Extension of the Sexual Abuse Questionnaire to Other Abuse Categories: The Initial Psychometric Validation of the Binghamton Childhood Abuse Screen

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ABSTRACT. Study I represents a follow-up to a recently published study dealing with the initial development of the Sexual Abuse Questionnaire (SAQ). The SAQ was designed to be used to identify individuals experiencing psychological distress resulting from a history of childhood sexual abuse. Using a new data set (N=2,806), this study utilized item analyses, exploratory factor analyses, and Receiver Operating Characteristics Curves to replicate and expand upon the initial psychometric properties of the SAQ, and to examine the sensitivity of the SAQ to other abuse categories. Findings from Study I indicated that the SAQ

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was sensitive to other abuse categories and in need of revision. Study II, using a new data set (N = 1,454). provided the initial psychometric evaluation of the newly constructed Binghamton Childhood Abuse Screen (BCAS). doi:10.1300/J070v16n01_06 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <http://www.HaworthPress.com> © 2007 by The Haworth Press, Inc. All rights reserved.]

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The association between long-term psychological problems and childhood sexual and physical abuse has been well documented (Malinosky-Rummel & Hansen, 1993; Polusny & Follette, 1995). However, the self-report instruments used to measure abuse effects have often been borrowed from other areas and generically applied in the assessment of sexual and physical abuse victims. In response to the need for abuse-specific measures, a number of instruments have been developed that assess childhood maltreatment history and/or the symptomatology specifically related to sexual and/or physical abuse histories (Briere, 1997; Briere et al., 1995). The few measures that specifically evaluate the circumstances of abuse vary in their assessment of the occurrence of different types of abuse and the amount of abuse experienced (e.g., Assessing Environments III, Form SD: Rausch & Knutson, 1991; Childhood Trauma Questionnaire: Bernstein et al., 1994; Child Maltreatment Interview Schedule: Briere, 1992a; Traumatic Events Scale: Briere, 1997; Elliot, 1992). While these measures show promise in providing a structured description of childhood abuse histories, they all rely on the endorsement of items that explicitly describe or relate to abusive events and, therefore, overlook some serious challenges in assessing childhood abuse, including client reluctance to report histories of abuse (Briere, 1992a; Martin et al., 1993; Russell, 1986), amnesia for abuse (Briere & Conte, 1991; Herman & Schatzow, 1987; Williams, 1994), or malingering (Briere, 1992b, 1997).

Given the above concerns, the complexity of most abusedpatients' defense structures, and the intense fear associated with the initial disclosure of abuse, reliance solely on the patient's self-report or responses to a face valid questionnaire may prove to be misleading. Since many practitioners

have limited experience in detecting whether a response of "no history of abuse" is accurate, the development of a valid and reliable screening measure designed to alert physicians and other practitioners to the need for a further evaluation would be useful.

The Sexual Abuse Questionnaire (SAQ) was developed in an attempt to achieve this objective (Lock, Levis, & Rourke, 2005). It was constructed from clinical treatment experience with patients with a history of childhood sexual abuse. The SAQ consists of 45 (true/false) questions comprising a number of non-face valid questions combined with items designed to detect the presence of symptom correlates and sequelae associated with a history of childhood sexual abuse (CSA). This newly developed screening measure has been shown to possess good test-retest reliability and internal consistency and has established both convergent and discriminative validity. It was found to possess a single factor (sexual abuse) and was able to correctly classify 96% of the male sample (73% of the sexually abused participants and 97% of the non-abused sample) using a cutting score of 19. For women, the SAQ correctly classified 70% of the sample (66% of the abused participants and 70% of the non-abused participants).

Although the above SAQ findings show promise, it is recognized that the goal of firmly establishing the utility of any new measure requires a comprehensive longitudinal research commitment. For example, with respect to the SAQ, these initially reported findings need to be replicated with a new sample. In addition, item content may require revision if the predictive power of the test is to be improved. For example, the SAQ question, "I have never been depressed for long periods of time" may not be specifically linked to childhood sexual abuse. While depression may be among the many sequelae of abuse, it is also commonly reported by many individuals with no such history (Brown & Harris, 1989). The inclusion of items like this one increases the risk of falsely identifying individuals as suffering from sequelae associated with abuse when, in fact, their distress may be a result of other factors.

Although the initial data reported for the development of the SAQ was only recently published, the study was completed a number of years prior to the publication (Lock, 1997). Since that time, a new data set has been collected to address the issues raised earlier and other psychometric concerns. This new data set was used to conduct Study I, which was designed to achieve three objectives. The first was to confirm the reliability, internal consistency, and convergent validity of the SAQ with a new sample. The second objective, which was stimulated by the findings of Krantweiss (2001) who found the SAQ may also be sensitive to

detecting the presence of childhood physical abuse (CPA), was to assess the ability of the SAQ to detect abuse in other abuse subcategories. The third objective was to extend the psychometric properties of the SAQ through the use of more sophisticated statistical techniques than those adopted in the initial publication. The techniques employed in the present study included the inclusion of an exploratory factor analysis (Gorsuch, 1974) and the use of Receiver Operating Characteristic (ROC) Curves (see Swets, 1986; Weathers et al., 1997). ROC curves provide indices of item sensitivity (percent of true positives) and specificity (percent of true negatives) for all possible cut-off scores, which, in turn, provides an index of overall sensitivity and specificity, as well as sensitivity and specificity indices for a range of cut-off scores. The use of these statistical tools aided in the revision of the SAQ, thereby enhancing its specificity, sensitivity, and utility in detecting childhood physical and sexual abuse sequelae.

STUDY I

Method

Participants

Participants initially consisted of a pool of 3,505 undergraduate students from Introductory Psychology courses who participated in group testing sessions conducted over seven consecutive semesters from Fall 1999 to Spring 2002. Participants were eliminated from the study if their data set contained less than 95% of the data (Tabachnick & Fidell, 2001; $n = 478$) and/or if they failed to complete our criterion measure for establishing the presence or absence of a history of childhood abuse ($n = 221$). This reduced our sample size to 2,806 cases (1,769 female and 1,037 male participants).

Instruments

For the remaining 2,806 participants, the following four instruments were administered at varying points during the group testing assessment periods: The Traumatic Symptom Checklist (TSC-40; Elliott & Briere, 1992), a 40-item checklist assessing the impact of trauma, particularly the long-term effects of CSA ($n = 1{,}295$); the MMPI-II PTSD subscale (Keane, Malloy, & Fairbank, 1984), a 46 true/false item supplementary

scale of the MMPI-II that was empirically derived and able to predict PTSD diagnostic status (n = 960); and the Traumatic Symptom Inventory (TSI; Briere, 1995), a 100-item, standardized, self-report inventory designed for general clinical use in the assessment of the psychological sequelae of potentially traumatic events, including physical violence and sexual assault (n = 311). The SAQ was administered at every assessment period. However, during the first testing semester, a 41-item true/false version of the SAQ was used (n = 878). For the remaining assessment sessions, the published 45-item SAQ was administered, which included the 41 items of the previous version plus four additional research questions (n = 1,928). Each of these four items had appeared in earlier versions of the questionnaire. A review of previous analyses revealed that two items were accidentally omitted despite the fact that they met criteria for inclusion in the SAQ (#43–I've never felt burdened by a terrible secret; #45–I rarely communicate with my mother.) The two remaining items (#42–I rarely communicate with my siblings; and #44–My life has been characterized by numerous physical symptoms and/or illnesses) were found to have achieved significance in their ability to discriminate between abused and non-abused participants of one, but not of both genders. In light of this, it was felt that the items had been prematurely dropped and were therefore added back into the measure. Each of the above instruments has been shown to possess good psychometric properties and have been used as a method for determining trauma symptomatology or sequelae associated with abuse histories.

Abuse Criterion Assessment

For this study, the classification of participants as having a history of childhood abuse refers to their self-reporting sexual, physical, or combined abuse prior to the age of 15, where the perpetrator was five or more years older than the victim (Elliott & Briere, 1992). Each participant was asked to fill out a criterion measure designed to assess the presence or absence of a history of childhood sexual abuse (CSA), childhood physical abuse (CPA), and/or combined sexual and physical abuse (CA). This criterion measure provides a number of examples of physical and sexual abuse. Those who indicated a history of abuse were further asked to describe their experience, the age of occurrence, the age of the abuser, and their relationship with the abuser.

For those participants classified as CSA, the abuse events provided ranged from "someone exposed their genitals to me when I did not want them to" to "someone forced me to engage in sexual intercourse when I

did not want to." For CPA participants, the abuse events ranged from "someone struck me with an object" to "someone tied me up or physically restrained me for extended periods of time." In both cases, space was provided to write in experiences not listed. CA participants endorsed having experienced both kinds of abuse. Responses to the criterion measure administered with the SAQ were also reviewed by two licensed clinical psychologists prior to being included in an abuse category.

Grouping Assignments

Based on participants' responses to the criterion measure of abuse administered with the SAQ, assignments were made to one of four groupings: (1) self-report of no history of abuse (NA); (2) self-report of CSA, (3) self-report of CPA; and (4) self-report of CA. A fifth group was developed that comprised all participants who reported some form of a childhood abuse history (CAH). Inclusion into one group guaranteed exclusion from the other classification groups, except for their inclusion in Group CAH, which combined all abused participants.

Eighty-one percent (n = 2,284) of the participants reported having experienced a history of NA; 4% (n = 125) reported a history of CSA; 12% (n = 323) reported a history of CPA; and 3% (n = 74) reported a history of CA. This totaled 19% of the sample (n = 522) having reported a history of one of the above forms of childhood abuse (CAH).

Results

Prior to analysis, the data were found to meet assumptions for normality, linearity, homoscedasticity, and collinearity (Tabachnick & Fidell, 2001).

SAQ internal consistency was found to be high (KR-20 = 0.85), as was split-half reliability (r = 0.86). SAQ total scores moderately correlated with the MMPI-PTSD subscale (r = 0.74; n = 960), the TSC-40 (r = 0.647; n = 1,295), and the number of items endorsed on the TSI, excluding items on the Atypical Response subscale (r = 0.686; n = 311).

Differences on SAQ total scores between males (M = 9.53, SD = 5.946) and females (M = 10.12, SD = 6.536) were statistically significant, $F(1, 1926) = 3.99$, $p = 0.046$. However, given the large number of participants in this study, this result does not indicate noteworthy differences between genders. The effect size (d = 0.09) indicates weak or negligible effects (Cohen, 1973). Item analyses show Φ values ranging

from −0.001 to 0.087, indicating a weak to negligible effect of gender on responses to individual items.

The psychometric properties of individual ***SAQ*** items were analyzed within the CSA, ***CPA, CA,*** and ***CAH*** groups. Pearson X^2 analyses showed that 34 of the 45 ***SAQ*** items (76%) showed a significant association between item endorsement and ***CSA*** history. Forty-two of the 45 ***SAQ*** items (93%) showed a significant association between item endorsement and ***CPA*** history. Forty-one (91%) of the ***SAQ*** items showed a significant association between a history of ***CA*** and item responses. All ***SAQ*** items showed a significant association between a history of ***CAH*** and item endorsement. Because the probability of finding significant associations is greater when using large samples, the strength of associations (Φ) between abuse history and response style was also calculated. Using this index, no items in particular were found to be strongly associated with a history of CSA, ***CPA, CA,*** or ***CAH,*** with values ranging between 0.10 and 0.28. Interestingly, 31 (69%) items were more strongly associated with ***CAH*** than with one particular type of abuse history, suggesting that they are measures of sequelae general to an abuse history, not specific to aparticular type of abuse history. The remaining analyses conducted for Study I used the participants (n = 1,928) who completed the published 45-item version of the ***SAQ.***

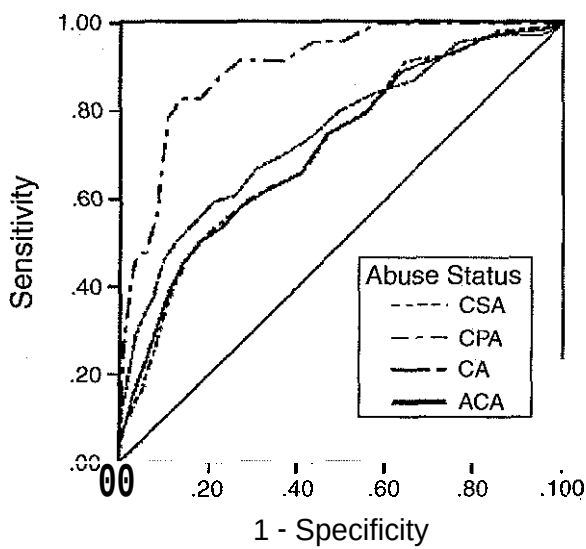
Contrasts ***Between*** *CSA*, CPA, CA, ***and*** CAH Groups

Planned contrasts were performed using the average total scores of the 45-item ***SAQ*** version between participants reporting no abuse history (M = 9.00, SD = 5.80; n = 1,582) and participants with self-reported histories of ***CSA*** (M= 12.74, SD = 7.45; n = 91), ***CPA*** (M = 13.78, SD = 6.39; n = 213), ***CA*** (M = 17.33, SD = 7.71; n = 42), and ***CAH*** (M = 13.94, SD = 6.96; n = 346). Scores of participants with histories of ***CSA, CPA, CA,*** and ***CAH*** all differed significantly from participants without abuse histories, $t(1,671) = 5.88$, $p < 0.001$, $d = 0.63$; $t(1,793) = 11.16$, $p < 0.001$, $d = 0.81$; $t(1,622) = 9.11$, $p < 0.001$, $d = 1.42$; $t(1,926) = 13.82$, $p < 0.001$, $d = 0.82$, respectively. Between-subject t-tests were also performed comparing ***SAQ*** total scores of those with histories of ***CSA*** and ***CPA.*** No significant differences were found between these two groups, $t(302) = 1.24$, $p = 0.22$, $d = 0.15$. The ***CA*** group, however, scored significantly higher on the ***SAQ*** than those with a history of ***CSA,*** $t(131) = 3.27$, $p < 0.001$, $d = 0.61$, or a history of ***CPA,*** $t(253) = 3.18$, $p = 0.002$, $d = 0.54$.

ROC Curves

ROC curves were used to determine SAQ sensitivity to CSA, CPA, CA, and CAH. ROC curves are a plot of the probability of true positives against the probability of false positives, with the differences between the means of the two distributions serving as the parameters, as illustrated in Figure 1. ROC analyses can provide sensitivity and specificity estimates for any given cut-off score and the total area under the ROC curve (W) provides an overall index of a measure's sensitivity. ROC curves showed measures of sensitivity to CSA ($W = 0.65$; 95% C.I. = 0.60 – 0.71) and CPA ($W = 0.72$; 95% C.I. = 0.69 – 0.75) that were moderately high. ROC curves showed measures of sensitivity to CA that were higher than those of CSA and CPA ($W = 0.81$; 95% C.I. = 0.75 – 0.87), suggesting that the SAQ was more sensitive to CA than to CSA or CPA alone. ROC curves showed measures of sensitivity to CAH that were moderately high ($W = 0.71$; 95% C.I. = 0.68 – 0.74).

FIGURE 1. Receiver Operating Characteristic Curve (sensitivity vs. [1-specificity]) for BCAS Score versus Self-Reported History of CSA, CPA, CA, and CAH



Note. Diagonal represents classification at chance levels.

Factor Analysis

An exploratory factor analysis was performed to examine the underlying factor structure of the SAQ. Because factor analysis of dichotomous variables can lead to biased results (Floyd & Widaman, 1995), this study used the factor analysis methodology outlined by Gorsuch (1974). In this approach, a G-coefficient was calculated by creating an extended score matrix in which a hypothetical subject was added to the data set for each original subject. Each hypothetical subject was then assigned scores that were the opposite of the scores received by the original subject. This procedure ensured that no matter how the items were scored, they would have a 0.50/0.50 marginal split. This allowed for the use of Pearson product-moment correlations and, therefore, allowed for a factor analysis of dichotomous data (Gorsuch, 1974).

Principal components extraction through SPSS Factor was used to estimate the number of factors. An initial factor solution of up to four factors was suggested by an examination of eigenvalues, which index the amount variance accounted for by the factors. Further graphical inspection of eigenvalues (i.e., scree plot) showed that the amount of variance accounted for by the factors did not substantially increase beyond the first factor, suggesting a one-factor solution. Because it has been suggested that one err on the side of too many factors (Gorsuch, 1974), two factors were extracted using Maximum Likelihood extraction for analyses. Factor correlations ($r = 0.29$) and visual inspection of item-factor-loading scatterplots suggested that the factors correlated. The factors were then rotated using an oblique (Direct Oblimin) rotation strategy that allowed for inter-factor correlations. Measures of internal consistency for the two-factor solution were good ($SMC = 0.82$).

Thirty-eight items on the 45-item version of the SAQ met our predetermined factor loading criterion of 0.32 for inclusion in the interpretation of the first factor. The factor loadings ranged from −0.37 to 1.03. Three of these items were complex items in that they loaded on more than one factor. Seven items met the factor-loading criterion for interpretation of the second factor and ranged from −0.35 to 0.53. Three SAQ items (#17, #35, and #43) failed to load on either factor. Commonality values for SAQ items after extraction ranged from 0.12 to 0.96. Before rotation, the two factors accounted for 50.37% of the variance in SAQ scores (Factor 1: 44.50%; Factor 2: 5.87%). The first factor was given the interpretive label "abuse" and the second factor was labeled "negative affect."

Discussion

This study investigated the SAQ's ability to detect sequelae associated with histories of CSA, CPA, CA, and any abuse history. In line with previous research, the SAQ demonstrated good internal consistency and split-half reliability and showed moderate to high correlations with other instruments purporting to measure PTSD symptomatology and CSA-related trauma.

CPA participants scored higher on the SAQ than non-abused participants but no differently from those with a CSA history. Those with a history of CA also scored higher than participants with no abuse history, as well as those participants with a history of CSA or CPA alone. Similarly, measures of SAQ sensitivity were consistently higher when the questionnaire was used to discriminate between CA and non-abused participants than when used to discriminate between CSA or CPA participants and non-abused participants. Taken together, results suggest that the SAQ is a better measure of sequelae associated with CA than sequelae associated with CSA or CPA alone. These findings are consistent with previous research that suggests that CA greatly elevates the consequences of abuse when compared with specific types of abuse alone (Wind & Silvern, 1992).

Analyses of items across all participants and all abuse groups indicated that SAQ items #17, #35, and #43 (see Locket al., 2005) contributed little to the sensitivity of the SAQ. Therefore, it was decided to delete these items from future versions of the SAQ.

Another SAQ revision related to the utility of the second factor, "negative affect." The items most strongly correlated with this factor appeared to be those most closely associated with depression and/or anxiety (item #s 5, 12, 19, 20, 37, 40, and 43). However, because many of these items did not load on the first factor ("abuse"), it is not clear that these items related to a phenomenon specific to the construct that the questionnaire purports to measure (i.e., abuse sequelae). A review of item content suggested that although these items potentially tap symptoms related to an abuse history, many appear to be sensitive to depression and/or anxiety that might be unrelated to an abuse history. The inclusion of these items leads to poorer SAQ specificity. This is because non-abused participants who are experiencing non-abuse-related depression and/or anxiety are likely to endorse these items and thereby score higher on the SAQ, and, in turn, will increase the likelihood that they will be falsely classified as potentially having an abuse history. Therefore, it was decided to delete these items as well.

STUDY II

Following the revisions made based on the results of Study I, the following nine items of the SAQ (5, 12, 17, 19, 20, 35, 37, 40, and 43) were deleted to form a new 36-item abuse measure (see Appendix). The findings in Study I suggest that the 36 items in this new version serve as an effective screening measure of multiple types of abuse histories. This newly constructed version requires a new identifying label, for which we have chosen the Binghamton Childhood Abuse Screen (BCAS). Study II is designed to determine this new measure's reliability, validity, and sensitivity in detecting the presence of abuse in different subcategories of abuse via an evaluation with a new data set.

Method

Participants

Participants consisted of 1,530 undergraduate students from psychology courses who participated in group testing over four consecutive semesters. Participants in this study were categorized into one of five groups previously used in Study I (NA, CSA, CPA, CA, CAH).

Instruments

Three instruments were administered: the SAQ, the TSI, and the newly constructed BCAS, which was derived from the original 45-item version of the SAQ.

Procedure

Study II utilized the same procedures as Study I.

Data Screening

The same data screening methods were utilized as in Study I. Participants were deleted from the data set for failure to contain more than 95% of the data ($n = 13$) and for failure to include answers on any of the relevant questions on the criterion measure ($n = 63$). Of the remaining 1,454 cases (886 female, 568 male), 114 completed the TSI. Assumptions of normality, linearity, homoscedasticity, and collinearity were adequately met (Tabachnick & Fidell, 2001).

Results

Descriptive Statistics

Using the self-report criterion measures of abuse history, *1,228 (84.5%)* participants reported no incidents of childhood sexual or physical abuse, *49 (3.4%)* participants were classified as having only a history of CSA, *157 (10.8%)* participants were classified as having only a history of CPA, and *20 (1.4%)* participants were classified as having a history of combined childhood sexual and physical abuse. BCAS internal consistency was found to be high *(KR-20* = 0.83), as was split-half reliability *(r = 0.83)*. The number of items endorsed on the TSI, excluding items on the Atypical Response subscale, correlated with BCAS total scores *(r = 0.677; n = 114)*.

As in Study I, differences on BCAS total scores between males *(M = 5.712, SD = 4.461)* and females *(M = 6.221, SD = 5.026)* were statistically significant $F(1,2804) = 7.29$, $p = 0.007$ but the effect size *(d = 0.11)* indicates weak or negligible effects (Cohen, *1973)*. Item analyses show Φ values ranging from *−0.01* to *0.04*, which also indicate a weak to negligible effect of gender on responses to individual items.

Chi-square analyses showed that endorsement of BCAS items was significantly associated with all types of abuse history, CSA: *31* items *(86%)*; CPA: *32* items *(89%)*; CA: *31* items *(86%)*; and CAH: *33* items *(92%)*. However, as in Study I, the strength of the association between all items and all abuse types was weak, as indexed by Φ values ranging between *−0.10* and *0.28*. Endorsement of two items (#25 and #27) was not related to any abuse type.

BCAS as a Measure of CSA, CPA, CA, and CAH

Planned contrasts were performed between average total BCAS scores of NA participants *(M = 6.12, SD = 4.65)* and participants with self-reported histories of CSA *(M = 9.96, SD* = 6.15), CPA *(M = 9.55, SD* = 5.30), CA *(M = 17.50, SD* = 4.57), and CAH *(M = 10.35. SD = 5.86)*. Scores of participants with histories of CSA, CPA, CA, and CAH all differed significantly from NA participants, $t(1,275) = 5.60$, $p < 0.001$, $d = 0.82$; $t(1,383) = 8.58$, $p < 0,001$, $d = 0.73$; $((1,246) = 10.87$, $p < 0.001$, $d = 2.48$; $t(1,452) = 12.03$, $p < 0.01$, $d = 0.87$, respectively.

ROC Curves

As seen in Figure 1, ROC curves showed that the BCAS was sensitive to CSA, CPA, and CAH (CSA: $W = 0.75$; 95% C.I. = 0.68 – 0.81; CPA: $W = 0.71$; 95% C.I. = 0.67 – 0.75; CAH: W = 0.71; 95% C.I. = 0.68 – 0.75), and especially that of CA (W = 0.90; 95% C.I. = 0.85 – 0.96). ROC curves were also used to determine the BCAS sensitivity (percent of true positive) and specificity (percent of true negatives) for CSA, CPA, CA, and CAH across the range of all possible cut-off scores (see Table 1).

Factor Analysis

Exploratory factor analysis of the BCAS was performed using the same methodology as previous analyses. Inspection of the scree plot and eigenvalues after Principal Components extraction strongly suggested a one-factor solution accounting for 49.4% of the variance in SAQ total scores. Internal consistency for the one-factor solution was good (SMC = 0.98). Thirty-five of the 36 items met the criterion for interpretation of this factor. Again, the factor was given the interpretive label "abuse."

Discussion

The purpose of Study II was to construct a shorter revised questionnaire that would serve as a sensitive screen of childhood abuse across all abuse types and that would continue to possess good psychometric properties. This revised 36-item measure, the BCAS, showed adequate internal consistency, convergent validity with the TSI, and showed good criterion-free measures of sensitivity across CSA, CPA, CA, and CAH groups when discriminating them from non-abused individuals.

Item analyses suggest that the greater sensitivity of the BCAS to CA is due to two reasons. First, the endorsement of some items was more strongly associated with a history of CSA than of CPA, while other items were more strongly associated with CPA than with CSA. Therefore, those with CA histories were more likely to endorse both types of items, which in turn, contributed to greater total scores. Second, some items were more strongly associated with CA than with CSA or CPA alone, suggesting that they either tap into sequelae specific to a CA history or that CA history exacerbates the abuse sequelae to which these items are sensitive. Additionally, the failure of two items to distinguish between

TABLE 1. Sensitivity and Specificity for BCAS Cut-Off Scores for Detection of CSA, CPA, CA, and CAH

BCAS Total	CSA		CPA		CA		CAH	
	Sens	Spec	Sens	Spec	Sens	Spec	Sens	Spec
1	0.97	0.05	0.99	0.05	1.00	0.05	0.98	0.05
2	0.97	0.14	0.98	0.15	1.00	0.14	0.97	0.16
3	0.96	0.23	0.93	0.25	1.00	0.23	0.93	0.25
4	0.87	0.33	0.91	0.36	1.00	0.33	0.89	0.36
5	0.84	0.42	0.80	0.44	1.00	0.42	0.79	0.45
6	0.80	0.51	0.75	0.53	0.96	0.50	0.74	0.54
7	0.74	0.57	0.66	0.59	0.96	0.57	0.65	0.60
8	0.70	0.64	0.63	0.66	0.91	0.63	0.62	0.67
9	0.67	0.70	0.59	0.72	0.91	0.69	0.58	0.73
10	0.61	0.74	0.56	0.77	0.91	0.74	0.54	0.77
11	0.59	0.79	0.51	0.81	0.87	0.78	0.50	0.82
12	0.55	0.83	0.46	0.85	0.83	0.82	0.45	0.86
13	0.51	0.87	0.38	0.89	0.83	0.86	0.38	0.90
14	0.46	0.90	0.31	0.91	0.78	0.89	0.31	0.92
15	0.38	0.93	0.23	0.93	0.57	0.92	0.24	0.94
16	0.33	0.95	0.17	0.95	0.48	0.94	0.19	0.96
17	0.29	0.96	0.14	0.97	0.48	0.96	0.15	0.97
18	0.23	0.97	0.11	0.97	0.43	0.97	0.12	0.98
19	0.19	0.98	0.09	0.98	0.39	0.98	0.09	0.98
20	0.14	0.99	0.07	0.99	0.30	0.99	0.07	0.99
21	0.13	0.99	0.06	0.99	0.26	0.99	0.06	1.00
22	0.10	0.99	0.04	0.99	0.17	0.99	0.04	1.00
23	0.04	1.00	0.03	1.00	0.09	1.00	0.03	1.00
24	0.01	1.00	0.01	1.00	0.04	1.00	0.01	1.00
25	0.01	1.00	0.01	1.00	0.04	1.00	0.00	1.00
26	0.01	1.00	0.01	1.00	0.04	1.00	0.00	1.00
27	0.01	1.00	0.01	1.00	0.04	1.00	0.00	1.00
28	0.01	1.00	0.01	1.00	0.04	1.00	0.00	1.00
29	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
30*	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00

Note. CSA = Childhood sexual abuse, CPA = Childhood physical abuse, CA = Combined childhood sexual and physical abuse, CAH = Any childhood abuse.
*Measures of sensitivity and soecificity remained at these levels using cut-off scores areater than 30 across all abuse groups.

any of the abuse groups suggests that further validation may be necessary.

ROC curve analyses showed criterion-free estimates of sensitivity for the BCAS to be similar to those of the SAQ for CPA, and greater than that of the SAQ for CSA and CA. Improvements in these indices

are attributable to the greater specificity that the BCAS possesses over the SAQ. This is likely due to the deletion of items that were sensitive to distress that was not specific to abuse history. Slated in another way, deletion of these items helped ensure that BCAS scores reflect an individual's experience of abuse sequelae, not general distress. ROC curve analyses also provided sensitivity and specificity indices for all possible BCAS cut-off scores across all abuse types, enabling examiners to choose cut-off scores that are suitable for their purposes (see Table 1). For example, a community mental health center endeavoring to make the most efficient use of their limited resources while, at the same time minimizing the risk of clients with actual abuse histories "falling through the cracks," might adopt a lower cut-off score that favors sensitivity over specificity. In this way, more time-intensive follow-up assessments could be conducted on those clients most likely to benefit from such an expenditure of resources. In contrast, a clinician who is seeking to identify clients to participate in a small, time-limited therapy group for adults with a history of childhood abuse might select a higher cut-off score that maximizes the likelihood that those clients being considered for the group will be appropriate. Thus, the ROC curve analyses enable the BCAS to be used flexibly as an aid in screening for individuals who are suffering fromproblems that stem from a history of childhood abuse.

While the initial validation of the BCAS is promising, the use of a mixed-gender, non-treatment-seeking, collegiate sample limits the generalizability of these findings. Further research with independent samples is needed to replicate the findings from this study and continue to explore the extent to which the BCAS is sensitive to other types of maltreatment. Given that reports of childhood abuse sequelae may differ for males and females (Briere et al., 1995) it is important that future research continue to examine the BCAS's ability to detect different types of abuse sequelae across genders. Furthermore, research designs utilizing multitrait-multimethod methodology that incorporate clinical assessment of abuse history would address limitations posed by self-reported abuse history (Campbell & Fiske, 1959; Martin et al., 1993).

Although validation issues still remain, results from this and other studies (Locket al., 2005) suggest that further development of the BCAS could yield a significant contribution to the field with respect to screening for individuals suffering from distress resulting from childhood abuse. (For a more comprehensive description of the data analyses in both studies, see Castelda, 2003.)

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APPENDIX

BINGHAMTON CHILDHOOD ABUSE SCREEN (BCAS)

Instructions: Please respond to the following statements about yourself by circling T (for True–if the statement pertains to you), or F (for False–if the statement does not pertain to you).

1 (1). At times, I have had the feeling that I have fallen into a black hole or cloud..... T F

2 (2). I sometimes stay in bad relationships to avoid being alone.....T F

3 (3). I have had repeated nightmares or terror dreams..... T F

4 (4). I have no memories of attempting suicide in childhood or adolescence .....T F

5 (6). I did not have a happy childhood.....T F

6 (7). I rarely communicate with my father.....T F

7 (8). One or more of my parents was alcoholic or drug dependent.....T F

8 (9). To the best of my knowledge, at least one of my siblings has been physically abused.....T F

9 (10). I feel relaxed and comfortable much of the time.....T F

10 (11). There are periods of my life (past the age of 5) for which I have no memory.....T F

11 (13). I have had periodic fears that I would lose control.....T F

12 (14). I am much lonelier than most other people.....T F

13 (15). I have had a relationship in which I was sexually abusive to others..... T F

14 (16). When I was an adolescent or young adult, I acted out sexually more than I wanted.....T F

15 (18). To the best of my knowledge, at least one of my siblings has been sexually abused.....T F

16 (21). Sometimes I feel a presence in my bedroom.....T F

17 (22). As a child, Iescaped into books.....T F

18 (23). Sometimes I feel that I am an impostor or pretender..... T F

19 (24). Periodically, I have bouts of uncontrollable crying.....T F

20 (25). This question is for women only: I got pregnant when I was an adolescent.....T F

21 (26). I have sometimes truly wished that I were dead.....T F

22 (27). I am afraid of members of the opposite sex.....T F

23 (28). When I was a child, I felt the need to be small and quiet. .....T F

24 (29). *I have never had a relationship in which I was physically abused.....T F

25 (30). *I have never been confused about my sexual orientation.....T F

26 (31). I have had trouble controlling my bladder while sleeping, especially in childhood.....T F

27 (32). I have had a relationship in which I was sexually abused.....T F

28 (33). I think that my childhood was psychologically abusive .....T F

29 (34). Sometimes, I have the feeling that I am "crazy".....T F

30 (36). *I never/rarely experience a desire to smash or destroy things .....T F

31 (38). It makes me nervous when things are going my way .....T F

32 (39). I frequently feel that the anger inside of me may explode .....T F

33 (41). I have often engaged in risky behaviors.....T F

34 (42). I rarely communicate with my siblings.....T F

35 (44). My life had been characterized by numerous physical symptoms and/or illness.....T F

36 (45). I rarely communicate with my mother.....T F

Note. Original SAQ item #s in parentheses.
'Reverse-scored items (Total scores are calculated by summing all items endorsed as "true" and reverse-scored items endorsed as "false.")