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## Cross-cultural reliability and validity of the Multidimensional Neglectful Behavior Scale Adult Recall Short Form<sup>☆</sup>

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### Abstract

**Objective:** To provide data on the cross-cultural reliability of the Adult Recall Short Form of the Multidimensional Neglectful Behavior Scale (MNBS), and also illustrative validity evidence. The MNBS includes items on four aspects of neglectful behavior: cognitive, emotional, physical, and supervisory.

**Method:** The data were obtained by questionnaires completed by a convenience sample of 7179 students at 33 universities in 17 countries.

**Results:** The alpha coefficient of internal consistency for the entire sample was .72. By site, the coefficients ranged from one site with .55–12 sites in the .60–.69 range, and 20 sites with alpha of .70 or higher. The validity of the scale was indicated by low confounding with social desirability response set in all 33 cultural contexts, and by the results of construct validity analyses which controlled for physical maltreatment found that students who were victims of neglectful behavior as a child were more likely than other students to have physically assaulted a dating partner in the previous 12 months.

**Conclusions:** Although the results are from a relatively privileged sample, they revealed high rates of neglectful behavior and are sufficiently promising to encourage use of the Adult Recall Short Form of the MNBS in a variety of cultural settings.

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## Introduction

The Multidimensional Neglectful Behavior Scale (MNBS) measures four dimensions of neglect of a child's developmental needs: emotional neglect, physical neglect, cognitive neglect, and supervisory neglect. The MNBS was created to help deal with the often stated discrepancy between the fact that neglect is the most prevalent form of child maltreatment, but least often the focus of research, and the call for new methods of measuring neglect to facilitate the needed expansion of research (National Academy of Sciences, 1993). The MNBS is intended to help provide some of the needed new instrumentation. There are versions of the MNBS to be administered by interview, by questionnaire, and by computer. There are versions for children to report neglectful behavior, for adult recall of neglectful behavior, and for parents to report on their own neglectful behavior. This article focuses on a short form of the adolescent-report/adult recall version, the MNBS-AS.

## Importance of data on neglect in the general population

Research on neglectful behavior by parents in the general population is one of the important directions for needed expansion or research. Expansion of research on neglect in the general population is facilitated by the availability of brief instruments that can be used in epidemiologic surveys, such as the instrument described in this article. The information from such general population research can help provide information to assist in designing programs of primary prevention of neglectful behavior by parents. Information on neglectful behavior in the general population can also contribute to theoretical understanding of the etiology of neglect because it may be less difficult to disentangle social psychological etiological factors from economic factors. An equally important reason for expanding research on neglect in the general population is to understand the effects on children, such as an increased risk of physical aggression and crime.

Investigations of the antecedents and consequences of neglectful behavior in the general population would be facilitated by child-report and parent-report instruments to measure neglectful behavior. However, such instruments are rare (but see the EMBU, Eisemann, Gaszner, Perris, & Richter, 1990) and the Parental Acceptance-Rejection Questionnaire (Rohner, 1986). A problem, which may partly explain the paucity of measures is the absence of agreement on the definition of neglect. The definitional problem persists despite considerable effort, such as conferences devoted to this issue sponsored by the National Institutes of Health. It is therefore important that readers know the definition used to guide the development of the Multidimensional Neglectful Behavior Scale described in this article.

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 (Straus & Kaufman Kantor, 2005).

### *Versions of the MNBS*

The Multidimensional Neglectful Behavior Scale (MNBS) was constructed following the guidelines identified in a previous article (Straus & Kaufman Kantor, 2005). As indicated previously, there are several versions of the MNBS.

*MNBS-C* obtains children's reports of neglectful behavior by their parents. The items are presented to the children pictorially and orally by means of a computer. There are versions for children ages 6–9 and 10–15 (Kaufman Kantor et al., 2004).

*MNBS-P* obtains data by interview or self-administered questionnaire completed by parents. In contrast to Forms A and C, which are reports of victimization, Form P is a self-report of perpetration of neglectful behavior (Kaufman Kantor et al., 2004).

*MNBS-A* obtains data on neglectful behavior by parents as recalled by adults, or as currently experienced by adolescents (Straus, Kinard, & Williams, 1995). Previous research has found satisfactory to high levels of reliability for this instrument and also evidence of construct validity (Harrington, Zuravin, DePanfilis, Ting, & Dubowitz, 2002; Lounds, Borkowski, & Whitman, 2003; Straus et al., 1995; Straus & Savage, 2005). The alpha coefficient of reliability of the full-length scale for a sample of 359 American students is .93 (Straus et al., 1995). Evidence of construct validity for that sample is given in Table 3 of Straus et al. (1995); for example, children who were brought up by persons other than their biological mother reported more neglectful behavior.

*MNBS-AS* is a short form of the *MNBS-A*. It was developed for inclusion as one of the scales in the Personal And Relationships Profile (Straus, Hamby, Boney-McCoy, & Sugarman, 1999; Straus & Mouradian, 1999). The Personal And Relationships Profile is a multiscale instrument that provides measures of 22 risk factors for physical violence against a partner in a dating, cohabiting, or marital relationship. Each of the 22 scales is limited to eight items in order to make the test administration time practical. There are other situations where a very short instrument is required. For example, most survey research is now conducted by telephone and the practical limit for a phone interview is thought to be about 30 min (Farnsworth, Bennett, & West, 1996; Smith, 1989). If neglectful behavior is one of several aspects of childhood experiences that needs to be measured, only a few questions can be included for each of the aspects.

Although there is evidence of the reliability and validity of the *MNBS* in the North American cultural context, an instrument can have excellent psychometric properties in one socio-cultural context and may not in another. The short form of the adult recall version of the Multidimensional Neglect Scale was used in a study of university students in 17 countries—the International Dating Violence Study. These data made possible the primary purpose of this article, which is to address the question of whether the reliability of the Adult Recall Short Form of the *MNBS* in the North American context applies in other cultural contexts. A secondary purpose is to present an example of evidence on the cross-national construct validity of this version of the *MNBS*. The example will examine whether the relation of neglect to antisocial and violent behavior found by the studies cited in the next section will also be found using the Adult Recall Short Form version of the *MNBS*, the *MNBS-AS*.

## **Neglect and aggression**

The data on violence against a dating partner in the International Dating Violence Study (described in the next section) provides an opportunity to examine the construct validity of the *MNBS*. This is because there is considerable evidence that neglect is a risk factor for physical violence and other criminal behavior. One of the processes linking neglect and violence was identified by Tremblay (2003). His review of research on age differences in aggression, and his empirical studies, show that acts of physical aggression peak at age 2 and decline thereafter. He argues that “Physical aggression appears during infancy as a natural way of expressing anger and as a natural instrument to achieve goals—for example, taking an object from someone else. During their development most children learn to use alternative strategies to express anger and achieve their goals. Those who do not will become increasingly dangerous for others

as they grow older, because they become physically stronger and more cognitively skilled” (Tremblay, 2003). Tremblay goes on to argue that one of the factors enabling a child to learn alternative nonaggressive strategies is care by a responsive parent and consistent discipline. A neglected child, by definition, does not have a responsive parent or consistent guidance. One can, therefore, deduce the hypothesis that a high score on the MNBS will be associated with physical aggression toward others, including partners in dating and marital relationships.

Previous empirical studies on the link between neglect and aggressive and antisocial behavior were reviewed in more detail elsewhere (Straus & Savage, 2005). That review is highly consistent with the hypothesis just stated. Examples of the studies include Widom and Maxfield (2001), who found that the “neglect only” group (i.e., no co-occurrence of physical and sexual abuse) were 69% more likely than the matched control group of nonmaltreated children to have been arrested for a violent crime. A study by Kendall-Tackett and Eckenrode (1997) also provided data on whether the relation of neglect to antisocial behavior was the result of the frequent co-occurrence of neglect and physical abuse. They compared children classified as neglect-only, neglect and abuse, and nonmaltreated. They found that, in each of five age groups, the neglect-only group had significantly more disciplinary problems in school than did the nonmaltreated group. This relationship is relevant for the issue of the current study because disciplinary problems in school are associated with an increased probability of antisocial and violent behavior later in life.

A limitation of the Kendall-Tackett and Widom and Maxfield studies is that they were limited to cases of neglect known to child protective service agencies. These cases do not provide information on whether neglect is related to aggressive and other antisocial and criminal behavior in the general population. There are, however, studies, which have addressed that issue. Crittenden and DiLalla (1988) found that when interacting with their mothers, neglected children display more anger than do physically abused children. Knutson, DeGarmo, and Reid’s longitudinal study of 310 first grade and 361 fifth grade children used multimethod and multisource measures of neglect and of child behavior and structural equation modeling to control for many potential confounds (Knutson, DeGarmo, & Reid, 2004). They found that, for both age cohorts, neglect at Time 1 was significantly related to aggression and antisocial behavior at Time 2.

Three studies of adolescents and adults found that neglect is related to antisocial and criminal behavior. Hildyard and Wolfe (2002) found that both physical abuse and neglect are associated with subsequent criminal behavior and personality disorders. A longitudinal study by Henry and Silva (1996) found that deficient or neglectful parenting was linked to adolescent antisocial behavior and crime. Finally, a longitudinal study of a nationally representative sample of 942 children (Chapple, Tyler, & Bersani, 2005) found that, after controlling for 10 other variables, neglected children had an increased probability of violence as an adolescent. The consistency of these studies provides a basis for expecting that, if the MNBS is a valid measure of neglect experienced, it will be associated with an increased probability of physical aggression against others, including partners in a dating or marital relationship.

### **The International Dating Violence Study**

The data for this article are from the International Dating Violence Study. The study, which began in 2001, is being conducted by members of a consortium of researchers at universities in all but one major world region. A detailed description of the study, including the questionnaire and all other key documents, is available on the website <http://pubpages.unh.edu/~mas2> and a report on some of the preliminary results is available (Straus & International Dating Violence Research Consortium, 2004).

There is a core questionnaire that each member of the International Dating Violence Research Consortium agreed to translate and back-translate. These translations are available on the website <http://pubpages.unh.edu~mas2>. In addition, the members added questions to measure variables that are uniquely important for their site or to measure constructs that are needed to test a theory of particular interest. These procedures allow the benefits of both standardized measures for all the sites, and also the benefits of culturally informed investigations of unique issues in each university.

## Methods

### *Samples*

The research was conducted at 33 university sites in 17 countries, as listed in [Table 1](#). The questionnaires were usually administered in classes taught by members of the consortium and in other classes for which they could make arrangements. Thus, it is a convenience sample.

At most sites, about two thirds of the students were women. This is because the questionnaire was usually administered in psychology, sociology, and criminology classes, where women students predominate.

In accordance with the protocol on human subjects under which the study was conducted, only students who were 18 or older were given the questionnaire. Because this article includes data on the relationship of neglect to violence against a dating partner, students who had not been in a dating relationship lasting a month or more could not be included in the statistical analysis. The percent in a dating relationship varied from 100% to less than a third in Pune, India, where dating is not part of the traditional culture. In addition, respondents who omitted one or more of the questions needed for the scales could not be included. The total number of students who met these criteria was 7179. [Table 1](#) shows that the number of cases at each site ranged from 89 to 550, with a mean of 279.

[Table 1](#) gives the number of cases per site, and for each site, the percent female, the mean age of the students, and the mean length of the dating relationship they described when completing the questionnaire. To avoid confounding with gender and the other variables in [Table 1](#), the variables in [Table 1](#) were controlled in the partial correlations and ANCOVAs to be reported. If this were entirely a North American study, race would have been included. However, a question on race could not be in the standard International Dating Violence Study questionnaire because US racial categories are not meaningful in most of the countries in this study.

### *Informed consent and privacy*

The procedures to protect the rights and safety of the participants were reviewed by appropriate authorities at each university. These procedures included explaining the purpose of the study and the fact that the questionnaire contains questions on sensitive issues, including sexual relationships. To respect the privacy and the voluntary nature of participation, the instructions emphasized that respondents should turn in a blank questionnaire if they did not want to answer the questionnaire, and that they were free to omit any question they did not wish to answer. The same information was printed on the cover page of the questionnaire.

Table 1  
 Characteristics of students at each site

University site	N	% Female	Mean age	Relationship length (months)
Total	7179	71.4	22.0	13.7
Asia and Middle east				
Hong Kong	161	58.4	24.1	12.3
India-Pune	89	70.8	22.7	13.1
Israel-Emekzyrl	346	82.7	23.1	12.5
Korea-Pusan	237	60.3	24.6	10.5
Singapore	223	70.0	25.1	17.3
Australia–New Zealand				
Australia-Adelaide	219	80.8	23.8	15.8
New Zealand-Christchurch	118	77.1	21.4	12.5
Europe				
Belgium-Flemish	448	77.2	20.4	14.6
Switzerland-French	220	71.4	21.6	16.0
Switzerland-German	135	77.0	19.4	14.2
Germany-Freiburg	165	57.6	23.7	13.4
UK-Scotland	218	84.4	21.9	13.9
Netherlands-Amsterdam	127	77.2	22.3	14.3
Portugal-Braga	150	40.7	22.2	15.6
Latin America				
Brazil-Sao Paulo	322	66.8	21.5	13.1
Mexico-Northern City	208	83.7	20.7	12.8
North America				
Canada-Hamilton	245	86.5	21.5	15.2
Canada-London	120	58.3	19.4	11.2
Canada-Montreal	292	78.8	23.7	17.1
Canada-Toronto	218	67.0	20.4	12.8
Canada-Winnipeg	141	89.4	22.1	15.3
U.S.A.-Cincinnati	303	53.1	20.6	13.6
U.S.A.-Washington DC	84	84.5	20.5	14.3
U.S.A.-Indiana	234	70.5	19.8	12.7
U.S.A.-Louisiana	128	67.2	21.4	12.8
U.S.A.-Mississippi	221	90.0	28.4	18.7
U.S.A.-New Hampshire 1 (1998)	550	67.6	19.5	9.1
U.S.A.-New Hampshire 2 (2002)	293	74.1	20.8	13.7
U.S.A.-Pennsylvania	215	75.8	20.0	11.3
U.S.A.-Texas-Nacogdoches	109	72.5	20.8	12.7
U.S.A.-Texas-Mexican American	242	62.0	24.7	16.3
U.S.A.-Texas-Non Mexican	230	55.7	24.1	15.4
U.S.A.-Utah	168	64.9	21.9	11.6

### Data quality control

The completed questionnaires were examined for questionable response patterns, such as reporting an injury but not reporting an assault as having occurred; or cases with an implausible response, such

Table 2  
Percent of students who experienced each neglectful behaviors

Neglectful behavior dimension	Students (N = 7179)	Sites (N = 33)	
		Min	Max
My parents helped me with homework if I needed help (RX), cognitive	29	10	73
My parents did not comfort me when I was upset, emotional	17	6	41
My parents helped me when I had problems (R), emotional	15	8	28
My parents made sure I went to school (RY), supervisory	15	1	85
My parents did not help me to do my best, cognitive	12	5	19
My parents gave me enough clothes to keep me warm (R), physical	8	4	20
My parents did not keep me clean, physical	5	1	13
My parents did not care if I got into trouble in school, supervisory	5	2	19

R indicates a reverse scored item. (X) indicates that the item has been replaced in the revised version of the scale in [Appendix A](#) with “Helped me when I had trouble understanding something.” (Y) indicates that this item has been replaced in the revised version of the scale in [Appendix A](#) by “My parents did not care if I did things like shoplifting.” See text for explanation.

as attacking partner with a knife or gun 10 or more times in the past year. About 4% of the cases were identified as questionable and were removed from the sample.

#### *The Multidimensional Neglectful Behavior-Adult Short Form*

Form AS of the MNBS was designed as a brief measure of neglectful behavior currently being experienced by adolescents, or to measure recall by adults of neglectful behavior by their parents when they were living with the parents or other caretakers. The full MNBS consists of 20 items (5 items per dimension). The four dimensions were selected on the basis of a review of previous measures of neglect. Extensive psychometric analyses, including factor analyses, were used to select the questions for each scale from a large starting pool of items. A detailed description of these procedures and an analysis of the strengths and weakness of this instrument are given in [Straus et al. \(1995\)](#).

The eight items for the short form were selected using the SPSS procedure SCALE. To assure that each of the four dimensions was represented in the short form, the two items from each scale with the highest correlation between the item and the composite of the other items in the subscale total were selected. Because there are only two items per dimension, only scores for the overall scale are reported in this article. The eight items, and the full-length scale from which each pair of items were selected are given in [Table 2](#). An R indicates a reverse scored item, the items marked X and Y were used for the study reported in this article, but for reasons explained below, they have been replaced in the version the scale recommended for future use.

The response categories used for this study were: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree. Students who choose agree or strongly agree were classified as having experienced the neglectful behavior indicated by the item. For this study, the students could respond about the behavior of the parent or other caretaker for any period in which they lived with them. This may create a problem with great variability in the time period to which the data apply. For the study reported in this article, the MNBS was scored by first dichotomizing the items into agree and strongly agree = 1, and disagree and strongly disagree = 0. The scale score is the number of neglectful behaviors the respondent agreed

happened. The scores can range from 0 (did not agree with any of the items) to 8 (agreed with all the items). Other methods of scoring are in Straus et al. (1995).

*Pervasiveness of neglectful behavior.* One of the most ambiguous aspects of defining and measuring neglect concerns how pervasive the neglectful behavior must be for a parent to be classified as neglectful (Straus & Kaufman Kantor, 2005). This is in contrast with sexual abuse, for which there is almost complete consensus that a single incident of sex with a child indicates sexual abuse. For neglect, however, if only a single incident of neglectful behavior occurs, there is a tendency to use a label, such as a neglectful event rather than label the parent as neglectful. This may be a way of avoiding applying the label of neglectful to the large number of parents who engage in an occasional neglectful behavior.

The MNBS-AS permits operationalizing the idea that neglectful behavior should be measured in a way that takes into account whether there is a pattern of neglectful behavior that goes beyond a single incident. This was done by presenting data on the percent of students who experienced three or more of the neglectful behaviors.

#### *Measures of violence against a dating partner*

*The CTS2.* Physical assault and injury inflicted on a dating partner were measured by the revised Conflict Tactics Scales or CTS2 (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The original CTS has been used in more than 400 studies over the past 25 years and has demonstrated reliability and validity (Archer, 1999; Straus, 1990). The alpha coefficients of reliability (for male and female students, respectively) for students in this study are physical assault: .93, .86; injury: .92 (Straus, 2004).

Examples of minor and a severe assault items are “I threw something at my partner that could hurt.” and “I punched or hit my partner with something that could hurt.” Examples of minor and serious injury items are “My partner had a sprain, bruise, or small cut because of a fight with me,” and “My partner had a broken bone from a fight with me.” The CTS can be scored in a number of ways (Straus et al., 1996). For this article, the assault and injury scores were dichotomized to create a prevalence score, where 1 indicates that the student had perpetrated one or more of the acts in the scale and 0 indicates no occurrence of any of the behaviors in the scale. Results using this measure show the proportion of students who physically attacked or injured a dating partner in the past year.

#### *Control variables*

All analyses controlled for three variables: the gender of the student (coded one for males and two for females), whether the student tended to avoid reporting socially undesirable behavior, and the socioeconomic status of the student’s parents.

*Social Desirability Scale.* Research that uses self-reported data needs to take into account the tendency of some respondents to minimize socially undesirable behavior. This study used the Limited Disclosure Scale of the Personal And Relationships Profile (Straus & Mouradian, 1999). This is a 13-item scale adapted from Reynolds’ short form of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982). The scale measures the degree to which a respondent tends to avoid disclosing undesirable behavior. The items in the scale consist of behaviors that are undesirable but true of almost everyone, such as “I sometimes feel resentful when I don’t get my way.” Consequently, the more of these items a respondent

denies, the more likely the respondent is to also deny more seriously undesirable information, such as assaulting a partner and other forms of crime. The theoretical range of the Social Desirability Scale is from 13 to 52. For this sample, the scores ranged from 18 to 52, with a mean of 34.2 and a *SD* of 4.8. The alpha coefficient of reliability for this sample is .70 (.67 for male students and .71 for female students). Because differences between cultural groups in self-reports of violence against a partner might be a reflection of differences in willingness to report such behavior, the analyses controlled for the score on the Limited Disclosure Scale.

*Socioeconomic Status Scale.* Neglect co-occurs with low socioeconomic status. Consequently, a scale to measure socioeconomic status was used as a control variable. This scale is the sum of three items: the number of years of education completed by the student's father and mother and family income. For each university, these three variables were transformed to *Z* scores and summed. The sum was transformed to a *Z* score. This approach to measuring SES provides a score that has the same interpretation at all sites regardless of variations in the educational system or the wealth or poverty of the nation. Specifically, the scores indicate the number of standard deviations above or below the mean of the families of all students in the sample at their university.

*Physical maltreatment.* Neglect also tends to co-occur with physical maltreatment. To control for this possible source of a spurious relationship, all analyses controlled for physical maltreatment. This was possible because two items from the Violent Socialization Scale of the Personal And Relationships Profile (Straus et al., 1999; Straus & Mouradian, 1999) refer to childhood physical maltreatment: "When I was less than 12 years old, I was spanked or hit a lot by my mother or father," and "When I was a teenager, I was hit a lot by my mother or father." The response categories were strongly disagree = 1, disagree = 2, agree = 3, strongly agree = 4.

### *Data analysis*

Because the objective of this article is to evaluate the MNBS short form, the first part of Results section provides descriptive statistics on sensitivity (the ability of an instrument to detect the phenomenon it is intended to measure). This will be done by presenting data on the prevalence of neglectful behavior experienced, including a pervasive pattern of neglectful behavior as measured by having experienced three or more of the eight neglectful behaviors in the scale.

The next section presents alpha coefficients of internal consistency reliability of the scale, overall and separately for male and female students, and for each of the 38 university samples.

Finally, construct validity was investigated. Construct validity evidence consists of the correlation or other measure of association of the measure being evaluated with variables that are known to be related to the construct purportedly measured by the instrument being evaluated, or for which there are theoretical grounds for expecting it to be correlated (Campbell & Fiske, 1959). Correlations, which fit the expected pattern contribute evidence of construct validity. The construct validity analysis to be presented is based on the theory and empirical evidence showing that neglected children have an increased probability of aggressive and antisocial behavior compared to other children and as adults. A brief summary of that literature was presented in Introduction and led to the hypothesis that experiencing neglectful behavior by parents is associated with an increased probability of violence against a dating partner. This hypothesis was tested at the individual-level using data on the 7139 students as the cases, and at the macrolevel using data

on the 33 university sites as the cases. The analyses controlled for scores on the Social Desirability Scale, a Socioeconomic Status Scale, gender of the student, and the two questions on physical maltreatment.

The macrolevel analysis used partial correlation to investigate whether universities that have higher neglectful behavior rates also have higher rates of assaulting and injuring a dating partner. For this analysis, the cases are the universities, and the variables are the rates of neglectful behavior and the rates of violence against a dating partner of each university. Because the sites varied greatly in the percent of students who are female, and because that percentage can affect the campus social climate, the partial correlation analysis controlled for the percent female in the sample for each site, and also for the mean Social Desirability Scale score for each site. Because neglect often co-occurs with physical abuse, the analyses controlled for the percentage of students in each site who reported having been hit a lot as a child and as a teen-ager.

## Results

### *Prevalence of neglectful behavior*

*Specific neglectful behaviors.* For each of the eight neglectful behaviors in the scale, Table 2 gives the percent of the sample who agreed or strongly agreed that they had experienced the behavior. The most frequent neglectful behavior was not helping with homework, which was reported by 29% of the students. The data in sites columns of Table 2 show that there were very large differences between sites in percentage of parents who did not help with homework. It ranged from 10% to 73%. Although the reliability analysis found that this item was correlated with the overall MNBS-AS score, the high percentage at some sites may have occurred because helping with homework may not be regarded as legitimate by some parents and may not be possible for other parents, especially parents with little education.

The least frequently occurring of the eight neglectful behaviors was not caring if the child got into trouble in school. Although this was reported by 5% of the students, there were the usual large differences between sites (range from 2% to 19%).

The item “Did not make sure I went to school” had the largest differences between sites. The range was from one percent to 85%. The site with 85% is Pusan, Korea. Investigation of this item suggests that it is not valid for use in Korea and Hong Kong. The Korean consortium member suggested a cultural difference, which may account for the small percent of students who reported that their parents made sure they went to school. Education is so important and so highly valued in Korea that it is assumed that parents do not need to make sure a child goes to school. For the same reason, agreeing with this item may have been interpreted by the respondents as implying that the parent does not trust the child. For either or both of these reasons, few students said that their parents made sure they went to school. Because of this problem, the Supervisory Neglect items have been revised to replace this item with “My parents did not care if I did things like shoplifting.”

Because of questions about the validity of the item making sure the child goes to school, a methodological analysis was conducted to examine the effect of omitting this item. The expectation was that by using this seven-item version of the scale, Korea and Hong Kong would no longer rank the highest in neglectful behavior. But this expectation was not supported. Even without the questionable item, Korea and Hong Kong continued to show the highest percentages of neglectful behavior. Consistent with this, the correlation between the eight- and seven-item neglectful behavior scale scores was .93. Although this

Table 3  
Percentage distribution of MNBS-AS Scale scores by gender

Scale score <sup>a</sup>	Total	Males	Females
0	50.2	43.2	52.9
1	25.4	27.4	24.6
2	11.9	13.8	11.2
3	6.6	8.5	5.9
4	3.6	4.2	3.3
5	1.4	1.8	1.3
6	.7	1.0	.6
7	.2	.2	.2
8	.0	.0	.0

<sup>a</sup> The scale scores indicate the number of neglectful behaviors reported. Gender difference Chi-square = 63.47,  $df = 16$ ,  $p < .001$ .

suggests that the high rates of neglectful behavior within Korea and Hong Kong are likely to reflect the actual behavior of parents of the students in those settings, the plausibility of that conclusion needs to be evaluated by persons familiar with Chinese and Korean culture. For purposes of this article, it was decided to continue with the full eight-item scale. On the other hand, for future use, the MNBS-AS has been revised to deal with this and a related problem. See [Appendix A](#) for further information on the revised scale.

*Number of neglectful behaviors experienced.* [Table 3](#) shows that about half of the students did not experience any of the eight neglectful behaviors. About a quarter experienced one of them, and an additional 12% reported two of the eight. If, as was suggested in the Methods section, three or more neglectful behaviors indicate a pervasive pattern of neglect, then [Table 3](#) shows that 12.5% of the students were in this category.

Significantly more males than females experienced one or more neglectful behaviors. The main gender difference is in the percent who fell in the more pervasive pattern as indicated by three or more neglectful behaviors.

*Differences between university sites in prevalence of neglect.* [Table 4](#) gives the percent of students at each university who experienced three or more of the eight neglectful behaviors. The sites are arrayed in rank order. The underlined number in the total column shows a median of 12.2% of the students who reported three or more of the neglectful behaviors. The range of scores was extremely large—from a low of 3.1% to more than 10 times greater (36.4%).

There are several American universities in this study, and [Table 4](#) shows important differences between them. This is consistent with the discussion of the sample, which cautioned that one university cannot be taken to represent all universities in a nation, and especially a diverse nation, such as the United States.

#### *Reliability of the MNBS-AS*

*Gender difference for individual students.* The alpha coefficient of reliability for the 7179 students was .72. When the alpha coefficients were computed separately for the 2053 males and 5126 females in the

Table 4  
Percent of students who experienced three or more of the eight neglectful behaviors in the MNBS-AS

University site	Total	Male	Female
Korea-Pusan	36.4	28.1	41.2
Honk Kong	28.6	25.3	30.8
Canada-London	21.4	22.7	20.3
Singapore	19.4	23.0	17.7
Canada-Toronto	16.7	15.2	17.6
U.S.A.-Mississippi	16.4	17.9	16.3
Germany-Freiburg	15.4	11.1	18.6
U.S.A.-Louisiana	15.4	17.6	13.9
Mexico-Northern City	15.0	21.3	13.5
U.S.A.-Texas-NonMexican	15.0	24.3	9.5
Israel-Emekzyrl	13.8	17.4	12.9
U.S.A.-Texas-Nacogdoches	13.6	10.1	15.5
Brazil-Sao Paulo	13.4	19.1	10.4
U.S.A.-Texas-Mexican American	13.2	20.2	10.5
U.S.A.-Cincinnati	12.8	17.5	7.7
Canada-Winnipeg	12.7	19.0	11.8
Australia-Adelaide	12.2	9.6	12.8
Hamilton-Hamilton	12.0	11.9	12.0
Belgium-Flemish	11.5	16.7	9.9
Portugal-Braga	11.0	12.2	9.1
U.S.A.-Indiana	11.0	14.6	9.4
U.S.A.-Utah	11.0	16.7	7.6
India-Pune	10.5	11.5	9.8
U.S.A.-Washington, DC	10.5	21.4	8.6
UK-Scotland	10.4	7.7	10.9
Netherlands-Amsterdam	10.3	12.2	9.6
Canada-Quebec	10.0	12.3	9.4
New Zealand-Christchurch	9.0	10.0	8.7
Switzerland-French speakers	8.7	13.7	6.2
Switzerland-German speakers	8.5	6.3	9.5
U.S.A.-New Hampshire sample 2	6.7	12.8	4.7
U.S.A.-Pennsylvania small college	5.1	6.2	4.8
U.S.A.-New Hampshire sample 1	3.2	5.2	2.4

R: Total male = .76, total female = .97, male–female = .600.

sample the coefficient for the males was .71 and for the females .72. All of these coefficients are just above the convention, which sets an alpha of .70 as meeting an adequate level of internal consistency reliability.

*Differences between university sites.* Although the overall alpha coefficient of reliability meets the convention of .70 as an adequate level of reliability, 39% of the alpha coefficients were below .70. On the other hand, all but one of those are in the .60–.69 range. If the nations where the universities are located are divided into predominantly Anglo-cultures (U.S.A., Canada, Australia, New Zealand, and Scotland) and other cultures, the universities in the predominantly Anglo cultures nations have a slightly higher

average reliability (mean of .76) than in the nonAnglo national settings (mean of .72). The nonEuropean cultures have somewhat lower alpha coefficients (Asia and Middle East = .67, Latin America = .66). The fact that the alpha coefficients are close to the convention of .70, even in the societies that are most culturally different than the society in which this instrument was designed is encouraging.

### *Validity*

*Control for confounding with social desirability response bias.* The possibility that the differences between sites in MNBS-AS scores are an artifact of confounding with willingness to disclose socially undesirable behavior was tested by computing the correlation of the Limited Disclosure Scale with the MNBS-AS for each of the 33 university sites. The Social Desirability Scale scores are quite similar across all the sites: the mean for all the students in the study was 33.9, and the mean score for each site ranged from 31.7 to 37.0.

There was also site-to-site similarity in the correlation of the Social Desirability Scale with the Neglectful Behavior Scale. The mean correlation, as expected was negative ( $-.10$ , range =  $.00$  to  $-.20$ ). The negative correlations show that the higher the Social Desirability Scale score, the lower the MNBS-AS, indicating that the Social Desirability Scale is operating as intended. However, these correlations are not high enough to be an important threat to validity. Nevertheless, the correlations in Construct validity section controlled for score on the Social Desirability Scale.

*Construct validity.* Construct validity is a judgment based on the accumulation of evidence from numerous studies using the instrument being evaluated. For this reason, the analyses in this section are best viewed as examples of results that must continue to found in order to conclude that the MNBS-AS has cross-cultural construct validity.

As pointed out in the introduction to this article, both previous empirical research and the theoretical analysis of Tremblay provide a basis for expecting that a valid measure of having experienced neglectful behavior should be related to aggressive behavior as a child and to violence against a marital or dating partner as an adult. Consequently, if the MNBS is a valid measure of neglectful behavior experienced, the scores will be associated with physical aggression toward others, including dating partners. However, because neglect co-occurs with other forms of maltreatment and with socioeconomic status, these variables must be controlled in order to conclude that experiencing neglectful behavior per se is associated with violence against a dating partner.

### *Neglectful experience and assault and injury of dating partners*

*Individual student data.* The hypothesized tendency for neglect to be associated with violence against a dating partner was tested by a  $2 \times 5$  analyses of covariance (male vs. female, and five MNBS score groups, as shown in Figure 1). The covariates in these analyses controlled for scores on the Social Desirability Scale, the socioeconomic status of the student's family relative to other students at their site, and whether the student reported having been hit a lot by his or her parents when a child and as a teen-ager. Figure 1 shows results that are consistent with the hypothesis for both male and female students, that is, the more neglect experienced, the greater the percent who physically assaulted a partner in the previous 12-month period. Figure 1 also shows that women students had a higher rate of physically attacking a dating partner. This is consistent with more than two hundred studies of violence against partners which show that the

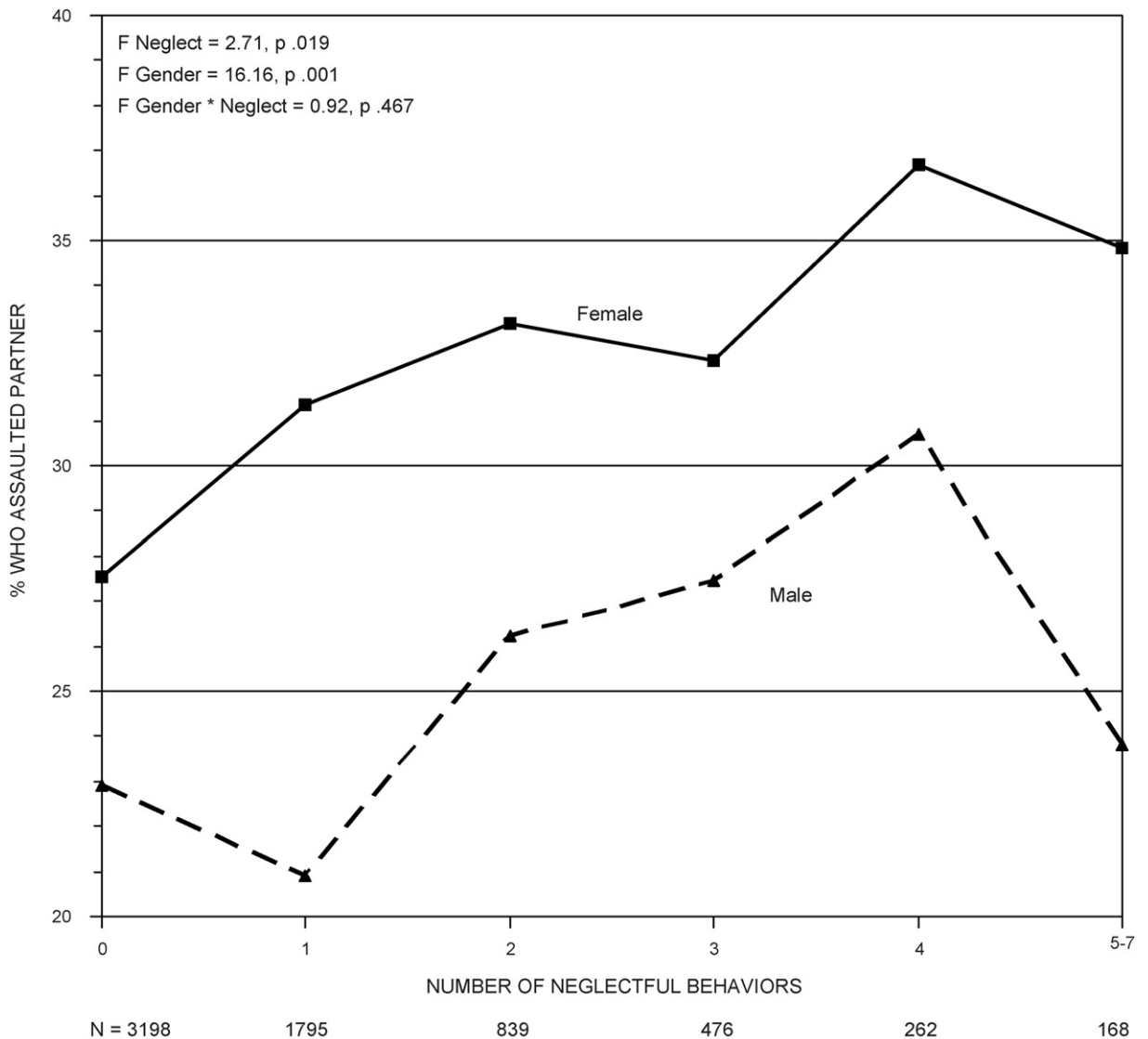


Figure 1. The more neglect, the greater the probability of assaulting a dating partner.

rate for perpetration by women is as high or higher than the rate of partner violence by men (Archer, 2000; Fiebert, 2004; Straus, 2005; Sugarman & Hotaling, 1989). In addition, the relationship is more linear for female students, but the difference was not great enough to produce a significant interaction with gender.

Most of the violent acts in the scale used for Figure 1 are relatively minor, such as slapping or shoving a partner. The question of whether a history of neglect is also related to more severe attacks, such as punching and kicking was investigated using the Severe Assault subscale of the CTS2.

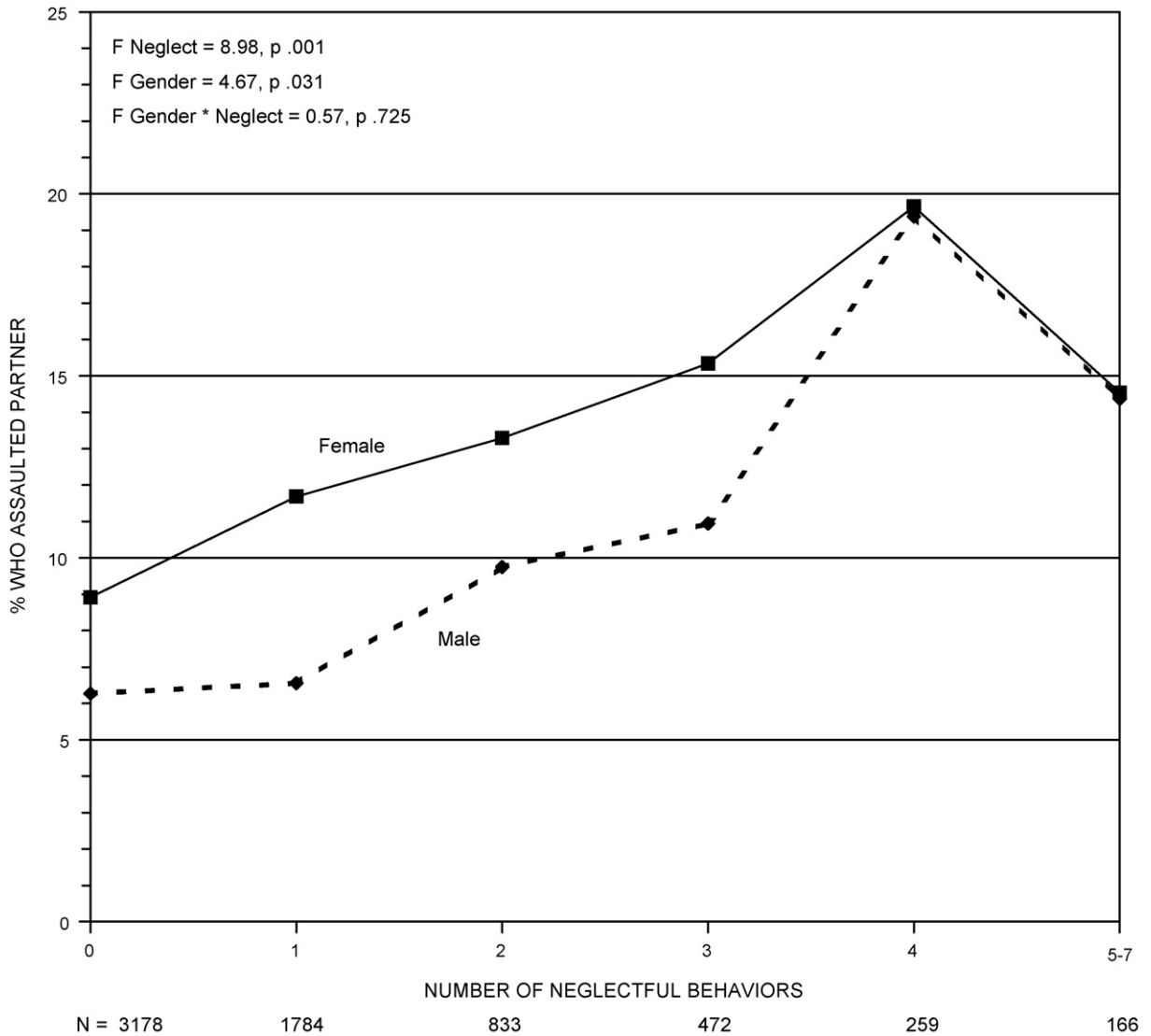


Figure 2. The more neglect, the greater the probability of severely assaulting a dating partner.

Figure 2 shows that neglect as measured by the MNBS-AS is also associated with severe attacks on a dating partner. The parallel plot lines for male and female students show that the experience of neglect had essentially the same relation to perpetrating severe assaults for the male and female students.

Figure 3 shows that neglect is associated with inflicting physical injury on a dating partner. This figure reports on any injury, regardless of severity. Most of the injuries were relatively minor, such as a visible bruise. The relationship of neglect to injury is closer for male students, but the difference is not larger enough to produce a significant interaction. However, when the analysis was repeated using

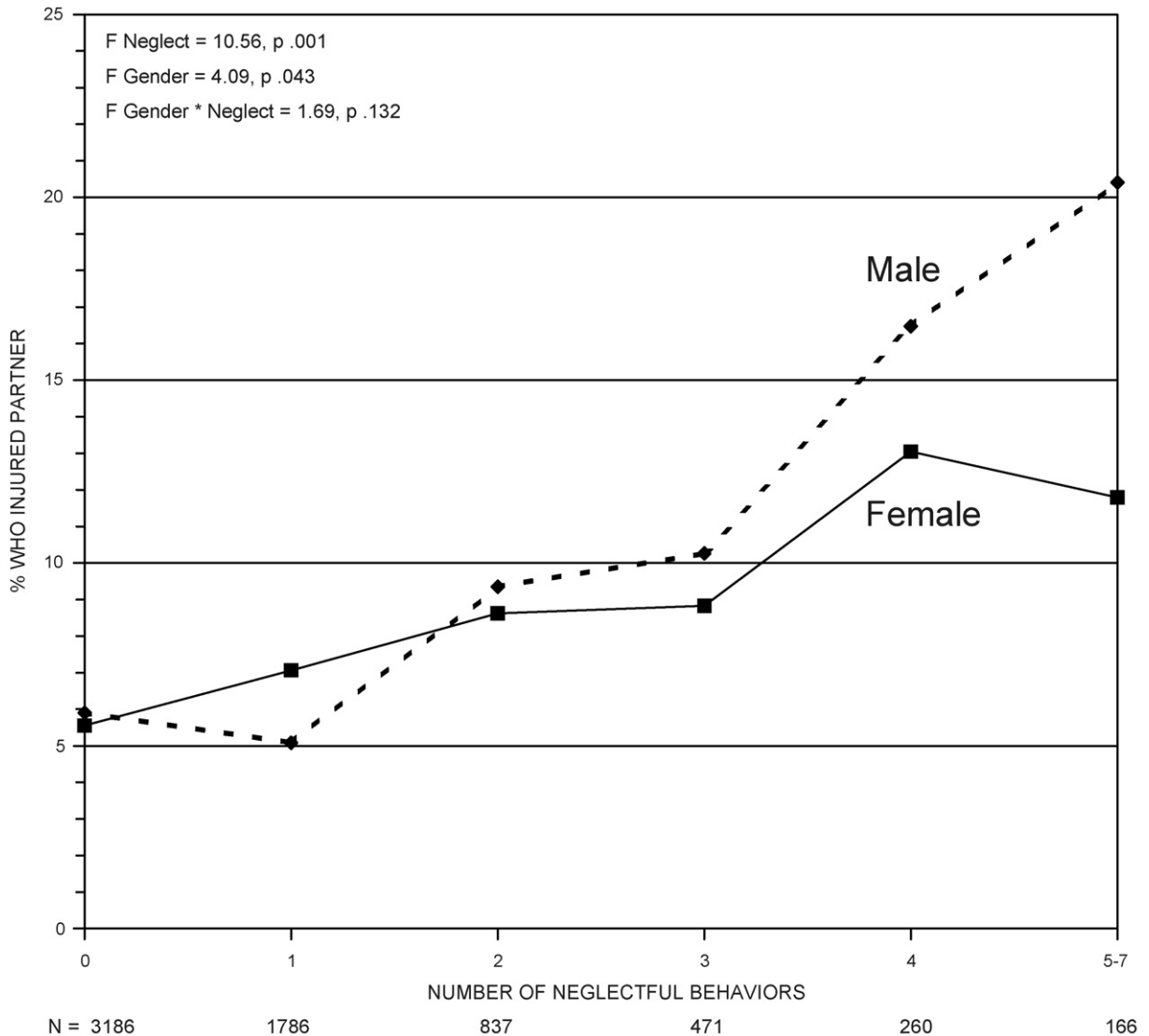


Figure 3. The more neglect, the greater the probability of injuring a dating partner.

the Severe Injury subscale of the CTS2, Figure 4 shows a significant interaction of neglect with gender of the student. For male students, neglect was strongly related to severe injury, whereas for female students, there was virtually no relationship between neglect and inflicting severe injury on a dating partner.

*Site data.* Because the focus of this article is on cross-cultural reliability and validity, it is important to test the hypothesized relation between neglectful behavior by parents and violence against a dating partner at the macrolevel of analysis. The results supported the hypothesis. The partial correlations between score on

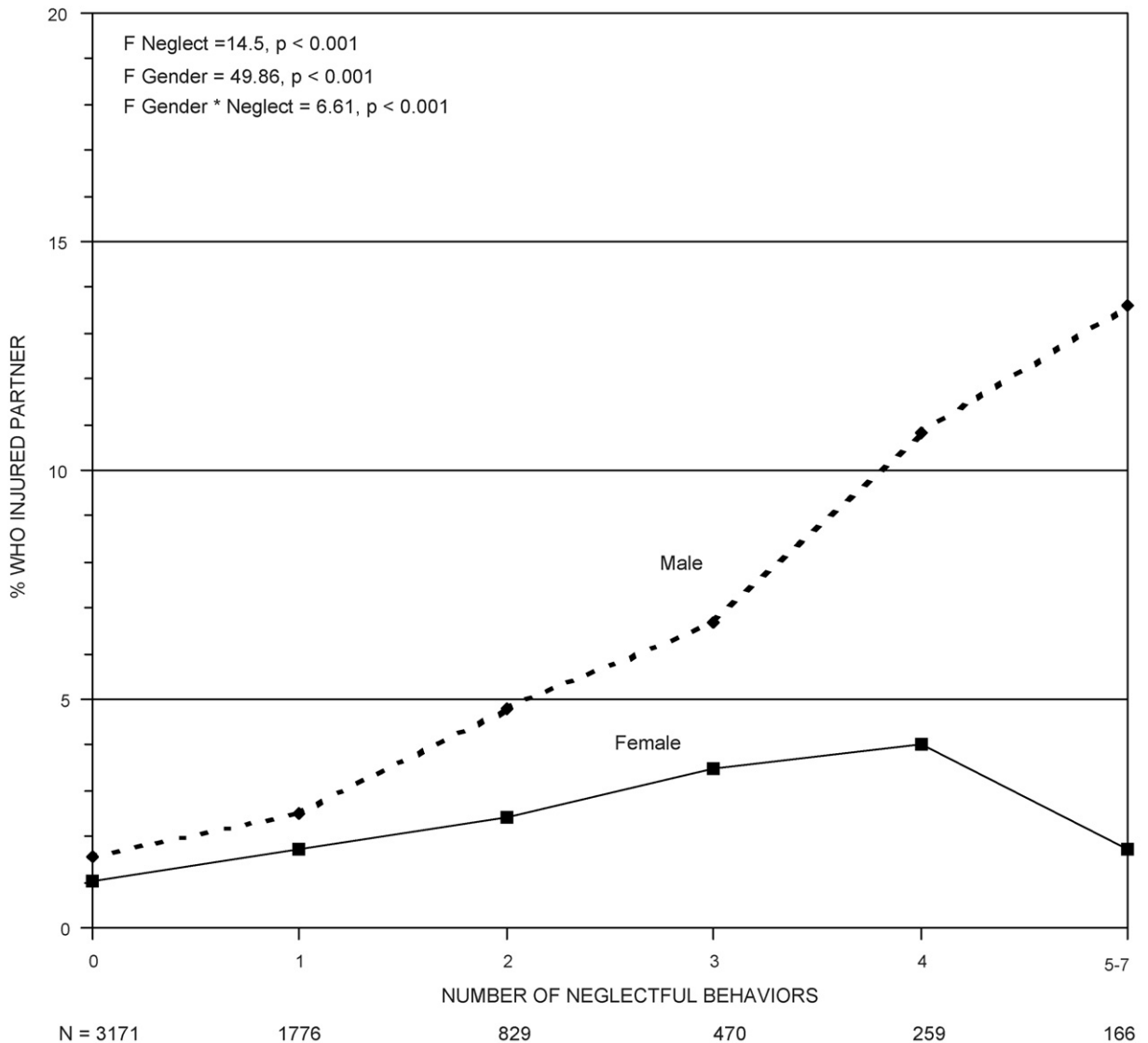


Figure 4. The more neglect, the greater the probability of *male* students severely injuring a dating partner.

the MNBS-AS and the measure of violence against a dating partner were: physical assault = .19 ( $p = .057$ ), severe physical assault = .40 ( $p = .001$ ), injury = .28 ( $p = .008$ ), and severe injury = .27 ( $p = .013$ ).

### Discussion

This study investigated the extent to which the short form of the adult recall version of the Multidimensional Neglectful Behavior Scale (MNBS-AS) is reliable and valid in the diverse cultural

settings of 33 universities in 17 countries. The data are from questionnaires completed by 7179 students.

### *Reliability and sensitivity*

Twenty of the 33 alpha coefficients of internal consistency reliability were .70 or higher. All but one of the others were between .60 and .69. These coefficients are lower than .93 found for the full-length MNBS 93 (Straus et al., 1995). The brevity of the short form scale (eight-item) probably explains the lower alpha coefficients because it is inherent in the computation of alpha for fewer items produce a lower coefficient, even when the level of internal consistency (measured by the mean interitem correlation) remains the same.

The ability of the MNBS-AS to detect neglectful behavior by parents is indicated by the fact that 12% of the students in this study reported experiencing three or more neglectful behaviors by their parents. The ability of the MNBS-AS to identify differences in the prevalence of neglectful behavior is indicated in Table 4, which shows that the percent who reported neglectful behavior was twelve times greater in the highest than the lowest ranking site (36% vs. 3%). This suggests that the short form of the MNBS-AS scale has adequate sensitivity to identify cases of neglectful behavior in different cultural contexts.

### *Validity*

Two aspects of validity were investigated. The first aspect is whether the differences between students and between universities in the prevalence of neglectful behavior are artifacts of differences in willingness to disclose neglectful behavior. Only low correlations were found between the MNBS and a scale to measure reluctance to report socially undesirable behavior. Nevertheless, all analyses where it was relevant, controlled for scores on the Social Desirability Scale and gender of respondent, thus making it unlikely that the differences in neglectful behavior reported reflect student-to-student or university-to-university differences in willingness of students to disclose socially undesirable behavior.

Second, construct validity was investigated by analyses of covariance and partial correlation. These analyses controlled for gender, score on the Social Desirability Scale, socioeconomic status, and for the co-occurrence of physical maltreatment. The results for individual students show that the more neglect experienced, the higher the probability of assaulting and injuring a dating partner. The results of the macrolevel analysis of the 33 sites show that the larger the percent of students at a university who experienced neglect as a child, the higher the percent of students who physically assaulted and injured a dating partner. Confidence in these results is increased because they are consistent with the results of another analyses of the same data but using multilevel modeling, which is a mode of analysis specifically intended to examine macrolevel relationships (Straus & Savage, 2005).

### *Limitations*

An important limitation is that the results refer to the behavior of university students and their parents and may not apply to the general population, and especially not to the low income and low education sectors of the population where, at least in Euro American societies, rates of neglect and of partner-violence are highest (Gelles & Straus, 1988; Straus, Gelles, & Steinmetz, 2006 [1980]).

Another limitation is that the version of the MNBS-AS used for this study included two items that have since been replaced by presumably more appropriate items. The effect of this replacement could not be examined for the sample used for this article. However, it was possible to examine empirically the effect of this change using another U.S.A. sample. Using that sample, the revised scale was found to correspond very closely with the scale used for this article ( $r = .97$ ).

The results of the construct validity analyses, like results from almost all survey research, could reflect shared method variance (Campbell & Fiske, 1959) stemming from the fact that both the independent and dependent variables are based on information the survey participants were willing or able to provide. This study controlled for the score on a Social Desirability Scale, which is a step beyond what is done in most survey research, and doing so may have mitigated this threat to validity. However, that is not a substitute for truly independent measures of the variables.

Because this is a cross-cultural study, the results depend on the accuracy of the translation and there has been no independent review of the quality of translations. Even assuming the accuracy of the translation, there is the possibility that behaviors that are considered neglectful in the USA may not be conceptually equivalent in other cultural contexts (Straus, 1969).

Finally, additional forms of reliability and validity evidence are needed; including test retest reliability and concurrent validity evidence.

## Conclusions

Keeping these limitations in mind, the results suggest the following conclusions. First, a substantial percentage of university students have experienced a pervasive pattern of neglectful behavior by their parents. These high rates also indicate that the MNBS-AS has sufficient sensitivity to be useful for research on neglect. Second, the construct validity of the MNBS is indicated by the results showing that experiencing neglectful behavior by parents is related to an increased probability of violence against a dating partner as a young adult, regardless of whether there was also physical maltreatment. Moreover, this relationship was found at both the macrolevel and the individual-level. Third, the association of neglect with injury can be taken as evidence that experiencing neglectful parenting as a child is associated with more than trivial violence in a dating relationship, even among a relatively high functioning population, such as university students. Fourth, because of the multivariate statistical analyses, the relationship between neglectful parental behavior and later violence indicates that there is a net effect for neglectful behavior that not attributable to overlap with co-occurring physical abuse, or differences in willingness to disclose socially undesirable behavior, gender, or socioeconomic status. Finally, the combination of the evidence of reliability and validity from previous studies using the MNBS and the cross-national evidence in this article, together with a testing time of only 1 or 2 min, suggest that MNBS-AS could be useful for community epidemiologic research on neglect, and as a clinical screening tool to provide preliminary identification of cases of neglect.

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## Résumé

**Objectif :** Fournir des données sur la fiabilité culturelle de l'instrument *Adult Recall Short Form of the Multidimensional Neglectful Behavior Scale* (échelle mesurant la capacité des adultes de se rappeler plusieurs aspects de la négligence). L'étude s'est aussi attardée sur des preuves de la validité de l'instrument, lequel comprend quatre aspects de la négligence: cognitif, émotionnel, physique, et le manque de surveillance accordée à l'enfant.

**Méthode :** Les données ont été collectées au moyen de questionnaires qu'ont complétés 7.179 étudiants dans 33 universités situées dans 17 pays.

**Résultats :** Le coefficient alpha pour la cohérence interne est de .72 pour l'échantillon dans son ensemble. Site par site, le coefficient varie: .55 pour un des sites; de .60 à .69 pour 12 sites; et .70+ pour 20 sites. La validité de l'instrument s'illustre par le fait que des réponses fournies parce qu'elles sont considérées «acceptables» sont rares dans les 33 contextes culturels relevés dans l'étude et aussi par le fait que les résultats d'une analyse qui a contrôlé le facteur maltraitance physique a trouvé que les étudiants victimes

de négligence en enfance étaient plus aptes que d'autres étudiants à avoir agressé physiquement une personne avec qui ils avaient eu des fréquentations dans les 21 mois précédents.

**Conclusions :** Bien que les résultats reposent sur un échantillon de personnes de statut privilégié, ils révèlent un taux élevé de négligence et sont suffisamment prometteurs pour encourager le recours à l'instrument à l'étude dans une variété de contextes culturels.

## Resumen

**Objetivo:** Proporcionar datos sobre la fiabilidad trans-cultural y la validez ilustrativa de la "Versión breve de Recuerdos Adultos" de la Escala Multidimensional de Conducta Negligente (MNBS). La MNBS incluye ítems sobre cuatro aspectos de la conducta negligente: cognitiva, emocional, física y de supervisión.

**Método:** Los datos fueron obtenidos a través de cuestionarios cumplimentados por una muestra de conveniencia de 7179 estudiantes de 33 universidades en 17 países.

**Resultados:** El coeficiente alpha de consistencia interna para la muestra completa fue de .72. Por países, los coeficientes oscilaron desde un .55 para un país, un rango de .60 a .69 para 12 países y 20 países con un alpha de más de .70. La validez de la escala fue indicada por su baja confusión con los bloques de respuestas de alta deseabilidad social en cada uno de los 33 contextos culturales y por los resultados de los análisis de validez de constructo. Estos análisis señalaron, una vez controlado el maltrato físico, que los estudiantes que fueron víctimas de conducta negligente cuando eran niños tuvieron más posibilidades que otros estudiantes de haber agredido físicamente a su pareja en los 12 meses previos.

**Conclusiones:** A pesar de que los resultados provienen de una muestra relativamente privilegiada, revelan tasas altas de conducta negligente y son suficientemente prometedores para animar a la utilización de la Versión Breve de Recuerdos Adultos de MNBS en una variedad de ambientes culturales.

## Appendix A

### *A.1. Revised Short Form A of the Multidimensional Neglectful Behavior Scale*

The purpose of this appendix is to provide an improved version of the scale used in this article and to document the empirical basis for the replacement. The improvement consists of replacing the two questionable items flagged in [Table 2](#) with the replacements given in the footnote to [Table 2](#).

As explained in the article, the cross-cultural validity of the question "Made sure I went to school" was questioned because of unrealistically high prevalence in cultural settings where a high prevalence does not seem plausible. Consequently, the revised scale replaces this with another item from the full-length scale of Supervisory Neglect: "Did not care if I did things like shoplifting." This item has almost the same factor loadings as the item it replaces (see [Table 1](#) in [Straus et al., 1995](#)).

The item "Did not help me with my schoolwork" posed a similar but not as extreme problem. For this reason, and also to reduce the number of items that involve the educational system, it was replaced by "Helped me when I had trouble understanding something" as an indicator of cognitive neglect. Again, the factor loading of the replacement item was very close to that of the item it replaced.

### A.2. *Comparison of original and revised MNBS-AS*

The data from this study do not permit empirically testing the appropriateness of replacing these two items because the two replacement questions were not in the International Dating Violence Study questionnaire. However, it was possible to go back to the sample of 349 American students who were tested using all 20 items of the full MNBS-A. Their scores on the short form were recomputed using the two replacements. The correlation between the short form as used in the International Dating Violence Study and the short form with the two replacement items was computed. The correlation was extremely high ( $r = .97$ ), partly because six of the eight items are the same in the two versions of the scale, and because the items used to replace the two cross-culturally questionable items have almost the same factor loadings as the items they replace. With a correlation this high, research using the revised scale is almost certain to produce substantially the same results in the U.S.A. as the original short form. In principle, the revised short form should be superior to the original when used in societies where the two replaced items were not appropriate.

### A.3. *Response categories and referent period*

The response categories for the MNBS-A can be those used for the research in this article (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). When these response categories are used, the subjects can respond about the behavior of the parent or other caretaker for any period in which they lived with them. However, for some applications it may be better to ask respondents to provide information about a specific age and a specific time period. For example, if the scale is used to obtain data from adolescents living at home, it would be desirable to use frequency of occurrence response categories, such as those in the Conflict Tactics Scales (Straus et al., 1996) or the Dimensions of Discipline Inventory (Straus & Fauchier, 2006) for a designated time period, such as in the past year, past 6 months, or past month (Straus et al., 1995, 1996).