD between 1988 and 1994. IQs were not available for all participants. However, cognitive functioning of clients referred to the Nisonger Center clinics usually falls in the mental retardation range, with the majority having mild mental retardation (i.e., IQ approximately 55–70).

The Nisonger CBRF[2] was completed by the parents of 326 participants. Participants' mean age was 6.71 years (*SD* = 3.37, *Mdn* = 6.00 years); 114 were girls (35.0%) and 212 (65.0%) were boys. The teachers of 260 participants (mean age = 7.26 years, *SD* = 3.39, *Mdn* = 6.00) completed the Nisonger CBRF. Eighty participants were girls (30.8%), and 180 (69.2%) were boys. The types of classes attended by the participants included regular, developmental handicap, multi handicap, severe behavior handicap, orthopedic handicap, and sensory handicaps (see Table 1). Further details about the sample are reported in Aman et al. (1996).

### *Instrument*

The Nisonger CBRF is an informant-based instrument for rating the behavior of children and adolescents between the ages of 3 and 16 years and is completed

[2]Copies of the parent and teacher versions of the Nisonger CBRF and their scoring systems can be obtained from either of the first two authors (M.J.T. or M.G.A.).

**TABLE 1**
**Class Types for Teacher Ratings**

| Class Type | *n* | Percentage |
|---|---|---|
| Regular | 65 | 25.0 |
| Developmental handicap | 50 | 19.2 |
| Multi handicap | 38 | 14.6 |
| Severe behavior handicap | 99 | 38.1 |
| Hearing impaired | 2 | 0.8 |
| Learning disability | 1 | 0.4 |
| Orthopedic handicap | 4 | 1.5 |
| Visual impairment | 1 | 0.4 |
| Total | 260 | 100 |

by a person who knows the youngster well. The informant is asked to assess the child's behavior during the last month.

The Nisonger CBRF consists of two versions, the parent and teacher versions. Both versions of the Nisonger CBRF contain two sections: (a) Social Competence and (b) Problem Behaviors. The Social Competence section contains 10 items describing adaptive/prosocial types of behavior (e.g., "Was cheerful or happy") and are rated on a 4-point Likert scale that ranges from 0 (Not true) to 3 (Completely or always true). The Problem Behavior section contains a series of maladaptive behaviors (e.g., "Defiant, challenges adult authority") that are rated on a 4-point Likert scale taking into account a combination of rate of occurrence and degree to which the behavior presented a problem. The scale ranges from 0 (Did not occur or was not a problem) to 3 (Occurred a lot or was a severe problem).

The parent version can be completed by a parent, mature sibling, or caregiver. The Social Competence section consists of two subscales labeled as Compliant/Calm and Adaptive Social. The Problem Behavior section comprises 60 items. The Behavior Problem section is scored onto six subscales labeled as (a) Conduct Problem, (b) Insecure/Anxious, (c) Hyperactive, (d) Self-Injury/Stereotypic, (e) Self-Isolated/Ritualistic, and (f) Overly Sensitive.

The teacher version may be completed by a teacher or teacher aide. The Social Competence subscales are labeled the same as those in the parent version. Most behavior problem subscales share the same names (and most of the same items), except Subscale 6, which is substantially different and is called Irritable.

The face sheet is identical for both versions of the Nisonger CBRF except that two informational items have been added to the teacher version: (a) type of class and (b) how long the child has been in the class.

### *Procedure*

Two copies of the Nisonger CBRF were given to all parents of children consulting the Nisonger Center interdisciplinary clinics. Parents were asked to

complete one copy and to forward the other copy to their child's teacher for completion. Data from all consecutive cases seen between 1988 and 1994 were included in this study.

A series of analyses of variance (ANOVAs) were performed to assess the effect of gender and age on subscale scores of the Nisonger CBRF. Separate ANOVAs were performed for the parent and teacher versions. *Unweighted* means corrected for uneven sample sizes in the various cells of the factorial design. Subscale scores were analyzed as a function of gender and age, which was divided into approximate quartiles (i.e., 3–4, 5–6, 7–9, and 10–16 years). All statistical analyses were carried out using the Statistical Package for Social Sciences (SPSS) for Windows (SPSS, 1993).

## RESULTS

### *Main Effects for Age and Gender*

The main effects of age are presented in Table 2. Statistically significant main effects were found for age on three subscales of the parent version and

**TABLE 2**
**Summary of the ANOVA Results for the Main Effect of Age**

| | Age in Years | | | | | |
|---|---|---|---|---|---|---|
| | (1) 3 & 4 | (2) 5 & 6 | (3) 7 to 9 | (4) 10 to 16 | *F* | Source of Significance[c] |
| Parents[a] | | | | | | |
| Compliant/Calm | 6.94 | 6.92 | 7.23 | 6.77 | 0.21 | |
| Adaptive Social | 4.06 | 4.26 | 4.61 | 4.55 | 0.88 | |
| Conduct Problem | 15.07 | 18.06 | 17.24 | 20.42 | 2.39 | |
| Insecure/Anxious | 4.00 | 7.06 | 7.17 | 11.24 | 13.21** | 1:2, 1:3, 1:4, 2:4, 3:4 |
| Hyperactivity | 11.94 | 12.37 | 12.84 | 15.22 | 2.64* | 1:4, 2:4 |
| Self-Injury/Stereo. | 2.53 | 3.39 | 2.53 | 3.64 | 1.39 | |
| Self-Isolated/Rit. | 4.85 | 4.81 | 4.88 | 6.78 | 2.72* | 1:4, 2:4, 3:4 |
| Overly Sensitive | 6.06 | 6.67 | 5.67 | 6.12 | 0.72 | |
| Teachers[b] | | | | | | |
| Compliant/Calm | 6.26 | 5.48 | 6.28 | 6.15 | 0.66 | |
| Adaptive Social | 4.65 | 4.71 | 5.66 | 5.29 | 1.29 | |
| Conduct Problem | 9.03 | 11.49 | 12.20 | 12.76 | 1.55 | |
| Insecure/Anxious | 4.34 | 7.64 | 7.08 | 10.54 | 6.18** | 1:2, 1:4, 2:4, 3:4 |
| Hyperactivity | 10.88 | 11.32 | 12.03 | 11.08 | 0.31 | |
| Self-Injury/Stereo. | 3.78 | 4.26 | 4.19 | 5.23 | 0.70 | |
| Self-Isolated/Rit. | 7.80 | 8.59 | 7.38 | 9.39 | 1.01 | |
| Irritability | 6.35 | 7.36 | 6.86 | 7.35 | 0.42 | |

[a]Degrees of freedom = 3 & 318.
[b]Degrees of freedom = 3 & 252.
[c]Fisher's least-significant difference post hoc test.
* $p < .05$, ** $p < .001$.

one subscale of the teacher version. On the parent version, a main effect for age was found on the Insecure/Anxious, Hyperactivity, and Self-Isolated/Ritualistic subscales. In addition, a main effect for age was found on the Insecure/Anxious subscale of the teacher version. In all cases, average subscale scores were higher for the older participants, indicating more severe problems.

No statistically significant main effects were found as a function of gender for subscale scores of either version. Table 3 presents two significant interaction effects for age and gender. These occurred on the Conduct Problem — $F$ (3, 318) = 2.64, $p < .05$] — and Insecure/Anxious — $F$ (3, 318) = 4.63, $p < .01$ — subscales of the parent version. No significant interactions were found on the teacher version.

*Norms*

The means and standard deviations for all subscales by age groups and collapsed on gender are presented in Tables 4 and 5. Table 6 presents the means and standard deviations by age groups and gender for the two subscales in which significant interactions where found. Raw scores were estimated for specified percentile rankings using cumulative frequency tables. Tables 7 and 8 contain the raw scores at the 50th through 95th percentile (with 5-point increments) and 97th percentile of our normative sample for each subscale by age groups and collapsed on gender.

Since scores on the two Social Competence subscales (Compliant/Calm and Adaptive Social) consist of prosocial/adaptive behavior, the percentile rankings for these two subscales were reversed (i.e., the percentile represents the proportion of individuals who scored "higher" on this scale). Hence, a raw score associated with a high percentile ranking indicates that most children had more prosocial behavior and hence signifies a clinically significant deviation.

The raw scores at the specified percentile rankings and their respective $T$ scores by age groups and gender for the Conduct Problem and Insecure/Anxious subscales of the parent version are presented in Table 9. The raw scores at each percentile ranking for all subscales were estimated using SPSS

**TABLE 3**
**Summary of ANOVA Results for Significant Age and Gender Interactions: Parent Ratings**

| | Conduct Problem | | Insecure/Anxious | |
|---|---|---|---|---|
| Age (Years) | Boys | Girls | Boys | Girls |
| 3–4 | 15.42 | 14.72 | 3.08 | 4.91 |
| 5–6 | 16.97 | 19.14 | 5.26 | 8.86 |
| 7–9 | 21.33 | 13.15 | 9.64 | 4.69 |
| 10–16 | 18.75 | 22.08 | 10.02 | 12.46 |

**TABLE 4**
**Norms for the Nisonger CBRF: Parent Version. Means and Standard Deviations**

| | | Compliant/ Calm | | Adaptive Social | | Conduct Problem | | Insecure/ Anxious | | Hyperactive | | Self-Injury/ Stereotypic | | Self-Isolated/ Ritualistic | | Overly Sensitive | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age (Years) | *n* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| 3–4 | 103 | 6.98 | 3.00 | 4.05 | 2.10 | 15.13 | 10.92 | 3.82 | 4.70 | 11.90 | 7.47 | 2.53 | 3.56 | 4.79 | 3.97 | 5.93 | 3.96 |
| 5–6 | 90 | 7.16 | 3.27 | 4.40 | 2.28 | 17.48 | 12.87 | 6.10 | 7.12 | 12.10 | 7.36 | 3.01 | 4.22 | 4.69 | 4.89 | 6.34 | 3.96 |
| 7–9 | 65 | 7.25 | 3.63 | 4.63 | 2.88 | 18.06 | 13.48 | 7.66 | 7.89 | 13.20 | 7.91 | 2.63 | 4.19 | 5.00 | 4.51 | 5.82 | 3.94 |
| 10–16 | 68 | 6.72 | 3.50 | 4.49 | 2.47 | 19.93 | 14.03 | 10.88 | 9.65 | 15.00 | 7.38 | 3.38 | 4.62 | 6.66 | 5.58 | 5.87 | 3.81 |

**TABLE 5**
**Norms of the Nisonger CBRF: Teacher Version. Means and Standard Deviations**

| Age (Years) | *n* | Compliant/ Calm | | Adaptive Social | | Conduct Problem | | Insecure/ Anxious | | Hyperactive | | Self-Injury/ Stereotypic | | Self-Isolated/ Ritualistic | | Irritable | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| 3–4 | 63 | 6.11 | 3.18 | 4.64 | 2.85 | 9.33 | 8.52 | 4.02 | 4.50 | 10.60 | 7.08 | 3.79 | 4.82 | 7.05 | 6.17 | 6.37 | 5.37 |
| 5–6 | 69 | 5.36 | 2.79 | 4.59 | 2.87 | 11.40 | 9.01 | 6.96 | 7.23 | 11.70 | 7.15 | 4.19 | 5.54 | 8.38 | 6.83 | 7.22 | 5.37 |
| 7–9 | 61 | 6.25 | 3.70 | 5.51 | 3.35 | 12.60 | 10.20 | 7.16 | 6.84 | 12.50 | 6.40 | 4.30 | 5.71 | 7.72 | 6.86 | 6.79 | 5.48 |
| 10–16 | 67 | 5.96 | 3.78 | 5.36 | 3.44 | 13.20 | 11.00 | 10.70 | 10.40 | 11.10 | 6.60 | 5.10 | 5.73 | 9.06 | 6.95 | 7.25 | 5.37 |

**TABLE 6**
**Nisonger CBRF: Parent Version. Means and Standard Deviations for Conduct and Insecure**

| | Conduct Problem | | | | | | Insecure/Anxious | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Boys | | | Girls | | | Boys | | | Girls | | |
| Age (Years) | *n* | *M* | *SD* | *n* | *M* | *SD* | *n* | *M* | *SD* | *n* | *M* | *SD* |
| 3–4 | 60 | 15.42 | 11.24 | 43 | 14.72 | 10.58 | 60 | 3.08 | 3.80 | 43 | 4.91 | 5.59 |
| 5–6 | 69 | 16.97 | 12.08 | 21 | 19.14 | 15.41 | 69 | 5.26 | 5.98 | 21 | 8.86 | 9.68 |
| 7–9 | 39 | 21.33 | 14.78 | 26 | 13.15 | 9.57 | 39 | 9.64 | 8.91 | 26 | 4.69 | 4.83 |
| 10–16 | 44 | 18.75 | 12.14 | 24 | 22.08 | 17.03 | 44 | 10.02 | 8.34 | 24 | 12.46 | 11.73 |

for Windows (SPSS, 1993). Lotus for Windows (Lotus Development Corporation, 1993) was used to assign *T* scores to the raw subscale scores at the predefined percentile rankings. The formula used for assigning *T* scores to raw subscale scores can be found in Lyman (1978).

## DISCUSSION

It is important to note that the children studied here were not a random sample of the population with developmental disabilities. Instead, the families concerned were seeking guidance for an array of problems, including appropriate educational placement, behavior problems, feeding problems, and chronic physical ailments. As such, our norms do not reflect average behavior of youngsters with developmental disabilities but can be said to be typical of children seen at a University-affiliated program in the American Midwest. Epidemiological data from a representative sample of children with mental retardation would be helpful in providing standardization data for the Nisonger CBRF. However, we caution users that, when such data become available, traditional statistical cutoffs (e.g., scoring above two standard deviations) are probably not an appropriate point at which to designate problem behavior. As the rate of behavioral and emotional problems is much higher among children and adults with mental retardation than in the general population (Stark, Menolascino, Albarelli, & Gray, 1988), the cutoff for identifying potentially problematic behavior should be much more liberal. As a guideline for using another instrument (the Aberrant Behavior Checklist — Community), Aman and Singh (1994) suggested using the 85th percentile as a reasonable (although arbitrary) cutoff.

It is difficult to assess the generality of the age effects observed here because there is simply very little research of this type published in the developmental disabilities field. This is especially true if the discussion is confined to children residing in the community. The most robust age effect was for the Insecure/Anxious subscale scores, which increased with age for both parent and teacher ratings.

**TABLE 7**
**Norms for the Nisonger CBRF: Parent Version. Percentiles, Raw Subscale Scores, and *T* Scores**

| Age Group | %ile | Raw score: Compliant/ Calm | *T* | Adaptive Social | *T* | Conduct Problem | *T* | Insecure/ Anxious | *T* | Hyper-active | *T* | Self-Injury/ Stereotypic | *T* | Self-Isolated/ Ritualistic | *T* | Overly Sensitive | *T* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3–4 | 50 | 7 | 50 | 4 | 50 | 13 | 48 | 2 | 46 | 12 | 50 | 1 | 46 | 3 | 45 | 5 | 48 |
| ($n$ = 103) | 60 | 6 | 54 | — | — | 16 | 51 | 3 | 48 | 14 | 53 | 2 | 49 | 4 | 48 | 6 | 50 |
| | 70 | — | — | — | — | 20 | 54 | 5 | 53 | 17 | 57 | 3 | 51 | 5 | 51 | — | — |
| | 75 | 5 | 57 | — | — | 22 | 56 | 6 | 55 | 19 | 60 | 4 | 54 | — | — | 8 | 55 |
| | 80 | — | — | 3 | 55 | 23 | 57 | 8 | 59 | 20 | 61 | 5 | 57 | 7 | 56 | 9 | 58 |
| | 85 | 4 | 60 | 2 | 60 | 26 | 61 | 9 | 61 | 22 | 64 | 6 | 60 | 10 | 63 | 11 | 63 |
| | 90 | 3 | 63 | — | — | 35 | 68 | 10 | 63 | 23 | 65 | 8 | 65 | 12 | 68 | — | — |
| | 95 | — | — | — | — | 37 | 70 | 15 | 74 | — | — | 10 | 71 | 14 | 73 | 13 | 68 |
| | 97 | 2 | 67 | 1 | 65 | 38 | 71 | 18 | 80 | 24 | 66 | 13 | 79 | 15 | 76 | 14 | 70 |
| 5–6 | 50 | 7 | 50 | — | — | 13 | 47 | 3 | 46 | 12 | 50 | 1 | 45 | 3 | 47 | 6 | 49 |
| ($n$ = 90) | 60 | 6 | 54 | 4 | 48 | 18 | 50 | 5 | 48 | 14 | 53 | — | — | 4 | 49 | 7 | 52 |
| | 70 | — | — | — | — | 26 | 57 | 7 | 51 | 17 | 57 | 3 | 50 | 6 | 53 | 8 | 54 |
| | 75 | 5 | 57 | 3 | 52 | 27 | 57 | 10 | 55 | 19 | 59 | 4 | 52 | 8 | 57 | 9 | 57 |
| | 80 | — | — | — | — | 31 | 61 | 12 | 58 | 20 | 61 | 6 | 57 | 9 | 59 | — | — |
| | 85 | 4 | 60 | — | — | 34 | 63 | 13 | 60 | 21 | 62 | 7 | 59 | 11 | 63 | 11 | 62 |
| | 90 | 3 | 63 | 2 | 57 | 38 | 66 | 15 | 63 | 22 | 63 | 9 | 64 | 12 | 65 | 12 | 64 |
| | 95 | 2 | 66 | — | — | 40 | 67 | 24 | 75 | 25 | 68 | 13 | 74 | 15 | 71 | 13 | 67 |
| | 97 | 1 | 69 | 1 | 61 | 44 | 71 | 27 | 79 | 26 | 69 | 15 | 78 | 17 | 75 | 14 | 69 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7–9 | 50 | 7 | 49 | — | — | 17 | 49 | 5 | 47 | 12 | 48 | — | — | 4 | 48 | 5 | 48 |
| ($n$ = 65) | 60 | — | — | 4 | 48 | 21 | 52 | 9 | 52 | 15 | 52 | 1 | 46 | 5 | 50 | 7 | 53 |
| | 70 | 6 | 51 | — | — | 25 | 55 | 11 | 54 | 18 | 56 | 3 | 51 | 7 | 54 | 8 | 56 |
| | 75 | — | — | 3 | 52 | 27 | 57 | 12 | 56 | 21 | 60 | — | — | 9 | 59 | — | — |
| | 80 | 5 | 54 | — | — | 30 | 59 | 14 | 58 | 22 | 61 | 4 | 53 | — | — | 10 | 61 |
| | 85 | 4 | 57 | 2 | 55 | 33 | 61 | 15 | 59 | 23 | 62 | 6 | 58 | 10 | 61 | — | — |
| | 90 | 2 | 62 | — | — | 37 | 64 | 19 | 64 | 25 | 65 | 11 | 70 | 12 | 66 | 11 | 63 |
| | 95 | — | — | — | — | 45 | 70 | 23 | 69 | 26 | 66 | 13 | 75 | 14 | 70 | 13 | 68 |
| | 97 | 1 | 65 | 1 | 59 | 48 | 72 | 25 | 72 | 27 | 67 | 14 | 77 | 15 | 72 | 14 | 71 |
| 10–16 | 50 | — | — | — | — | 18 | 49 | 9 | 48 | 15 | 50 | — | — | 6 | 49 | 5 | 48 |
| ($n$ = 68) | 60 | 6 | 48 | 4 | 48 | 22 | 51 | 11 | 50 | 18 | 54 | 2 | 47 | 8 | 52 | 7 | 53 |
| | 70 | — | — | — | — | 26 | 54 | 14 | 53 | 21 | 58 | 4 | 51 | 9 | 54 | — | — |
| | 75 | 5 | 51 | — | — | 30 | 57 | 16 | 55 | — | — | 5 | 54 | 10 | 56 | — | — |
| | 80 | 4 | 54 | 3 | 52 | 33 | 59 | 18 | 57 | 22 | 59 | 7 | 58 | 11 | 58 | 9 | 58 |
| | 85 | 3 | 57 | — | — | 40 | 64 | 22 | 62 | 23 | 61 | 9 | 62 | 12 | 60 | 10 | 61 |
| | 90 | 2 | 59 | 2 | 56 | 42 | 66 | 27 | 67 | 25 | 64 | 11 | 66 | 14 | 63 | 11 | 63 |
| | 95 | — | — | — | — | 46 | 69 | 32 | 72 | — | — | 14 | 73 | — | — | 13 | 69 |
| | 97 | 1 | 62 | 1 | 60 | 48 | 70 | 35 | 75 | 26 | 65 | 18 | 82 | 19 | 72 | 14 | 71 |

*Note.* When the same raw score occurred for two or more percentiles, that score was replaced by a dash in the lower percentile rank. Raw subscale scores have been rounded off to the nearest integer.

**TABLE 8**
**Norms for the Nisonger CBRF: Teacher Version. Percentiles, Raw Subscale Scores, and *T* Scores**

| | | Raw score | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age Group | %ile | Compliant/ Calm | *T* | Adaptive Social | *T* | Conduct Problem | *T* | Insecure/ Anxious | *T* | Hyper- active | *T* | Self-Injury/ Stereotypic | *T* | Self-Isolated/ Ritualistic | *T* | Irritable | *T* |
| 3–4 | 50 | — | — | 4 | 48 | 7 | 47 | 2 | 46 | 11 | 51 | 3 | 48 | 5 | 47 | 6 | 49 |
| (*n* = 63) | 60 | 5 | 47 | — | — | 9 | 50 | 3 | 48 | 14 | 55 | 4 | 50 | 7 | 50 | 7 | 51 |
| | 70 | — | — | — | — | 13 | 54 | 5 | 52 | 16 | 58 | 5 | 53 | 10 | 55 | 10 | 57 |
| | 75 | 4 | 51 | 3 | 52 | 15 | 57 | 6 | 54 | 17 | 59 | — | — | 11 | 56 | 11 | 59 |
| | 80 | — | — | — | — | 18 | 60 | 7 | 57 | 18 | 60 | — | — | 12 | 58 | 13 | 62 |
| | 85 | 3 | 54 | 2 | 55 | 20 | 63 | 9 | 61 | 19 | 62 | 6 | 55 | 13 | 60 | — | — |
| | 90 | — | — | — | — | 24 | 67 | 10 | 63 | 20 | 63 | 10 | 63 | 15 | 63 | 14 | 64 |
| | 95 | 2 | 57 | — | — | 27 | 71 | 15 | 74 | 21 | 65 | 17 | 77 | 21 | 73 | 15 | 66 |
| | 97 | 1 | 60 | 1 | 59 | 31 | 75 | 16 | 77 | 22 | 66 | 18 | 79 | 22 | 74 | 17 | 70 |
| 5–6 | 50 | — | — | 4 | 48 | 10 | 48 | 4 | 46 | 12 | 50 | 1 | 44 | 7 | 48 | 7 | 50 |
| (*n* = 69) | 60 | 5 | 53 | — | — | 13 | 52 | 8 | 51 | 14 | 53 | 4 | 50 | 9 | 51 | 8 | 51 |
| | 70 | — | — | — | — | 16 | 55 | 10 | 54 | 17 | 57 | 5 | 51 | — | — | 11 | 57 |
| | 75 | 4 | 61 | 3 | 52 | 17 | 56 | 11 | 56 | 19 | 60 | 8 | 57 | 12 | 55 | — | — |
| | 80 | 3 | 64 | — | — | 18 | 57 | 12 | 57 | 20 | 62 | 9 | 59 | 13 | 57 | 12 | 59 |
| | 85 | — | — | 2 | 55 | 20 | 60 | 14 | 60 | — | — | 10 | 60 | 14 | 58 | 14 | 63 |
| | 90 | 2 | 68 | — | — | 26 | 66 | 19 | 67 | 21 | 63 | 12 | 64 | 18 | 64 | 16 | 66 |
| | 95 | — | — | — | — | — | — | 23 | 72 | 22 | 64 | 19 | 77 | 25 | 74 | — | — |
| | 97 | 1 | 72 | 1 | 59 | 31 | 72 | 24 | 74 | 23 | 66 | 20 | 79 | 27 | 77 | 17 | 68 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7–9 | 50 | 6 | 49 | — | — | 11 | 48 | 5 | 47 | 12 | 49 | 2 | 46 | 7 | 49 | 5 | 47 |
| ($n$ = 61) | 60 | 5 | 51 | 5 | 48 | 15 | 52 | 6 | 48 | 15 | 54 | 3 | 48 | 8 | 50 | 6 | 49 |
| | 70 | — | — | 4 | 51 | 18 | 55 | 9 | 53 | 17 | 57 | 5 | 51 | — | — | 10 | 56 |
| | 75 | 4 | 54 | 3 | 53 | 20 | 57 | 10 | 54 | 18 | 59 | 7 | 55 | 10 | 53 | 12 | 60 |
| | 80 | — | — | — | — | 22 | 59 | 13 | 59 | — | — | 8 | 56 | 14 | 59 | 13 | 61 |
| | 85 | — | — | 2 | 56 | 24 | 61 | 15 | 61 | 19 | 60 | 11 | 62 | 16 | 62 | 14 | 63 |
| | 90 | — | — | — | — | 29 | 66 | 17 | 64 | 21 | 63 | 13 | 65 | 19 | 66 | 16 | 67 |
| | 95 | — | — | — | — | 30 | 67 | 20 | 69 | 23 | 66 | 20 | 77 | 23 | 72 | — | — |
| | 97 | 2 | 59 | 1 | 59 | 36 | 73 | 28 | 80 | 24 | 68 | 21 | 79 | 26 | 77 | 18 | 70 |
| 10–16 | 50 | 6 | 50 | 5 | 49 | 11 | 48 | 8 | 47 | 10 | 48 | 3 | 46 | 9 | 50 | 6 | 48 |
| ($n$ = 67) | 60 | 5 | 52 | 4 | 52 | 15 | 52 | 11 | 50 | 13 | 53 | 5 | 50 | 12 | 54 | 9 | 53 |
| | 70 | — | — | — | — | 18 | 54 | 15 | 54 | 15 | 56 | 7 | 53 | 13 | 56 | 11 | 57 |
| | 75 | — | — | — | — | 19 | 55 | 18 | 57 | 17 | 59 | 9 | 57 | — | — | 12 | 59 |
| | 80 | 3 | 62 | 3 | 55 | 24 | 60 | 20 | 59 | 18 | 60 | 10 | 59 | 14 | 57 | 13 | 61 |
| | 85 | — | — | 2 | 58 | 27 | 63 | 23 | 62 | 20 | 63 | 11 | 60 | 15 | 59 | 14 | 63 |
| | 90 | — | — | — | — | 32 | 67 | 26 | 65 | 21 | 65 | 15 | 67 | 16 | 60 | 15 | 64 |
| | 95 | — | — | — | — | — | — | 29 | 68 | — | — | 18 | 73 | 24 | 71 | — | — |
| | 97 | 1 | 67 | 1 | 61 | 36 | 71 | 41 | 69 | 22 | 67 | 20 | 76 | 25 | 73 | 17 | 68 |

*Note.* When the same raw score occurred for two or more percentiles, that score was replaced by a dash in the lower percentile rank. Raw subscale scores have been rounded off to the nearest integer.

**TABLE 9**
**Norms for Nisonger CBRF: Parents Version. Presented by age and gender**

| | | Conduct Problem | | | | Innsecure/Anxious | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group | %ile | Boys | *T* | Girls | *T* | Boys | *T* | Girls | *T* |
| 3–4 | 50 | 13 | 48 | 14 | 49 | — | — | 2 | 45 |
| (boys *n* = 60; | 60 | 17 | 51 | 16 | 51 | 2 | 47 | 4 | 48 |
| girls *n* = 43) | 70 | 20 | 54 | 20 | 55 | 3 | 50 | — | — |
| | 75 | 22 | 56 | 22 | 57 | — | — | 8 | 56 |
| | 80 | 23 | 57 | 25 | 60 | 5 | 55 | — | — |
| | 85 | 28 | 61 | 26 | 61 | 8 | 63 | 9 | 57 |
| | 90 | 36 | 68 | 31 | 65 | 9 | 66 | 13 | 64 |
| | 95 | 38 | 70 | 37 | 71 | 12 | 73 | 18 | 73 |
| | 97 | 40 | 72 | 38 | 72 | 14 | 79 | 21 | 79 |
| 5–6 | 50 | 13 | 47 | 14 | 47 | 3 | 46 | 4 | 45 |
| (boys *n* = 69; | 60 | 17 | 50 | 21 | 51 | 4 | 48 | 10 | 51 |
| girls *n* = 21) | 70 | — | — | 31 | 58 | 6 | 51 | 14 | 55 |
| | 75 | 26 | 57 | 35 | 60 | 8 | 55 | 15 | 56 |
| | 80 | 29 | 60 | 39 | 63 | 10 | 58 | 16 | 57 |
| | 85 | 33 | 63 | 40 | 64 | 12 | 61 | 23 | 65 |
| | 90 | 38 | 67 | 43 | 65 | 13 | 63 | 27 | 69 |
| | 95 | — | — | — | — | 20 | 75 | — | — |
| | 97 | 40 | 69 | 46 | 67 | 22 | 78 | 30 | 72 |
| 7–9 | 50 | 21 | 50 | 13 | 50 | 9 | 49 | 2 | 44 |
| (boys *n* = 39; | 60 | 25 | 52 | 17 | 54 | 11 | 52 | 3 | 47 |
| girls *n* = 26) | 70 | 31 | 57 | 20 | 57 | 12 | 53 | 6 | 53 |
| | 75 | 33 | 58 | 21 | 58 | 15 | 56 | 8 | 57 |
| | 80 | 35 | 59 | 23 | 60 | 16 | 57 | 10 | 61 |
| | 85 | 38 | 61 | 25 | 62 | 20 | 62 | 12 | 65 |
| | 90 | 43 | 65 | 27 | 64 | 22 | 64 | 14 | 69 |
| | 95 | 48 | 68 | — | — | 25 | 67 | — | — |
| | 97 | 50 | 69 | 29 | 67 | 38 | 82 | 15 | 71 |
| 10–16 | 50 | 16 | 48 | 21 | 49 | 8 | 48 | 10 | 48 |
| (boys *n* = 44; | 60 | 22 | 53 | 24 | 51 | 10 | 50 | 14 | 51 |
| girls *n* = 24) | 70 | 25 | 55 | 37 | 59 | 13 | 54 | 15 | 52 |
| | 75 | 27 | 57 | — | — | 15 | 56 | 21 | 57 |
| | 80 | 31 | 60 | 41 | 61 | 17 | 58 | 27 | 62 |
| | 85 | 34 | 63 | 46 | 64 | 20 | 62 | 28 | 63 |
| | 90 | 38 | 66 | — | — | 23 | 66 | 33 | 68 |
| | 95 | 42 | 69 | — | — | 31 | 75 | — | — |
| | 97 | 43 | 70 | 48 | 65 | 32 | 76 | 37 | 71 |

*Note.* Raw subscale scores have been rounded off to the nearest integer.

Spivack and Spotts (1965) likewise found higher scores with greater age on a subscale called Social Need, Dependency on the Devereux Child Behavior scale. In a large group of children having normal IQs, Aman and Werry (1984) found higher parent ratings on the Anxiety/Withdrawal subscale of the Revised Behavior Problem Checklist (RBPC; Quay, 1983). Aman and Werry speculated

that certain fears (such as social fears) tend to emerge with greater maturity and that this may account for the age effect. However, Einfeld and Tonge (1994) found no effect due to age on the Anxiety subscale of the Developmental Behaviour Checklist.

The other two subscales that changed as a function of age were Hyperactivity and Self-Isolated/Ritualistic behavior. Spivack and Spotts (1965) using the Devereux scale and Marshburn and Aman (1992) using the Aberrant Behavior Checklist failed to find any influence of age on hyperactivity subscales, whereas Eyman and Call (1977) found an inverse effect using the AAMD Adaptive Behavior Scale. With youngsters having average ability, Aman and Werry (1984) found increased attention problem scores with greater age, as in the present study. Clearly, there is considerable variation from study to study. With respect to the Self-Isolated/Ritualistic behavior age effect, Spivack and Spotts (1965) observed no age effects on a subscale called Pathological Use of Senses (somewhat analogous to certain autistic behaviors). In contrast, Marshburn and Aman found higher scores on the Stereotypic Behavior subscale, which may be seen as analogous to the age effects on Self-Isolated/Ritualistic behavior noted here, but Marshburn and Aman did not observe a similar finding on the Lethargy, Social Withdrawal subscale. Freund and Reiss (1991) found higher scores with increasing age on the Lethargy, Social Withdrawal subscale of the Aberrant Behavior Checklist but not on the Stereotypic Behavior subscale. As the Lethargy, Social Withdrawal subscale describes a number of socially aloof behaviors, these findings partially support the age effect on Self-Isolated/Ritualistic behavior. Einfeld and Tonge (1994) observed no age effect on the Self-Absorbed and Communication Problem subscales (both containing symptoms of autism) on the Developmental Behaviour Checklist.

All of the comparisons for the main effect of gender were nonsignificant. Interestingly, most previous studies of children with developmental disabilities have found few or no effects of gender on problem behavior (Einfeld & Tonge, 1994; Freund & Reiss, 1991; Marshburn & Aman, 1992; Spivack & Spotts, 1965). However, one study of children living in different settings — institutions, community facilities, and their own homes — (Eyman & Call, 1977) did find a substantial number of gender-related effects on Part Two of the AAMD Adaptive Behavior Scale (Nihira, Foster, Shellhaas, & Leland, 1974). This general null effect for gender is rather surprising, but it is possible that raters make implicit adjustments when rating boys and girls or, alternatively, that there are systematic biases in the placement of males and females in these various settings.

Age by gender interactions were observed here with the parent ratings on the Conduct Problem and the Insecure/Anxious subscales. We are skeptical that the interaction for Conduct Problem is robust, as the alpha level barely reached .05 and there is an anomalous drop in scores for 7- to 9-year-old girls and a rise for boys of the same age. Further data are needed to assess the stability of these

findings. The interaction for the Insecure/Anxious subscale appears more robust, as the scores are more regular across age levels (especially for boys), and the alpha probability level was much smaller (.003). We deliberately provided norms both for the interaction terms (i.e., by age and gender) and more simply as a function of age so that users can decide for themselves which to use. For Conduct Problem, we recommend using the simpler norms (age only). Fortunately, no age by gender interactions were found for the teacher ratings, so the simpler norms can be used throughout for teacher ratings.

To maintain consistency in our normative tables showing percentiles and *T* scores, more problematic subscale scores always appear towards the bottom of each panel. In the case of the problem behavior subscales, higher scores are always indicative of more serious problems, whereas for social competence items, lower subscale scores reflect difficulty. Therefore, the percentile and *T* scores are read differently for the two types of item. For the social competence items, a score at the 90th percentile means that 90% of the sample scored higher than this particular client. Conversely, a score on one of the problem behavior subscales at, for example, the 85th percentile indicates that this client had more problematic behavior than 85% of the sample. The system is consistent in that higher percentiles and *T* scores always signify more problems adapting socially, regardless of whether one is dealing with a social-competence or a problem behavior. This approach is similar to that of one of the most popular rating scales for assessing children of average ability (the Child Behavior Checklist; Achenbach, 1991).

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