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# Development and Preliminary Psychometric Properties of the Multidimensional Neglectful Behavior Scale—Child Report

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*This article describes the development and psychometric properties of the Multidimensional Neglectful Behavior Scale—Child Report (MNBS-CR). The measure is broadly conceptualized to tap child neglect across four core domains: cognitive, emotional, physical and supervisory neglect, and it assesses exposure to violence, alcohol-related neglect, abandonment, and children's appraisals of parenting. Features include pictorial items, audio computer-assisted testing, and programming by age and gender of the child and caregiver. A clinical sample of 144 children, age 6 to 15 years, and a comparison sample of 87 children were tested. Results showed that the MNBS-CR has high reliability, with higher reliability found for older children ( $\alpha = .94$ ) than for younger children ( $\alpha = .66$ ). Among older children, the MNBS-CR Supervisory scale was significantly associated with the Child Behavior Check List (CBCL), and total MNBS-CR scores were significantly associated with clinician reports of behavioral disorders. Younger and older neglected children scored significantly higher on the MNBS-CR than community children.*

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**Keywords:** *measurement; child neglect; child self-report of neglect; psychometric properties*

**N**eglect is the most frequently reported and perhaps the most injurious of all forms of child maltreatment (Gaudin & Dubowitz, 1997). Yet most of the attention in the field of child maltreatment has been directed toward the more visibly injurious forms—physical and sexual abuse of children. One reason for this relative inattentiveness is the difficulty in defining the boundaries of neglect and in measuring a construct that essentially implies the absence of appropriate behaviors. Prior research has been constrained by a lack of standardized, diagnostic instruments, and only a limited number of publications provide psychometric data on instruments measuring neglect (National Research Council, 1993; Zuravin, 1999). Precise definition and improved measurement of neglect are important so that an integrated research

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base can be developed and sound clinical-diagnostic measurements can be made. However, even though children's reports of their own maltreatment are often factored into decision making by child protective service workers, an examination of child victimization questionnaires suggests that there are few standardized questionnaires (Hamby & Finkelhor, 2001), and that young children are rarely the source of data in measures developed to assess neglect (Zuravin, 1999). This article describes the development of the Multidimensional Neglectful Behavior Scale—Child Report (MNBS-CR) and provides preliminary psychometric data on the reliability and validity of this instrument.

#### CURRENT STATUS OF NEGLECT MEASUREMENT

Some of the most widely used instruments measuring neglect such as the Childhood Level of Living Scale (CLL; Polansky, Chalmers, Bittenweiser, & Williams, 1978), and the Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 1984) are observational measures that may be completed by child welfare workers or other professionals who know the family well, or by professionals from a variety of backgrounds (DeVoe & Kaufman Kantor, 2002). Trocme's Child Neglect Index (CNI; 1996) was developed to reflect the legal definition of neglect in Ontario, Canada, and was designed as a substantiation tool to be used mainly by child welfare workers or researchers using the Ontario legal standards. Other instruments designed for adult informants require respondents to report on their own child-rearing attitudes, for example, the Adult-Adolescent Parenting Inventory (AAPI; Bavolet, 1984), or behaviors. For some instruments, such as the Childhood Trauma Questionnaire (Bernstein et al., 1994) and the Multidimensional Neglectful Behavior Scale, Form A: Adolescent and Adult Recall Version (Harrington, Zuravin, DePanfilis, Ting, & Dubowitz, 2002; Straus, Kinard, & Williams, 1995), adults retrospectively evaluate their childhood experiences of abuse and neglect. In fact, few instruments are available that rely on child self-report measures of neglect, although some exist (e.g., McGee, Wolfe, Yuen, Wilson, & Carnochan, 1995; the Parental Acceptance-Rejection Questionnaire [PARQ], Rohner, 1986). McGee and colleagues (1995) asked adolescents about a range of maltreatment experiences but confined questions about neglect to behavioral examples reflecting improper care or lack of attention, whereas Rohner's (1986) focus was on emotional neglect and abuse.

Instruments vary widely in regard to the types of neglect addressed. Some measures assess only one component of neglect, such as physical or emotional neglect (e.g., the Childhood Trauma Interview, Fink, Bernstein, Handelsman, Foote, & Lovejoy, 1995), whereas others evaluate a wide array of neglectful behaviors (e.g., Child Well-Being Scales, Magura & Moses, 1986). Instruments also vary as to their objectives. Although the majority of these instruments have been developed specifically to measure child neglect, others have instead focused on risk assessment or program evaluation (e.g., Magura & Moses, 1986).

The fact that most current measures were not developed with the child in mind as the primary reporter of neglectful parental acts is no doubt related to the vagueness of neglect as a theoretical and legal construct (English, 1998; Kaufman Kantor & Little, 2003) and to the challenges of reliably assessing children's maltreatment experiences (e.g., Ceci, Leichtman, Putnick, & Nightingale, 1995).

This article describes the steps taken to develop the MNBS-CR and reports preliminary psychometric data on the MNBS-CR. The MNBS-CR differs from many previous instruments not only in regard to its focus on the child's perspective but also in regard to its conceptualization, and intended audience. Similar to many instruments, the MNBS-CR is broadly conceptualized and attempts to capture the heterogeneity of child neglect. However, it differs from many other instruments because it incorporates acts that reflect a wide spectrum of parenting behaviors. These behaviors range from those neglectful acts inconsistent with proper parenthood (Giovannoni, 1993) but not falling within the realm of child welfare action (e.g., does not read books with the child) to acts such as abandonment that are certain to be substantiated by child welfare agencies in all communities. Thus, the intended audience for this measure encompasses clinicians, child protection staff, researchers, and a general audience of policy makers, providers, and community members.

#### CONCEPTUAL FRAMEWORK FOR NEGLECT MEASURES

Physical, psychological, or sexual abuse comprises acts that have a high probability of damaging the child (physically or psychologically), such as punching the child or sexual intercourse with the child. Such acts are maltreatment regardless of the motive, and regardless of whether the child does or does not suffer a physical or psychological injury. By contrast to such acts of commission, neglect is an act of omission (Zuravin, 1999). Neglect is present when a parent fails to carry out behavior that is necessary to meet the ba-

sic developmental needs of a child, such as not providing adequate food or supervision. Consequently, not providing for these needs is neglect regardless of whether the child is actually damaged by the neglect, and regardless of the reason for failing to provide for the child's needs (Straus & Kaufman Kantor, in press). Most agree that neglect means a failure to provide for the basic needs of children in regard to food, clothing, shelter, education, affection, attention, and protection. However, there are a number of variations that lead to differences in the ways in which each subtype of neglect is defined. Straus & Kaufman Kantor (in press) suggested a definition of neglect that may be operationalized and provided a conceptual analysis of that definition that provided the framework for the MNBS-CR development:

Neglect is behavior by a caregiver that constitutes a failure to act in ways that are presumed by the culture of a society to be necessary to meet the developmental needs of a child and which are the responsibility of a caregiver to provide. (n.p.)

The three conceptual principles underlying their operational definition and analysis are the following: (a) items to be measured must reflect behaviors, (b) the behaviors should be acts of omission, and (c) behaviors should not be confounded with causes or motives or effects (of neglect). It should also be noted that although there need not be actual harm associated with neglect, concerns regarding the set of caregiving circumstances are typically based on at least the potential for harm.

These principles provide a basis for distinguishing abuse from neglect. For example, acts of psychological aggression against a child (e.g. "you dummy") are sometimes considered neglect because they disregard the child's need for a supportive and loving relationship and for nurturance. Previous research has demonstrated that verbal attacks can be more damaging developmentally than physical attacks (Vissing, Straus, Gelles, & Harrop, 1991); however, we regard verbal attacks as acts of psychological abuse, not neglect. To illustrate the importance of keeping them separate, let us consider the proposition that neglect is the most developmentally harmful form of maltreatment. From this and other considerations, one might hypothesize that attention from the parents, even if it is abusive and damaging, is less damaging than neglect. However, to test that hypothesis requires a measure of neglect that does not include acts of psychological aggression. In short, from our theoretical perspective, a measure of neglect must be focused exclusively on failure to attend to the child (e.g., failure to hug and kiss the child) and be used in

conjunction with separate measures of etiological or consequence variables that are relevant for a particular research or clinical assessment (Straus & Kaufman Kantor, in press). The four core areas that are encompassed by the multidimensional measure of neglect are the domains of physical needs, emotional needs, supervision needs, and cognitive needs.

A focus on acts, and avoiding confounding of neglectful behavior with etiology or effects, such as harm, to the child was central to the design of the MNBS-CR. In addition, information on whether a child evaluates or appraises (i.e., subjectively experiences) the behavior of a caregiver as neglectful may also be important (Straus & Kaufman Kantor, in press). The child's judgment of the caregiver behavior as neglectful is best conceptualized as a consequence of neglect. Similar to other consequences, it does not constitute neglect and must be measured separately from the caregiver behavior that constitutes neglect. For example, in the MNBS-CR a child's report of parental acts of providing for the child's nutritional needs is measured by asking if there is "enough food to eat in the house." A child can report that there is not enough food and not necessarily evaluate it as neglect. The child's appraisal of parental provision of nutritional needs is measured by asking if the child "feels hungry a lot." Only if the child's appraisal of the caregiver behavior as neglect is measured separately is it possible to investigate the circumstances under which a child does and does not appraise the caregiver as neglectful.

#### METHODOLOGICAL ISSUES IN DEVELOPING AND TESTING THE MNBS-CR

A number of methodological issues needed to be taken into account in developing the MNBS-CR. In addition to the principles noted above, we were also concerned about considering the age of the child, cognitive ability, and the need to minimize response sets or bias introduced by recall. All of these issues were factored into the development of the scale and testing protocols used during the pilot test and implementation of the main data-collection phase of the study.

##### *Age of Child*

An instrument intended to measure neglect across the entire span of childhood requires different versions with age-appropriate items. For example, the caregiver behavior needed to meet the supervisory needs of a 6-year-old child, such as knowing where the child is playing, is different than the behavior needed for a school-age child, such as knowing

who are the child's friends. The MNBS-CR computer-administered interviewing system used branching of questions based on the age of the child to present age-appropriate items.

Two versions of the MNBS-CR were developed for children: a young child version for ages 6 to 9 and an older child version for ages 10 to 15. This division corresponds to the shift from concrete to formal operations (e.g., Kingma, 1984) and the move from elementary to middle school for many youngsters (National Middle School Association [NMSA], 1996). It is also the case that children age 10 years and older are more than 3 times as likely than children age 9 or younger to spend time unsupervised by an adult (1999 National Survey of Families; Vandivere, Tout, Capizzano, & Zaslow, 2003). In addition, children from age 10 years to age 14 or 15 years are generally categorized as early adolescents by developmental psychologists (e.g., Compian, Gowen, & Hayward, 2004; Silverberg & Steinberg, 1990), and this is consistent with the practices of the *Journal of Early Adolescence* that has been dedicated to work concerning 10- to 14-year-olds.

#### **Cognitive Ability**

The development of child report measures must consider children's terminology for objects and events, children's linguistic development at different ages (vocabulary and degree of grammatical complexity understood), and the social and cultural aspects of language to which children are accustomed. Questions about the credibility and reliability of children's reporting have been regarded as the foremost of challenges in child assessment. For example, it has been suggested that the child's desire to conform or please may lead them to agree with information that is untrue. However, even very young children (age 3 to 6 years) are less suggestible for central events and actions that they understand (Bruck & Ceci, 1999; Powell, Roberts, Ceci, & Hembrooke, 1999). In this regard, the research on children's episodic or event memory is relevant. Preschool-aged children's memories of events have been found to be vulnerable to suggestions offered by adults; older children are less susceptible (Ceci, Leichtman, Putnick, & Nightingale, 1993). In the absence of suggestion, however, even very young children will relay accurate information about an experienced event (White, Leichtman, & Ceci, 1997). The major difference between preschool and older children is in the amount of detail they provide. The bulk of the evidence indicates that school-aged children are able to provide relatively detailed and veridical accounts of events they have experienced (Ceci, Fitneva, &

Gilstrap, 2003; Gathercole, 1998). Questions developed for children must also be pretested to ensure that they reflect actions and situations that are familiar.

We also anticipated considerable variation across children in relation to selective attention, and distractibility, that can lead to errors and guessing (Wightman, Allen, Dolan, & Kistler, 1989). These are some of the factors that were taken into account in piloting the MNBS-CR, and in determining the reliability of responses, as well as excluding some respondents. Only a small number of children, 10%, were excluded from the study because of severe attention deficit disorders.

#### **Chronicity**

Chronicity is particularly important in measuring neglect, and because memory of how often an event occurred probably decreases with the length of the referent period, longer referent periods may come at the cost of decreased accuracy. Although research is needed to determine the optimal time window for obtaining recall data on different types and severity of neglect by children and by adults, the eligibility criteria for the current study established specific limits regarding the time period of care assessed. Younger children were excluded from the study if they had lived in foster care for more than 6 months. Older children were excluded from the study if they had lived in foster care for more than 1 year.

#### **Minimization of Response Bias**

Great care was taken to minimize response bias. For example, the order of scale items, and the order of nurturing parent–neglectful parent were randomized (right or left sides of the screen). We also carefully considered the potential stimulus properties of pictures to minimize the possibility that children would respond to elements other than the behaviors being depicted. We looked carefully at the facial expressions of the children and the parents, to avoid confounding the affect of the child with the affect of the parent. For example, neglected children would not necessarily be frowning, unless the neglectful act, per se, would in all likelihood lead to physical or emotional distress. For most pictures, we tried to keep the child's facial expression and the caregiver's facial expression neutral, so that the child would focus on the parent's actions rather than the facial expressions. Recent research findings that abused children are more perceptually attuned to facial expressions of anger point to the importance of this approach (Pollak & Kistler, 2002). Care was also taken to ensure that the facial characteristics and expressions were

the same for pictures of male and female caregivers and male and female children.

## METHOD

This research had two phases, the first, a pilot phase during which instrument development was finalized for initial testing, cognitive testing of the instrument was conducted and measures, and computer graphics, programming, and protocols were tested and refined. In the second phase of the study, full-scale data collection was conducted to assess the reliability and validity of the measure of child neglect among clinical and community samples of children.

### *The Pilot Study: Phase 1*

*Sample.* Cognitive testing was conducted in 2001 using the Audio-Computer Assisted Self Report Interview (ACASI) and pictorial versions of the scale on a convenience sample of 47 children drawn from the community (most from after-school programs) and 19 children from the Maine Foster Care System and the Spurwink Child Abuse Forensic Program. The sample was almost equally divided by gender and age. However, in the clinical sample, three fourths of the children tested were in the younger age group, by design.

*Eligibility.* Limits were placed on the referent time period as discussed in the Chronicity section. Because of concerns about accuracy of recall, particularly when there may have been a series of caregivers, younger child were excluded from the study if they had lived in foster care for more than 6 months. Older children were excluded from the study if they had lived in foster care for more than 1 year. Children were excluded from the study if they had severe visual, hearing, or language impairments; had been formally diagnosed with mental retardation; or had been deemed noninterviewable by examining clinicians. Eligible children in the clinical sample needed to have a history of recent maltreatment allegations—neglect and abuse. Eligible children in the comparison, community sample needed to meet the same criteria for vision, hearing, and language, and we required active parental (caregiver) consent, and child assent for their participation. The parental consent form for the current study used specific language to make clear our role as mandated reporters. This was intentional, not only for human subject requirements but also for the purpose of minimizing the likelihood of maltreatment among the comparison sample. Children in the community sample were interviewed anonymously so that a review of child pro-

TECTIVE SERVICES (CPS) RECORDS WAS NOT POSSIBLE. APPROVAL TO CONDUCT THE STUDY WAS OBTAINED FROM SPURWINK, THE UNIVERSITY OF NEW HAMPSHIRE INSTITUTIONAL REVIEW BOARDS, AFTER-SCHOOL PROGRAMS, AND CPS AGENCIES IN MAINE AND NEW HAMPSHIRE.

## *Measures*

### Development of the MNBS-CR

The Multidimensional Neglectful Behavior Scale—Adult Recall (MNBS-A; Straus et al., 1995) provided a conceptual foundation for the development of the MNBS-CR and a preliminary test pool of items. The MNBS-A consists of four 5-item subscales to retrospectively measure neglect of children's developmental needs in four domains: Physical Needs, Emotional Needs, Supervision Needs, and Cognitive Needs. We also reviewed a number of instruments measuring child maltreatment, including child report measures (see our review of the literature above). Neglect data drawn from 200 child welfare-referred families in another child maltreatment study conducted by the first author (Kaufman Kantor & Bluhm, 2002) were reviewed as a source of potential items (e.g., types of neglect and specific neglect situations). Next, we held discussions with four child maltreatment forensic experts on areas of neglect, the proposed items, and strategies for interviewing children. Together these approaches resulted in an initial item pool of 55 items (with variations in four items for younger and older children) including 36 items measuring the four core domains; 7 items measuring exposure to alcohol-related neglect, conflict, and violence in the family and abandonment; 6 items measuring the child's appraisal of neglectful situations in the family; and 6 items measuring depression in the child. We also developed visual schemas to represent the test items, modeled, for example, after Harter and Pike's (1984) self-concept measure, using computer graphics and programming for the ACASI in conjunction with the Westat organization.

### The MNBS-CR Core Domains

*Emotional neglect.* Previous conceptualizations of emotional neglect have been largely consistent on viewing psychological abuse or aggression (harmful insults) as separate from emotional neglect (the failure to provide nurturance or to express affection to the child). Some have opted to categorize emotional maltreatment more broadly (e.g., Rose & Meezan, 1993). Others have considered parental substance abuse, antisocial behavior, and domestic violence to be equivalent to emotional neglect (e.g., Slack, Holl, Altenbernd, McDaniel, & Stevens, 2003) or focused

on the emotional unavailability of the parent (e.g., Munkel, 1996). The Emotional Neglect subscale in the MNBS-CR has seven items that evaluate the affection, support, and companionship within the parent-child relationship. For example, one item asks the child if the caregiver makes her or him feel better when he or she is sad or scared.

*Cognitive neglect.* Measurement research has lacked agreement on the operationalization of cognitive neglect relative to the other domains. The CNI (Trocme, 1996) includes a subscale on educational and developmental care. Statutory definitions and child welfare concerns center on parental failure to insure that children receive an education. The Cognitive subscale developed for the MNBS-CR (five items) assesses the cognitive stimulation the parent provides the child such as the parent's involvement with the child's school and schoolwork, and the provision of learning opportunities.

*Supervisory neglect.* Lack of supervision is the most common situation that brings caregivers and children to the attention of child welfare (Zuravin, 2001). Many of the items in the MNBS-CR reflect those same concerns, and the nine items in the MNBS-CR Supervisory subscale encompass areas such as knowledge of the child's whereabouts, and the provision of adult supervision. We also defined this category of neglect to include broad but essential aspects of parental socialization responsibilities such as attending to children's misbehavior and limit setting. Most would agree that it is the duty of parents to socialize children into prosocial, noncriminal activities, by communicating that certain actions are against the law and unacceptable to the parent. In fact, some of the correlation between neglect and delinquency found in other research (e.g., Maxfield, Weller, & Widom, 2000) may be due to such parental failures. Unless these items are specifically measured and studied, the etiologic relationships between neglect and particular consequences may not be empirically clear. For example, one item states, "This child's parent cares if she or he does things like steal." Another states, "This child's parent does not make sure that she or he goes to school."

*Physical neglect.* There is a fair amount of consensus regarding parental responsibility to provide for the physical needs of the child for adequate food, shelter, clothing, and medical care, and this category of neglect is also typically addressed in state statutes (Tower, 1996; Zuravin, 2001). The Physical Neglect subscale is the largest subscale included in the MNBS-CR (12 items) because it must capture the multidimensionality of this construct. This domain assesses

nutrition (3 items), shelter (3 items), hygiene/clothing (3 items), and medical neglect (3 items).

The MNBS-CR includes additional items measuring abandonment, exposure to parental conflict and violence, failure to protect the child from violence by other household members, substance abuse (allowing a child to use alcohol; parental intoxication linked to neglect), and child depression. The MNBS-CR also includes a Child Appraisal subscale.

*Children's appraisals of neglect.* We developed a subscale of children's general appraisals or feelings concerning neglectful parental acts (six items), in contrast to questions about the occurrence of specific parental behaviors or acts that assess the four major domains. For example, the appraisal item related to parental supervisory neglect is "This child feels like no one takes care of him." This subscale has three items on emotional neglect, one item on supervisory neglect, one item on physical neglect, and one item assessing cognitive.

*Exposure to conflict and violence.* The exposure subscale contains three indicators: one that depicts a child's exposure to parental arguments, one that depicts a child witnessing parental physical fighting, and a third that depicts a parent failing to protect the child from the threatened aggression of another adult figure (toward the child). Conceptualizing and measuring children's exposure to parental conflict and violence as a separate subscale responds to the potential practical utility of this information and permits the additional research that is needed to adequately answer the question of when or whether behaviors such as domestic violence should be regarded as an aspect of neglect (Kaufman Kantor & Little, 2003). Defining exposure to domestic violence, per se, as emotional abuse or as domestic violence-related neglect may be seen as an example of confounding an etiological factor with effect.

*Alcohol use.* This subscale includes two items: allowing a child to use alcohol, and an indicator displaying parental intoxication, "This child's parent gets drunk and cannot take care of him or her." The Substance Abuse subscale was included because there is a rather extensive literature establishing the linkages between parental substance abuse and neglectful parenting (e.g., Famularo, Fenton, & Kinscherff, 1992; Harrington, Dubowitz, Black, & Binder, 1995). However, unless clear linkages to maltreatment can be established, parental substance abuse is one of those recognizably harmful factors, along with corporal punishment, that may be overlooked in defining the risks to children or not charging parents with maltreatment. We included this subscale because it can permit a further

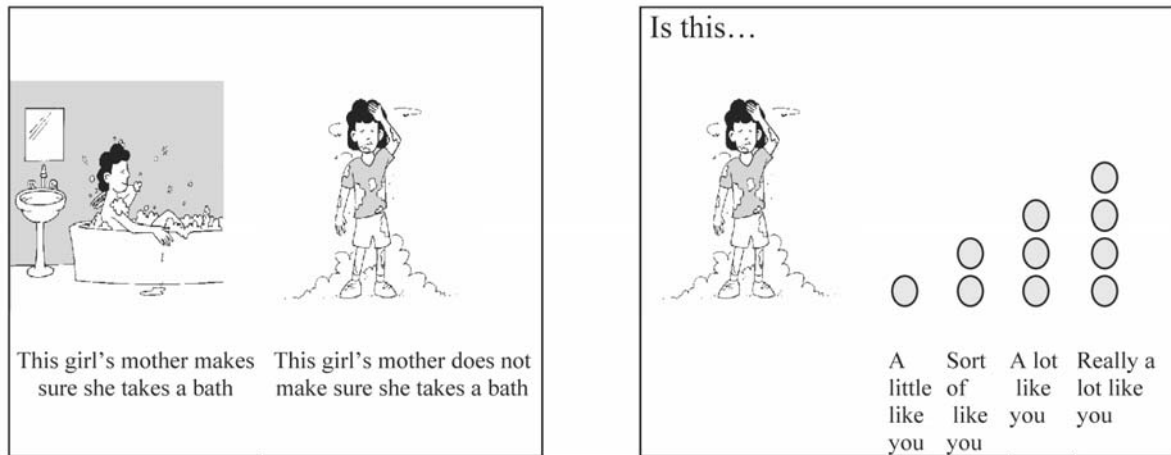


FIGURE 1: Sample Item Assessing Physical Neglect from the Multidimensional Neglectful Behavior Scale-Child Report (MNBS-CR)

examination of the relation of parental substance abuse to other domains of neglect.

*Child Depression.* The mood-affect subscale (six items) of the Depression Profile for Children (Harter & Nowakowski, 1987) is included in the ACASI program to establish construct validity. Pictures for each item were developed as part of our computerized assessment. We selected this subscale based on communications with our colleague, Milling Kinard, who, at our request, analyzed data from her studies of maltreated children (e.g., Kinard, 1998) to determine which of the depression subscales most strongly correlated with child neglect compared to other maltreatment types. Across all maltreatment types, Kinard (1998, personal communication) found that the alpha reliability coefficient for child ratings of depression using the mood-affect subscale was .77.

*Other measures.* For the clinical sample, limited data on the maltreatment history of the child and child and family characteristics were collected from clinical records of the forensic program. Data on IQ were considered important relative to appreciating the comprehensibility of the program to a range of children but were not consistently available. For the community sample, data on learning deficits were obtained from teachers in the after-school programs attended by the children.

### Procedures

*Computer implementation.* A basic essential in assessing the status and experience of children is to create an atmosphere in which the child feels able to trust the interviewer and feels safe (Garbarino & Stott, 1989). This is as important in developing and admin-

istering the MNBS-CR to children as the need to consider the child's cognitive, linguistic, perceptual, and psychological competence (Bornstein, 1992; Bornstein & Lamb, 1992; Kuhn, 1992). Our solution to minimizing many of the implementation and methodological concerns noted above was to use computer technology to administer the MNBS-CR. We decided to use an ACASI computer program because it is particularly suitable for young children, and because many children view the computer as fun and as a type of entertainment.

Prereaders can hear the spoken questions and respond to the questions by using a touch screen. The pictorial scale versions presented to the child are programmed to reflect the age and gender of the child and the gender of the primary caregiver. Children are asked by the interviewer, "Who is the adult who takes care of you the most?" Additional discussion takes place with children in foster care, to establish the maltreating family as the referent family (rather than the foster family). Thus the pictorial items displayed to the child match with the age and sex of the child, and sex of the caregiver.

The program begins with a musical introduction and pictures of families and then continues with a tutorial that instructs the child on program usage. The child is presented with a split screen depicting two parenting scenarios (e.g., nurturing parent and neglectful parent) (see Figure 1). The child is then asked to select the scenario that is most like himself or herself. The selected picture is highlighted and then a second screen appears. This screen displays the selected picture and then asks the child, "Is this: A little like you?; Sort of like you?; A lot like you?; Really a lot like you?" Columns of balls of varying heights are

displayed in conjunction with the response categories (e.g., Richters & Martinez, 1993) to capture the degree or intensity of the child's identification with the selected behavior. The program also allows children to change their responses if they wish, and it prompts the child if she or he skips a question. Another innovation is the inclusion of an interactive computer game, midway into the program to minimize children's possible fatigue or boredom in doing the measurement program. On average, the program took between 30 and 40 minutes for completion.

It is also important to establish a context for questions—and to convey that questions are not a demand to comply but a request for information. These were areas that were considered in gaining assent from children and in implementation of the MNBS-CR. Some children had already been through a forensic interview with staff psychologists or caseworkers. Although some have questioned if those children might be contaminated by prior interview (e.g., forensic interviews are conducted for purpose of investigation and fact finding as opposed to the research interview), research indicates that contamination should not be a concern (Goodman, Aman, & Hirschman, 1987). If children were distressed or fatigued by other assessments, the testing was rescheduled.

### **Results of the Pilot Study**

*Interpretation and comprehension.* Of the community sample, 19% were coded as having a learning deficit by teachers, and 48% of the clinical sample were similarly coded. Less than 10% were unable to complete the testing because of severe focus disorders. Many children with reported attention deficit-hyperactivity disorder (ADHD) were able to complete the program without difficulties. This was also the case for children where the IQ was known to be below average. For example, a 12-year-old child with a 70 IQ (tester blind to IQ) completed the program without difficulties. An example of a child unable to complete the program was a 6-year-old where records indicated, "mild to moderate range of IQ deficits, and problems of focus and articulation." We found the child's speech to be largely unintelligible. Many children in the clinical sample had histories of very severe neglect and maltreatment but were able to comprehend and complete the program. Children appeared to have more patience and enjoyment responding to computerized items than paper copies of items.

Cognitive testing allowed us to determine how children interpreted the pictures, the response categories, and the questions, including comprehension of the vocabulary. For example, in one exchange between interviewer and child, the interviewer asked,

"Do you know what beer is?" The child replied, "Yes, my dad used to get it." Cognitive testing also revealed the complexity of assessing neglect. Regarding one of the illustrations of parental violence, a child stated, "My parents do that, they hit each other." In another interview, in response to an item about dental neglect a 10-year-old child stated, "I haven't been to the dentist since I was 6 because my mother couldn't afford it, but my dad is trying to make me an appointment."

Cognitive testing also revealed the challenges of assessing neglect. When questioned about her responses indicating possible emotional neglect by the mother, one child stated, "My mom doesn't answer my questions, especially when she's on the phone." On the one hand, this may reflect an entirely reasonable behavior on the part of the mother. On the other hand, it may be part of a pattern of neglectful acts engaged in by the parent. Based on testing, three items were deleted because of nonreporting by children, problems of comprehension, and/or concerns about the appropriateness of the items, or potential cultural bias. Items deleted were the following:

- "This child's (boy's/girl's) parent does not help him or her with homework."
- "This child does not have clothes to wear to school and to play."
- "This child does not have his or her own bed to sleep in."

Other changes were made to simplify wording and vocabulary. For example, in an item asking older children about whether the parent cared if the child did things such as shoplift, the word *shoplift* was changed to *steal*. The majority of changes made as a result of the pilot were made to the graphic representation of items to ensure that the picture accurately reflected the item, and to minimize potential confounds in the picture so that the child would focus on neglectful and non-neglectful parental behaviors.

*Construct validity.* The results of the preliminary analysis of data from the 66 children in the pilot found that children's reports of exposure to violence, parental alcoholism, and depression (as measured by MNBS-CR items on the ACASI program) were all significantly correlated ( $p < .05$ ) with their reports of parental acts of neglectful behavior. Preliminarily, the results are supportive of the construct validity of the MNBS-CR.

Refinements of the MNBS-CR resulted in a revised scale consisting of 33 items assessing the four core domains of neglect; 7 items total assessing neglect linked to parental substance abuse, exposure to conflict, and violence in the family, and abandonment; 6 items measuring the child's self-appraisal of parental

neglect; and 6 items measuring depression for a total of two 52-item scales (one for younger children, and one for older children).

### *The Main Study: Phase 2*

*Clinical sample.* The implementation phase of data collection for the Phase 2 main study began in January 2002 after completion of cognitive testing and program revisions based on the results of that testing. The full clinical sample of maltreated children (abuse and neglect) included 255 children with approximately one half in each of the age groups and gender groups. In this article, we focus on children for whom neglect allegations were present.

As shown in Table 1, there were 144 children in the clinical sample for whom neglect was a concern, with somewhat more older children and boys relative to the community sample. Most of the children (64%) were from the Spurwink Child Abuse Program (CAP) in Portland, Maine. The clinical sample also included children ( $n = 52$ , 36% of sample) with a history of neglect who were entering foster care in New Hampshire and Maine. Almost one half of the children in this subsample had an identified behavioral problem.

The majority of children were White, consistent with ethnic distributions in the states of Maine and New Hampshire. At the time of testing, 46% of the children lived with a biological parent. Analysis of record data on parents revealed that a number of family risk factors were present. Developmental disabilities were present in 16% of parents, and mental illness (mainly depressive disorders) had been diagnosed in almost one half of the parents. Another 41% of parents had a history of substance abuse problems, and 62% were experiencing current domestic violence.

*Community sample.* We also tested a comparison group of 87 children in the general community, drawn from aftercare programs in New Hampshire and Maine, after gaining parental consent and child assent. The community sample included children who completed the MNBS-CR at four New Hampshire sites (see Table 1). These children came from seven after-school programs in the more urban communities of New Hampshire. More than one half of the programs are Boys and Girls Clubs. The majority of this sample were girls and more likely to be younger than children in the neglect clinical sample. With respect to ethnicity, almost three fourths were White. Minorities were more prevalent in this sample because the after-school programs were drawn from more urban areas of New Hampshire. Of the children interviewed in the community sample, 10% were known to have learning disabilities.

**TABLE 1: Demographic Information for Neglect Clinical Sample and Community Sample ( $N = 231$ )**

	% of Neglect Clinical Sample ( $n = 144$ )	% of Neglect Community Sample ( $n = 87$ )
Gender		
Male	56.9 (82)	42.5 (37)
Female	43.1 (62)	57.5 (50)
Age		
6 to 9 years	45.8 (66)	72.4 (63)
10 to 15 years	54.2 (78)	27.6 (24)
Ethnicity		
White	92.3 (133)	73.6 (64)
Black	0.0 (0)	11.5 (10)
Latino/Hispanic	1.4 (2)	13.8 (12)
Native American	2.1 (3)	0.0 (0)
Asian	0.0 (0)	0.0 (0)
Biracial	3.5 (5)	1.1 (1)
Not identified	0.7 (1)	0.0 (0)

### Eligibility

Criteria for eligibility established for the pilot study were maintained for the main study.

### Measures

*MNBS-CR.* See above for a description of the MNBS-CR (also used in Phase 2 of the study). As noted, this is a slightly revised series of 52 pictures and items from that of the pilot study, and there are two separate versions for younger and older children. The MNBS-CR program includes a 6-item scale measuring child depression as described above.

*Peabody Picture Vocabulary Test.* Some measure of the child's cognitive ability is important because previous research has suggested that neglect may be associated with cognitive deficits and poor academic performance (Kendall-Tackett & Eckenrode, 1997). In addition to the computerized version of the MNBS-CR, the Peabody Picture Vocabulary Test III (PPVT III) was given to children so that the child's receptive vocabulary could be considered in interpreting the results. This widely used measure is quickly and easily administered and demonstrates excellent reliability (internal consistency alpha, 0.92 to 0.98; split half 0.86 to 0.97). Recent revisions of this instrument include a better balance of ethnicity and gender in the illustrations. The PPVT was not used as a criterion in excluding children from the study or from analysis. We examined PPVT scores as correlates of the child's reporting of neglect.

*Child Behavior Check List.* Data from the parent report version of the Child Behavior Check List (CBCL;

Achenbach, 1991) were available for many of the children tested at the Spurwink CAP but were not available for children recruited from CPS. The CBCL is one of the most widely used measures of child behavior in clinical and research programs, in areas such as child maltreatment. It includes a 113-item version for youth age 4 to 16 years. For 4- to 16-year-olds, there are a total problems scale and 9 subscales. For example, the social competence dimension of the CBCL consists of the following subscales: activities, social involvement, and school performance. The behavior problem dimension includes a number of factors including depressed-withdrawn, anxious-obsessive, aggressive, delinquent, and hyperactive. The internal consistency for symptomatology is .96 for older children and lower for younger children. CBCL data were used to help establish the construct validity of the MNBS-CR in the current study.

*Record data.* Data from forensic clinicians and CPS caseworkers were gathered using standard forms that we created. Clinician information on children and adults was typically obtained through client report, review of historical records, and collaboration with other sources such as day care providers, police officers, and medical personnel. Data were obtained on areas including maltreatment history, CPS involvement, presence of parental substance abuse problems, mental illness, domestic violence, and severe behavioral problems. These data were collected, in part, to help in establishing the concurrent validity of the MNBS-CR.

### Procedures

Extensive protocols and procedures have been developed for training child interviewers and for recruiting, testing, gaining consent from parent-guardians and assent from children, and for ensuring comprehension (a complete manual is available from the first author). Interviews were conducted in quiet and private settings. Parents were not allowed to be in the room while children participated in the computer interview. A parent could accompany the child to the interview room and be present during the consent signing. The interviewer evaluated children's comprehension of the questions and response categories. Interviewers sat with 6-year-olds throughout the program to evaluate the child's comprehension throughout the interview. For older children, the interviewer needed to feel comfortable that the child understood the questions and response categories before allowing the child to complete the program independently. The interviewer assisted all children during the tutorial and then observed the child's responses for a

couple of additional questions. The number of items observed depended on how comfortable the interviewer felt about the child's comprehension. When the interviewer felt that the child comprehended the questions and responses, the child could have privacy to answer the questions. Children could use earphones for the audio portion of the computer program and were reminded to raise their hands if there were any problems or questions. The interviewer sat in another part of the room that was nonintrusive to the child (exception with 6-year-olds, or any children where comprehension was a concern). Other technical aspects of the program and administration were as described above for the pilot study.

### Ineligible Cases

Prior to conducting analyses, cases were reviewed for eligibility through two primary mechanisms. First, we reviewed interview logs, written about each child by the research interviewer who administered the MNBS-CR, to determine whether there appeared to be problems in areas including comprehension, attention, and random responding. All administrations of the MNBS-CR receive a standard reliability score, and all scores are reviewed by the investigators. Second, we conducted a missing values analysis to determine which children had not completed at least 90% of the MNBS-CR.

As a result of this review, 28 cases from the clinical sample were removed, eight because the child refused to complete the interview, eight because the child did not complete at least 90% of the interview, four because a parent was present and watching the child respond at the time of the interview, three because of comprehension difficulties, two because of identified mental retardation of the child after administering the ACASI, one because the child indicated he had not always answered honestly, one because parental time constraints led to an early termination of the interview, and one because the child was unable to pay attention during the interview. This resulted in a final sample of 140 older children (116 clinical, 24 community) and 177 younger children (114 clinical, 63 community).

### Analytic Approach

*Core and expanded measures of neglect.* As indicated above, the four domains of emotional, cognitive, supervisory, and physical neglect are regarded as the core domains of neglectful behavior, and most of our analyses focus on examining the psychometric properties of these core measures. In other analyses, we examined the properties of an expanded version of neglectful behavior that includes more extreme, but

relatively uncommon, types of neglect such as parental abandonment. In addition, the expanded measure of neglect includes other aspects of neglect, specifically, the Alcohol Use subscale and the Exposure to Conflict subscale. These subscales measure etiological variables that are believed to be correlated with neglect.

*Analyses conducted.* Most of the analyses in this article focus only on the portion of the clinical sample with neglect allegations and, comparatively, the sample of community children. Several analyses were conducted to provide an initial exploration of the reliability and validity of the MNBS-CR among children with a known history of neglect, and these are presented in the section that follows. Item analyses were conducted to examine reporting patterns and to determine which items might be improved upon.

## RESULTS

### *Reliability Analyses*

*Clinical sample.* Reliability analyses, displayed in Table 2, were conducted separately for the younger and older versions of the MNBS-CR. The full version of the MNBS-CR had high internal consistency reliability among the younger children with neglect concerns ( $\alpha = .66$ ) (expanded is .69). With respect to the four primary neglect domains, the alpha coefficient of internal consistency was highest for emotional neglect ( $\alpha = .60$ ). Alphas for Supervision Neglect ( $\alpha = .35$ ), Physical Neglect ( $\alpha = .29$ ), and Cognitive Neglect ( $\alpha = .26$ ) suggest inadequate internal consistency of these scales. Alpha coefficients were high for children's self-reports of depression ( $\alpha = .87$ ) but were not adequate for general appraisal of neglect. Estimates of internal consistency for Abandonment ( $\alpha = -.003$ ), Alcohol Use ( $\alpha = -.07$ ), and Exposure to Parental Conflict and Violence ( $\alpha = .22$ ) suggested these scales may not be adequate when used with younger children. However, low reliability was also related to the low number of items in these scales and low rates of reporting of these behaviors. Abandonment, in particular, was a rarely occurring act.

Among the older children with neglect concerns, the full core version of the MNBS-CR had high internal consistency reliability ( $\alpha = .94$ , expanded = .95). For the four primary neglect domains, the alpha coefficient of internal consistency reliability was highest for Supervisory Neglect ( $\alpha = .85$ ), with similar high alphas for emotional and physical neglect. The alpha for cognitive neglect was slightly lower, due most likely to the fewer items in this scale. Additional scales also yielded adequate internal consistency coeffi-

**TABLE 2: Reliability Summary for MNBS-CR Scores for Clinical Neglect and Community Samples**

Scale	Number of Items	$\alpha$ Clinical Sample		$\alpha$ Community Sample	
		Ages		Ages	
		6 to 9 Years	10 to 15 Years	6 to 9 Years	10 to 15 Years
Neglect Total (Core)	33	.66	.94	.61	.81
Neglect Total (Expanded)	38	.69	.95	.61	.78
Emotional Neglect	7	.60	.82	.09	.71
Cognitive Neglect	5	.26	.77	.14	-.15
Supervision Neglect	9	.35	.85	.12	.23
Physical Neglect	12	.29	.81	.41	.71
Abandonment	2	-.003	.62	-.01	—
Alcohol Use	2	-.07	-.09	.36	—
Exposure to Conflict	3	.22	.74	.32	.23
General Appraisal	5	.03	.65	.15	.33
Depression	6	.87	.86	.65	.59

NOTE: MNBS-CR = Multidimensional Neglectful Behavior Scale–Child Report.

Neglect Total (Core) includes Emotional, Cognitive, Supervision, and Physical subscales. Neglect Total (Expanded) includes Emotional, Cognitive, Supervision, Physical, Abandonment, Alcohol Use, and one Exposure to Conflict item ("Parent lets other people in the house hurt him or her").

cients for depression, general appraisal, abandonment, and for exposure to conflict. The Alcohol Use subscale yielded a very low internal consistency; however, this includes just two items.

*Community sample.* Within the younger child community sample, the alpha coefficient for the core and expanded versions of the MNBS-CR was .61, similar to that found for young children in the neglect sample. As shown in Table 2, alphas for individual scales were lower, with Physical Neglect showing the highest internal consistency of the four core scales, and other scales were markedly low with the exception of Depression. It should be noted that if individual items were removed from the Cognitive, Supervision, and Exposure to Conflict scales, the estimates of internal consistency reliability would improve significantly (.26, .17, and .43, respectively).

Among older children in the community sample, the alpha coefficient for the core version of the MNBS-CR was .81, and the alpha coefficient for the expanded version was .78. Alpha coefficients for Emotional Neglect and Physical Neglect were also high, as was the case for the neglected sample. Internal consistency estimates were lower for Supervision Neglect, Child's General Appraisal, Cognitive Neglect, and Exposure to Conflict. The alpha coefficient for depression among older children in the community

**TABLE 3: Correlations Among Neglect Subscales for Children With Neglect Concerns in Family**

Scales	Emotional	Cognitive	Supervision	Physical	Abandonment	Exposure to Conflict	Alcohol	Appraisal	Child Depression
Emotional Neglect		.19	.58**	.53**	.16	.56**	.61**	.10	.29*
Cognitive Neglect	.90**		.05	.04	.05	-.07	-.16	-.001	-.03
Supervision Neglect	.79**	.86**		.46**	.03	.23	.72**	.27*	.18
Physical Neglect	.80**	.83**	.76**		.07	.15	.44**	.23	.46**
Abandonment	.72**	.73**	.72**	.79**		-.07	-.07	.02	.004
Exposure to Conflict	.66**	.66**	.61**	.50**	.48**		.37**	.10	.25
Alcohol Use	.52**	.62**	.68**	.53**	.52**	.65**		.20	.24
General Appraisal	.79**	.76**	.67**	.70**	.73**	.56**	.62**		.27*
Depression	.49**	.45**	.56**	.35**	.41**	.59**	.44**	.40**	

NOTE: Upper quadrant includes younger age group and lower quadrant includes older age group.

\* $p < .05$ . \*\* $p < .01$ .

sample was similar to, but lower than, their younger child counterparts. It should be noted that if items were removed from the Supervision scale for older children in the community group, the estimate of internal consistency reliability would improve significantly (.43). It was not possible to calculate alpha coefficients for abandonment or alcohol use because of zero variance for one of the two items constituting each scale.

*Correlations among subscales.* As shown in Table 3, correlations among MNBS-CR subscales ranged from moderate to high (note that the upper quadrant is the younger age group, lower quadrant is older age group). In the younger age group, the highest subscale correlations were between supervisory neglect and alcohol (.72) (more reporting of supervisory neglect was associated with more reporting of alcohol-related neglect), and similarly between emotional neglect and alcohol, and between emotional and supervisory neglect. In the older age group, four correlations were .80 or greater: cognitive and emotional, emotional and physical, cognitive and supervision, and cognitive and physical.

#### Validity Analyses

*Associations between child reports of depression and the MNBS-CR.* Correlational analyses (not displayed in the tables) between total neglect scores and child outcomes provide some support for the construct validity of the MNBS-CR. We first examined these associations between children's reports of depressive symptoms and the core version of the MNBS-CR. Among younger and older children, self-reported depressive symptoms was significantly correlated with higher total neglect scores ( $r = .35, p < .01$ ;  $r = .56, p < .01$ ).

*Associations with PPVT.* We examined the association between the PPVT and neglect (not displayed in

the tables). Neglected children in the younger group scored significantly lower on the PPVT than children without neglect concerns in the family (Neglect:  $M = 94.24$ , No neglect:  $M = 100.54$ ;  $t = 2.33, p < .05$ ). Moreover, PPVT standard scores were related to physical neglect ( $r = -.28, p < .01$ ) among 6- to 9-year-olds. Although 10- to 15-year-olds with neglect histories scored slightly lower on the PPVT than those individuals without neglect concerns (Neglect:  $M = 96.74$ , No neglect:  $M = 99.34$ ), this difference was not statistically significant ( $t = 1.00, p > .05$ ). We also analyzed the association between PPVT scores and the MNBS-CR, and no significant associations were found for children in either age group.

*CBCL, behavioral problems, and the MNBS-CR.* We analyzed the relationship between MNBS-CR reports and caretaker reports on the CBCL (not displayed in the tables) for families in which neglect was a concern. No significant differences were found between any of the CBCL subscales, total CBCL, clinician reports of severe behavioral problems, and the MNBS-CR among 6- to 9-year-olds. CBCL total was weakly and negatively correlated with the MNBS-CR.

However, among older children the CBCL total was positively and significantly correlated with MNBS-CR supervision neglect ( $r = .41, p < .05$ ), and general appraisal ( $r = .40, p < .05$ ); MNBS-CR total scores were not significantly correlated with the CBCL total ( $r = .37, p > .05$ ). However, severe behavioral problems reported by clinicians were significantly ( $r = .31, p < .05$ ) correlated with higher MNBS-CR reports of older children.

*Associations with parental risk factors.* Associations among neglect scales and parental characteristics including history of domestic violence, history of drug abuse, history of alcohol abuse, and mental illness of the parents were examined. Table 4 shows that among

**TABLE 4: Associations Between Parental Risk Factors and MNBS Scores, Youth Ages 6 to 9 Years With Neglect Concerns in Clinical Sample ( $n = 66$ )**

	<i>Neglect Total (Core)</i>	<i>Neglect Total (Expanded)</i>	<i>Emotional</i>	<i>Cognitive</i>	<i>Supervision</i>	<i>Physical</i>	<i>Abandonment</i>	<i>Alcohol Use</i>	<i>Exposure to Conflict</i>	<i>General Appraisal</i>	<i>Depression</i>
Domestic violence	.22	.19	.20	.03	.31*	.09	-.13	.15	.03	.08	.10
Substance abuse	-.17	-.16	-.12	-.19	-.16	-.07	.21	-.08	.10	.06	.05
Drug abuse	.08	.11	.10	.07	.25	-.11	.05	.24	-.02	.23	-.04
Alcohol abuse	—	—	—	—	—	—	—	—	—	—	—
Mental illness	-.24	-.26	-.35**	-.06	-.14	-.14	.16	-.23	-.25	.26	.02

NOTE: MNBS-CR = Multidimensional Neglectful Behavior Scale–Child Report.

Neglect Total (Core) includes Emotional, Cognitive, Supervision, and Physical subscales. Neglect Total (Expanded) includes Emotional, Cognitive, Supervision, Physical, Abandonment, Alcohol Exposure, and one Exposure to Conflict item (“Parent lets other people in the house hurt him or her”).

$n$ 's vary by parental risk factor ( $n = 45$  for domestic violence;  $n = 50$  for substance abuse;  $n = 25$  for drug abuse;  $n = 45$  for mental illness). Correlations could not be computed for alcohol abuse because all participants in this group ( $n = 25$ ) had an identified history of alcohol abuse.

\* $p < .05$ . \*\* $p < .01$ .

**TABLE 5: Associations Between Parental Risk Factors and MNBS Scores, Youths Age 10 to 15 Years With Neglect Concerns in Clinical Sample ( $n = 78$ )**

	<i>Neglect Total (Core)</i>	<i>Neglect Total (Expanded)</i>	<i>Emotional</i>	<i>Cognitive</i>	<i>Supervision</i>	<i>Physical</i>	<i>Abandonment</i>	<i>Alcohol Use</i>	<i>Exposure to Conflict</i>	<i>General Appraisal</i>	<i>Depression</i>
Domestic violence	.14	.14	.15	.15	.14	.07	.09	.13	.19	.17	-.02
Substance abuse	.16	.17	.21	.17	.12	.10	.23	.24	.13	.29**	.09
Drug abuse	.21	.22	.19	.27	.20	.17	.18	.24	.13	.37*	.19
Alcohol abuse	-.32	-.33	-.25	-.26	-.34*	-.35*	-.27	-.26	-.33	-.33	-.43*
Mental illness	-.23	-.25	-.22	-.28*	-.22	-.19	-.20	-.36*	-.30*	-.24	-.34*

NOTE: MNBS-CR = Multidimensional Neglectful Behavior Scale–Child Report

Neglect Total (Core) includes Emotional, Cognitive, Supervision, and Physical subscales. Neglect Total (Expanded) includes Emotional, Cognitive, Supervision, Physical, Abandonment, Alcohol Use, and one Exposure to Conflict item (“Parent lets other people in the house hurt him or her”).  $n$ 's vary by parental risk factor ( $n = 62$  for domestic violence;  $n = 60$  for substance abuse;  $n = 35$  for drug abuse;  $n = 35$  for alcohol use;  $n = 58$  for mental illness).

\* $p < .05$ . \*\* $p < .01$ .

6- to 9-year-olds, domestic violence was significantly associated with more supervision neglect ( $r = .31$ ,  $p < .05$ ). Contrary to expectations, younger children with parents who were mentally ill reported less emotional neglect ( $r = -.35$ ,  $p < .01$ ).

As shown in Table 5, among 10- to 15-year-olds for whom there was a concern about neglect, statistically significant correlations emerged between history of parental substance abuse and general appraisal. Correlations between parental substance abuse and older children's reports of more emotional neglect and abandonment were also notable but did not reach the level of significance. Furthermore, parental history of drug abuse was associated with greater general appraisal scores ( $r = .37$ ,  $p < .05$ ). However, parental history of alcohol abuse was significantly related to lower scores on supervisory ( $p < .05$ ) and physical neglect ( $p < .05$ ), and less reported depression ( $p < .05$ ). Contrary to expectations, older children with

parents who were mentally ill reported significantly less cognitive neglect, depression, exposure to alcohol use, and exposure to domestic violence.

*Clinical and community sample comparisons on the MNBS-CR.* To examine the discriminant validity of the MNBS-CR, we compared the reports of the neglect sample to the community sample (Table 6). As anticipated, children in the clinical sample tended to score higher on neglect scales than members of the community sample. Among 6- to 9-year-olds, there were statistically significant differences on Total Neglect, Emotional Neglect, Cognitive Neglect, Supervision Neglect, Physical Neglect, Exposure to Conflict, and Alcohol Use. Among 10- to 15-year-olds, children in the clinical sample reported significantly more neglect, relative to the community sample in the areas of emotional, supervisory, cognitive, physical, exposure to conflict and violence, and alcohol exposure.

**TABLE 6: Multidimensional Neglectful Behavior Scale—Child Report (MNBS-CR): Neglect Sample and Community**

Scale	Sample Comparisons: Youths Age 6 to 9 Years		t
	Neglect Sample (n = 66)	Community Sample (n = 63)	
Neglect Total (Core)	8.31 (9.08)	3.96 (5.03)	-3.34**
Neglect Total (Expanded)	8.81 (10.04)	3.99 (5.04)	-3.42**
Emotional Neglect	1.81 (3.63)	.90 (1.64)	-1.83*
Cognitive Neglect	1.96 (2.56)	1.01 (1.54)	-2.53**
Supervision Neglect	1.68 (2.87)	.78 (1.60)	-2.17*
Physical Neglect	2.86 (3.65)	1.27 (2.36)	-2.91**
Abandonment	.05 (.21)	.02 (.13)	-.99
Exposure to Conflict	1.21 (1.95)	.62 (1.42)	-1.97*
Alcohol Use	.25 (.86)	.01 (.03)	-2.23*
General Appraisal	2.81 (2.63)	2.78 (2.46)	-.07
Depression	2.88 (4.26)	1.53 (3.09)	-1.95

Scale	Youths Age 10 to 15 Years		t
	Neglect Sample (n = 78)	Community Sample (n = 24)	
Neglect Total (Core)	11.40 (19.11)	5.10 (7.96)	-2.33*
Neglect Total (Expanded)	12.19 (21.15)	5.32 (7.92)	-2.38**
Emotional Neglect	3.23 (5.33)	1.51 (3.19)	-1.94*
Cognitive Neglect	2.27 (3.97)	.75 (1.36)	-2.87**
Supervision Neglect	3.43 (6.07)	1.72 (2.51)	-1.99*
Physical Neglect	2.47 (5.20)	1.13 (2.77)	-1.64*
Abandonment	.28 (1.01)	.08 (.41)	-0.84
Exposure to Conflict	1.42 (2.76)	.50 (1.21)	-2.31*
Alcohol Use	.33 (1.02)	0	-2.92**
General Appraisal	2.07 (3.45)	2.23 (2.41)	.24
Depression	3.36 (5.98)	1.92 (3.09)	-1.13

NOTE: Neglect Total (Core) includes Emotional, Cognitive, Supervision, and Physical subscales. Neglect Total (Expanded) includes Emotional, Cognitive, Supervision, Physical, Abandonment, Alcohol Exposure, and one Exposure to Conflict item ("Parent lets other people in the house hurt him or her").

\* $p < .05$ . \*\* $p < .01$ . One-tailed tests used.

### Item Analysis for the MNBS-CR

We also conducted an item analysis of the MNBS-CR for the clinical and community samples (see Appendix). This is particularly helpful in discerning which items are contributing to scores, differentiating between groups, and suggesting items that might be improved on, retained, or deleted. The general patterns evident in this table were supported by the statistical analyses presented above: Children in the clinical sample generally report more neglect than children in the community sample, but with variations by age, and according to the domain being examined. Among younger children, all forms of neglect (as measured by the occurrence of any

neglectful behavior reported by the child) were greater than that reported by community children with the exception of the General Appraisal subscale.

Looking first at the emotional domain for younger children, most items appeared to discriminate well, in the expected direction, except for "This child's parent does not do fun things with him." In addition, no children in either sample reported that the parent does not tell him or her that she or he is loved. Among older children, similar patterns emerged, all items worked in the expected direction, and there was some reporting of parental failure to express verbal affection.

An examination of the cognitive domain for younger children in both samples showed very low rates of reporting for items relative to the child's learning (with the exception of the item concerning the parent reading with the child), and assisting the child with comprehension. Among older children, all items appeared to discriminate well and were reported more frequently among both samples.

In regard to the supervisory domain, several items emerged with low rates of occurrence for both of the youngest samples, including "Leaves him places where he does not feel safe"; "Does not make sure he goes to school"; "Leaves him or her alone." For older children, some of the same issues emerged. In addition, the items, "Does not call from work after school to check on the child," did not appear to differentiate between the older samples well.

As noted above, physical neglect is a heterogeneous concept, which is more often present among clinical than community samples, even though individual occurrences are low. As anticipated, gaps in the provision of care, which were consistent with severe neglect, are more likely to be reported by younger and older clinical sample children relative to community children. Exceptions were noted in items measuring the cleanliness of the home, permissiveness about junk food, and the warmth of the home environment. However, most of the latter items (except for the warmth of the home) likely did not present serious concerns to the welfare of the child.

Scale items measuring the more extreme ends of the neglect continuum (abandonment, parental substance abuse) were reported infrequently but were more prevalent among older and younger children.

An examination of the General Appraisal scale revealed that several items did not discriminate well between groups. This was particularly so for the item assessing parentification of the child ("This child has to take care of his parent,") and for the item "This child feels hungry a lot." Possibly these items may need revision, and further analyses need to be con-

ducted. It would seem that the parentification item may be viewed as socially desirable by all children. Furthermore, as the data showed, feeling hungry is not equivalent to children's reporting of inadequate food in the house. The most poignant and telling item of this scale is the item indicating that the child did not feel that someone loved him or her. As anticipated, neglected children reported this more often than community children.

#### SUMMARY OF THE PRELIMINARY RESULTS

This article described the conceptualization, development, and preliminary psychometric properties of a standardized measure of neglect developed for the purpose of children's self-report. The MNBS-CR differs from many previous instruments in its focus on the child's perspective, and in regard to its broad conceptualization, and intended audience. The MNBS-CR attempts to capture the many dimensions of neglectful parental behaviors that range from behaviors consistent with proper parenthood (Giovannoni, 1993) but not falling within the realm of CPS, to acts of more extreme severity that are likely to be regarded as criminal, such as abandonment. We had anticipated that development of the measure would be challenging, particularly in regard to visually depicting the absence of appropriate caregiver behaviors. Our efforts supported the notion that there are real challenges to developing reliable and valid self-report measures, especially for young children; however, the findings also support the potential of this approach.

Preliminary psychometric data provided support for the overall reliability of the full-scale instrument, and for the heterogeneity of neglect. Among older and younger children, the full version of the MNBS-CR has high internal consistency reliability, although with higher reliability found for older children. In regard to the four core domains, a similar pattern emerged for children of all ages tested, with the alpha coefficient of internal consistency reliability tending to be highest for emotional neglect. Among older children, supervisory neglect had the highest alpha, and this is most likely related to the reasons older children come to the attention of CPS. There were similarly robust coefficients for emotional, supervisory, and physical neglect. Slightly lower but more than adequate reliability scores (.77) were found for cognitive neglect. Additional scales yielded adequate internal consistency coefficients for exposure to conflict and violence, for depression, abandonment, and children's appraisal of neglect among older children. Lower reliability scores were found for the Parental Alcohol Use subscale for both age groups, and this

may be related to the fact that the children's rates of reporting this problem were low, and also because the scale contained only two items. Low reliability scores for younger children's reports on several scales, particularly Cognitive and Supervision, was concerning and suggests, at minimum, that there is a need for revision of these scales. Possibly, some elements of these scales may be less salient to younger children, reflecting situations that are experienced in subjectively different ways, or difficult to capture; however, we are proposing some revisions to these scales.

Older children differed considerably from younger children in regard to the reliability scores for exposure to conflict and violence. Older children reported these events more often, and older children had higher alpha levels for this subscale than did younger children. Possibly younger children were more fearful about reporting violence in the family or may have regarded telling such family secrets as tantamount to disloyalty to the parent. This suggests a need for further examination.

Support for the construct validity of the MNBS-CR was provided by the finding that two of the four major subscales were correlated with depressive symptoms in the predicted direction for younger children, and all four were correlated with depressive symptoms among older children. However, these findings may also be biased by the shared method variance of same child reporters on these MNBS scales.

Recent studies have reported cognitive deficits in neglected children (e.g., Kendall-Tackett & Eckenrode, 1997). Some of these effects may be a result of neglectful parents' limited social interaction with their children (Schumacher, Smith Slep, & Heyman, 2001), which, in turn, leads to limitations in the child's ability to conceptualize (Tower, 1996). However, although our analysis of PPVT scores did not show a significant correlation with total neglect scores for the younger neglected sample, scores were negatively correlated with the PPVT indicating the higher the neglect scores, the lower the receptive vocabulary. An important finding was that young children with lower PPVT scores did report significantly more physical neglect. The lack of an association between PPVT scores and children's reports of cognitive neglect may be due to the low reliability of this subscale.

Further support for the construct validity of the MNBS-CR was provided by findings supporting a significant association between a history of domestic violence documented by clinicians, and supervisory neglect of younger children. (e.g., a history of domestic violence increased the child's self-reporting of neglect). Among older children, a history of parental

substance abuse was significantly associated only with an increased perception of neglect as measured by the Appraisal scale of the MNBS-CR. The association between higher appraisal of neglect and history of parental substance abuse may be reflective of the parentification of children that has been noted at least anecdotally by clinicians in substance abusing families, and this is an item in the Appraisal scale.

The most important of the findings pointing to the discriminant validity of the scale was provided in the analyses showing that younger and older children with a documented history of neglect scored significantly higher on the MNBS-CR than community children. We plan to conduct specificity and sensitivity analyses when scale revisions are completed and data collection efforts are expanded.

Item analyses, reliability analyses, and a review of study findings with our forensic team members suggested a need for some scale revisions to increase the likelihood of detecting neglect for young children. We plan the following modifications: (a) addition of one item to the Emotional Neglect scale: "This child's parent does not give him or her hugs"; (b) Cognitive scale: deletion of one item, "This child's parent does not talk to his or her teachers." Two items in the Cognitive scale will be modified: "This child's parent does not talk to him or her about what she or he did in school that day," will be used in place of the item, "This child's parent talks to him or her about what she or he is learning at school." Two new items will be added to the Cognitive scale: "This child's parent does not help him or her figure out how to do something; "This child's parent does not tell him or her to work hard at school"; (c) Supervision scale: One item will be revised, "This child's parent leaves him or her with grown-ups that make him or her feel afraid," will

replace the item, "This child's parent leaves him or her places where she or he does not feel safe"; (d) Physical scale: revision of one item, "This child's parent did not take him or her to the doctor's in the past year," will replace "This child does not go to the doctor for check-ups"; (e) Exposure to Conflict: addition of one item, "This child sees grown-ups in the house throwing things"; (f) Alcohol Use: addition of one item, "This child's parent uses drugs and cannot take care of him or her."

The preliminary results suggest that the MNBS-CR has a great deal of potential as a tool for screening of neglect and clinical assessment of maltreated children by child protection agencies, researchers, and clinicians. Additional data collection, particularly with a larger comparison sample, is indicated, before clinical implementation. Some of the absences of anticipated findings noted above may be because of the small sample sizes, and consequently, low statistical power. Further research using a multisample approach is indicated, including additional testing of children from the general community, CPS, and a more ethnically diverse sample. We also plan to develop and test a social desirability measure with the MNBS-CR. Future analyses will examine the concurrent validity of the MNBS-CR by analyzing, for example, the concordance of the MNBS-CR with specific neglect clinical classifications and with analyses of video-taped parent-child interactions, and the concordance of neglect reporting between siblings. We plan to conduct specificity and sensitivity analyses so that specific cut points can be established for clinical and research usage, and we plan to explore other approaches to scoring the revised measure including the use of a weighted, severity approach, and the development of minor and severe scores of neglect.

**APPENDIX**  
**MNBS-CR Item Response Frequencies and Means, Youths Age 6 to 9 Years and Age 10 to 15 Years**

	Youths Age 6 to 9 Years				Youths Age 10 to 15 Years			
	Clinical (n = 66)		Community (n = 63)		Clinical (n = 78)		Community (n = 24)	
	Frequency (%)	M (SD)	Frequency (%)	M (SD)	Frequency (%)	M (SD)	Frequency (%)	M (SD)
<b>Emotional</b>								
At least 1 indicator of emotional neglect present	41 (38)	—	15 (26)	—	48 (43)	—	7 (29)	—
This child's parent does not watch him or her play	14 (21)	.57 (1.25)	8 (13)	.34 (.96)	28 (37)	1.06 (1.52)	6 (25)	.63 (1.21)
This child's parent does not make him or her feel better when he or she is sad or scared	5 (8)	.25 (.92)	0 (0)	.00 (.00)	7 (9)	.29 (.97)	1 (4)	.09 (.42)
This child's parent does not hang his or her drawings in the home	6 (9)	.33 (1.09)	2 (3)	.08 (.52)	n/a	n/a	n/a	n/a
This child's parent does not hang his or her schoolwork in the home	n/a	n/a	n/a	n/a	20 (26)	.80 (1.45)	3 (13)	.42 (1.17)
This child's parent does not tell him or her he or she loves him or her	0 (0)	.00 (.00)	0 (0)	.00 (.00)	4 (5)	.15 (.69)	1 (4)	.13 (.61)
This child's parent does not do fun things with him or her	6 (10)	.30 (1.01)	9 (15)	.34 (.90)	12 (16)	.43 (1.07)	1 (4)	.08 (.41)
This child's parent does not cook his or her favorite foods	3 (5)	.14 (.70)	2 (3)	.13 (.71)	5 (6)	.17 (.71)	1 (4)	.04 (.20)
This child's parent does not answer him or her when he or she asks questions	5 (8)	.22 (.86)	0 (0)	.00 (.00)	9 (12)	.35 (1.03)	1 (4)	.13 (.61)
<b>Cognitive</b>								
At least 1 indicator of cognitive neglect present	49 (47)	—	21 (36)	—	39 (35)	—	7 (29)	—
This child's parent does not talk to his or her teachers	6 (9)	.31 (.96)	5 (8)	.10 (.43)	10 (13)	.32 (.92)	1 (4)	.04 (.20)
This child's parent does not talk to him or her a lot	9 (14)	.35 (1.04)	2 (3)	.06 (.35)	8 (10)	.33 (1.03)	1 (4)	.13 (.61)
This child's parent does not read books with him or her	25 (39)	1.05 (1.53)	20 (33)	.79 (1.32)	n/a	n/a	n/a	n/a
This child's parent does not bring him or her to museums or other interesting places	n/a	n/a	n/a	n/a	20 (26)	.65 (1.27)	3 (13)	.29 (.91)
This child's parent does not talk to him or her about what he or she is learning in school	3 (5)	.39 (1.04)	1 (2)	.09 (.50)	17 (22)	.62 (1.26)	3 (13)	.29 (.91)
This child's parent does not help when he or she has trouble understanding something	2 (3)	.24 (.86)	1 (2)	.03 (.32)	10 (13)	.35 (.97)	0 (0)	.00 (.00)
<b>Supervision</b>								
At least 1 indicator of supervision neglect present	38 (40)	—	14 (26)	—	46 (46)	—	9 (39)	—
This child's parent does not know where he or she's playing outdoors	4 (6)	.17 (.78)	1 (2)	.06 (.50)	n/a	n/a	n/a	n/a
This child's parent does not find out where she or he is going after school	n/a	n/a	n/a	n/a	11 (15)	.42 (1.09)	1 (4)	.17 (.82)
This child's parent leaves him or her alone in the car for a long time	3 (5)	.15 (.73)	3 (5)	.10 (.47)	n/a	n/a	n/a	n/a
This child's parent does not call from work after school to check on him or her	n/a	n/a	n/a	n/a	20 (30)	.74 (1.31)	6 (27)	.68 (1.39)
This child's parent leaves him or her places where he or she does not feel safe	1 (2)	.07 (.49)	0 (0)	.02 (.21)	3 (4)	.12 (.65)	1 (4)	.08 (.41)
This child's parent does not make sure that he or she goes to school	2 (3)	.13 (.64)	2 (3)	.06 (.44)	4 (5)	.14 (.66)	0 (0)	.00 (.00)
This child's parent does not make sure someone checks on him or her when he or she's alone	4 (7)	.40 (.99)	3 (5)	.19 (.80)	19 (24)	.59 (1.13)	2 (8)	.17 (.64)
This child's parent does not care if he or she gets in trouble at school	3 (5)	.25 (.91)	2 (3)	.07 (.46)	8 (10)	.32 (.99)	1 (4)	.17 (.82)
This child's parent does not know any of his or her friends	7 (11)	.37 (1.09)	2 (3)	.09 (.52)	10 (13)	.41 (1.13)	1 (4)	.08 (.41)
This child's parent does not know what he or she is doing when he or she is not home	11 (18)	.57 (1.28)	4 (6)	.20 (.71)	n/a	n/a	n/a	n/a
This child's parent does not care if she or he does things like steal	n/a	n/a	n/a	n/a	2 (3)	.06 (.41)	1 (4)	.17 (.82)
This child's parent leaves him or her home alone	1 (2)	.36 (.98)	0 (0)	.06 (.39)	18 (24)	.66 (1.26)	2 (8)	.21 (.72)

(continued)

## APPENDIX (continued)

	Youths Age 6 to 9 Years			Youths Age 10 to 15 Years		
	Clinical (n = 66)		Community (n = 63)	Clinical (n = 78)		Community (n = 24)
	Frequency (%)	M (SD)	Frequency (%)	M (SD)	Frequency (%)	M (SD)
<b>Physical</b>						
At least 1 indicator of physical neglect present	52 (50)	—	19 (32)	—	38 (34)	—
This child's parent does not make sure he or she takes a bath	2 (3)	.07 (.50)	0 (0)	.00 (.00)	1 (1)	.03 (.23)
There is a lot of garbage in this child's home	1 (2)	.08 (.48)	1 (2)	.02 (.15)	3 (4)	.12 (.60)
This child's parent does not make sure he or she wears warm clothes	3 (5)	.13 (.64)	0 (0)	.02 (.22)	4 (5)	.13 (.59)
This child's parent does not take him or her to the doctor	6 (10)	.24 (.88)	2 (3)	.06 (.44)	5 (7)	.17 (.70)
This child does not go to the doctor for check-ups	3 (5)	.13 (.65)	1 (2)	.07 (.48)	3 (4)	.09 (.51)
This child's parent does not make sure he or she brushes his or her teeth	2 (3)	.17 (.68)	1 (2)	.06 (.35)	8 (10)	.27 (.88)
This child does not go to the dentist for check-ups	9 (14)	.38 (1.04)	3 (5)	.09 (.50)	11 (14)	.35 (.95)
This child does not have enough food to eat in his or her home	3 (5)	.20 (.81)	2 (3)	.02 (.15)	7 (9)	.26 (.89)
This child's parent does not care if he or she eats vegetables, fruit, and milk	5 (8)	.30 (.99)	4 (6)	.17 (.73)	9 (12)	.33 (1.00)
This child's parent lets him or her fill up on chips, candy, and soda	21 (32)	.78 (1.40)	13 (21)	.52 (1.15)	18 (23)	.58 (1.17)
This child does not live in a house, apartment, or trailer	3 (5)	.11 (.59)	0 (0)	.00 (.00)	2 (3)	.05 (.36)
When it is cold outside, this child's home is really cold	1 (2)	.07 (.43)	5 (7.9)	.18 (.69)	3 (4)	.11 (.53)
<b>Abandonment</b>						
At least 1 indicator of abandonment present	6 (6)	—	1 (2)	—	6 (5)	—
This child's parent left him or her alone for a couple of days without a grown-up	0 (0)	.07 (.49)	1 (2)	.03 (.24)	3 (4)	.13 (.66)
This child's parent left him or her somewhere and did not come back	3 (5)	.10 (.50)	0 (0)	.00 (.00)	5 (6)	.15 (.65)
<b>Exposure to conflict</b>						
At least 1 indicator of failure to protect present	40 (37)	—	16 (28)	—	27 (25)	—
This child hears the grown-ups in the house fighting	16 (24)	.65 (1.26)	15 (25)	.48 (1.10)	20 (26)	.70 (1.31)
This child sees the grown-ups in the house hitting each other	11 (18)	.50 (1.18)	2 (3)	.07 (.45)	14 (18)	.56 (1.27)
This child's parent lets other people in the house hurt him or her	4 (6)	.18 (.78)	0 (0)	.03 (.32)	5 (7)	.17 (.71)
<b>Alcohol use</b>						
At least 1 indicator of alcohol use present	9 (9)	—	0 (0)	—	10 (9)	—
This child's parent gets drunk and cannot take care of him or her	3 (5)	.21 (.81)	0 (0)	.00 (.00)	8 (10)	.30 (.93)
This child's parent lets him or her drink beer	3 (5)	.08 (.55)	0 (0)	.00 (.00)	1 (1)	.04 (.34)
<b>General appraisal</b>						
At least 1 indicator of general appraisal reflecting neglect present	66 (67)	—	42 (73)	—	46 (42)	—
This child feels like no one takes care of him or her	0 (0)	.09 (.54)	0 (0)	.00 (.00)	4 (5)	.17 (.73)
This child has to take care of his or her parent	32 (49)	1.20 (1.64)	37 (60.7)	1.83 (1.70)	25 (34)	.92 (1.43)
This child does not feel like someone loves him or her	3 (5)	.13 (.63)	0 (0)	.00 (.00)	4 (5)	.14 (.68)
This child feels no one helps him or her with his or her schoolwork	6 (10)	.31 (1.02)	4 (6.7)	.11 (.52)	8 (10)	.33 (1.04)
This child feels hungry a lot	16 (25)	.67 (1.42)	15 (23.8)	.70 (1.41)	12 (15)	.49 (1.22)

NOTE: MNBS-CR = Multidimensional Neglectful Behavior Scale-Child Report. *n*'s vary depending on item. Potential range for means is 0 to 4.

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