Child Abuse Potential (CAP) Inventory
Description and Psychometric Characteristics

Test Description

The CAP Inventory (Form VI; Milner, 1986) is a 160-item, paper and pencil questionnaire that was originally designed to provide an estimate of parental risk in suspected cases of child physical abuse. The CAP Inventory is now used as a risk screening tool in a variety of assessment situations. The CAP Inventory has a third-grade reading level. Respondents are instructed to respond to each item by indicating whether they agree or disagree with the item statement.

The 160-item CAP Inventory contains a 77-item child physical abuse scale and six factor scales: distress, rigidity, unhappiness, problems with child and self, problems with family, and problems from others. In addition, subsets of the 160 questionnaire items have been used to develop two "special" scales: the ego-strength scale and the loneliness scale.

To detect response distortions, the CAP Inventory contains three validity scales: the lie scale, the random response scale, and the inconsistency scale. The validity scales are used in different paired combinations to form three validity indexes: the faking-good index, the faking-bad index, and random response index. If any validity index is elevated, the abuse score may not be an accurate representation of the respondent's "true" abuse score. The interpretative manual for the CAP Inventory (Milner, 2006) provides an extensive discussion of how elevated validity indexes should be interpreted.

Estimated (Mean) Time to Administer

College educated respondent, 10-12 minutes.
High school educated respondent, 15-20 minutes.

Psychometric Characteristics

Information on the development, structure, reliability, and validity of the CAP Inventory are described in a technical manual (Milner, 1986) as well as in other reports (Milner, 1994, 2004, 2007, 2008; Milner, Murphy, Valle, & Tolliver, 1998). Guidelines for applications and scale score interpretations also are available (Milner, 1989b, 1989c, 1990, 2006).

Reliability. Internal consistency and temporal stability estimates for the CAP Inventory abuse scale have been reported in the technical manual (Milner, 1986) and in subsequent studies (e.g., see Milner, 2004, for a review). Internal consistency estimates range from .92 to .95 for general population (n = 2,062), at-risk (n = 178), neglectful (n = 218), and physically abusive (n = 152) parent groups (Milner, 1986). Internal consistency estimates range from .85 to .96 across different gender, age, education, and ethnic groups (Milner, 1986).

General population test-retest reliabilities for the abuse scale for 1-day (n = 125), 1-week (n = 162), 1-month (n = 112), and 3-month (n = 150) intervals are .91, .90, .83, and .75, respectively (Milner, 1986). Numerous internal consistency and temporal stability estimates for the six descriptive factor scales and for each of the three validity scales are available in the technical manual (Milner, 1986). Internal consistency estimates (split-half reliability coefficients) across a variety of samples (general

population, at risk, maltreating) for each of the six CAP subscales are as follows: distress, .93-.97; rigidity, .77-.89; unhappiness, .54-.83; problems with child and self, .53-.72; problems with family, .64-.84; and problems from others.61-.77. Test-retest reliability estimates across a three-month time period for the six CAP subscales are as follows: distress, .70; rigidity, .84; unhappiness, .69; problems with child and self, .55; problems with family, .66; and problems from others, .72.

Validity: Research is available that describes the predictive validity (concurrent and future prediction) and the construct validity of the CAP abuse scale (some of this research is described below).

Concurrent Predictive Validity. In addition to data indicating that the CAP Inventory abuse scale produces the expected group differences between child physical abusers and comparison groups (see Milner, 1986, 1994 for reviews), initial individual classification rates based on discriminant analysis indicated correct classification rates in the 90% range. However, in subsequent studies using more diverse populations (e.g., Milner, Gold, & Wimberley, 1986) classification rates based on discriminant analysis have been lower (i.e., in the mid-80% to the low 90% range).

Since discriminant analysis provides an optimal classification rate for the sample under investigation, other studies have investigated CAP Inventory abuse scale classification rates based on the standard scoring procedure. For example, Milner (1989a) reported that before the removal of invalid protocols and using the standard scoring procedure and the 215-point cutoff score, 73.8% of 110 child physical abusers, and 99.1% of 110 matched comparison parents were correctly classified, producing an overall classification rate of 86.4%. A modestly higher overall classification rate of 88.5% was observed when the alternate 166-point cutoff score (which is based on signal-detection theory) was used. For valid protocols, using the standard scoring procedure and the 215-point cutoff score the abuse scale correctly classified 81.4% of the child physical abusers and 99.0% of the comparison parents, for an overall rate of 90.2%. Again, a slightly higher overall classification rate of 92.2% was found when the 166-point cutoff score was used.

More false negative than false positive classifications are typically found when physically abusive and demographically matched comparison parents are studied. This outcome suggests that it is more likely that the CAP Inventory will fail to detect abusive parents (false negative classifications) than to misclassify demographically similar nonabusive comparison parents as abusive (false positive classifications). Supporting the view that the CAP Inventory has relatively fewer false positive classifications, the specificity (ability to correctly classify nonabusive parents) of the CAP abuse scale has been investigated in a variety of non-abusive groups with acceptable results. For example, a 100% correct classification rate has been reported for low-risk mothers (Lamphear, Stets, Whitaker, & Ross, 1985), nurturing mothers (Milner, 1989a), and nurturing foster parents (Couron, 1982). In a large sample (n = 1,151) study of the effects of medical stress on abuse scale specificity, no distortions were found in the classification error rate (chance rate of 5%) in mothers with vaginal and C-section delivery, with and without complications (Milner, 1991). However, a reduction in the abuse scale specificity (an increase of 5% to 10% in error rate) was observed when parents of children with certain types of injury (severe burns) and illness (gastric problems) were studied.

Future Predictive Validity. In addition to data on concurrent prediction, Milner, Gold, Ayoub, and Jacewitz (1984) conducted a prospective study (future prediction) in which 200 at-risk parents were tested at the beginning of a prevention program and followed to determine subsequent cases of child maltreatment. A significant relationship (Cramer's V = .34, $p < .0001$; omega squared = .32) was found

between pre-intervention abuse scores and later confirmed child physical abuse. Albeit modest, a significant relationship was found between abuse scores and later confirmed child neglect. Although not designed to be a measure of child neglect, Ayoub and Milner (1985) also found that abuse scores of mothers with failure-to-thrive infants receiving services were related to later confirmed instances of child neglect.

Valle, Chaffin, and BigFoot (2000) followed 1,488 parents and expectant mothers recruited from 28 family support and family preservation programs. Valle et al. (2000) reported that abuse scores obtained when parents entered the programs predicted later incidence of child maltreatment (after controlling for demographic factors). Although trends were evident in all ethnic subgroups studied, additional analyses indicated abuse scores significantly predicted future child maltreatment in Caucasian, Native American, and African American participants but not in Hispanic participants in this sample (albeit, as indicated, a trend was observed for Hispanic participants).

Several predictive validity studies have focused on child outcomes other than child maltreatment. For example, Dukewich, Borkowski, and Whitman (1999) found that maternal abuse scores (on a abbreviated version of the abuse scale) obtained when their children were one and three years of age predicted their children's intelligence and adaptive behavior at three and five years of age. Maternal abuse scores' prediction of children's later developmental delays remained significant even after mothers' problematic parenting orientations were statistically controlled. Zelenko et al. (2001) examined the relationship between maternal prenatal abuse scores (on an abbreviated version of the abuse scale) and neonatal morbidity. Prenatal abuse scores were obtained during the second half of pregnancy in poor single adolescent mothers. As expected, abuse scores were predictive of neonatal morbidity and this association remained significant even after obstetric risk factors were statistically controlled.

In general, data indicate that the abuse scale is superior to the individual abuse scale descriptive factors in predicting abuse. However, the predictive validity data also suggest that some abuse scale factors may be better at predicting concurrent risk and others may be better at predicting future risk. For example, although both the distress and rigidity factors significantly predict concurrent and future child abuse, the distress factor appears to be a stronger predictor of concurrent risk, whereas the rigidity factor appears to be a relatively better predictor of future abuse. This finding may be related to the distress factor's tendency to measure situational conditions that change across time, whereas the rigidity factor appears to measure trait-like conditions that are less likely to change across time.

Construct Validity. Comprehensive reviews of the CAP Inventory abuse scale construct validity studies are available elsewhere (e.g., Milner, 1986, 1994, 2004). As these reviews document, the CAP Inventory abuse scores are generally associated in the expected manner with child physical abuse risk factors reported in the literature (e.g., Milner, 1998; Milner & Crouch, 1999; Milner & Dopke, 1997). For example, individuals who receive or observe childhood abuse, compared to those without such a history, earn higher abuse scores. Respondents with elevated abuse scores also report less family cohesion, more family conflict, less marital satisfaction, more domestic violence, and more social isolation. However, when supportive relationships (adult or peer) occur during childhood, respondents' abuse scores reflect these buffering events and tend to be lower. Although more data are needed to determine if parents with elevated abuse scores are more likely to have insecurely attached infants, data uniformly indicate that individuals with elevated abuse scores have insecure adult attachments. Similarly, robust inverse relationships have been reported between abuse scores and self-esteem and ego-strength measures.

As expected, individuals with elevated CAP Inventory abuse scores report higher levels of life stress and personal distress. In addition to the main effects of stress, an interaction between stress and beliefs in corporal punishment has been reported where the occurrence of stress in individuals with strong beliefs in the use of corporal punishment was associated with the highest abuse scores. Those with elevated abuse scores are more physiologically reactive to both child-related and non-child-related stimuli. They also display neuropsychological deficits, albeit the reasons for the neuropsychological deficits are unclear.

Individuals with elevated abuse scores make external attributions for their own behavior and are less likely to change their child-related attributions of responsibility after receiving mitigating information regarding children's negative behavior. In general, those with elevated abuse scores display a rigid interactional style and are less responsive to temporal changes in their children's behavior. Individuals with elevated abuse scores have been reported to make more negative evaluations (e.g., wrongness) and interpretations (e.g., hostile intent) of children's behavior and make more external, unstable and specific attributions for children's positive behaviors.

Perhaps most important for a scale that purports to measure abusive behavior, elevated CAP abuse scores have been shown to be related to problems in parent-child interactions. Individuals with elevated abuse scores are uniformly reported to interact less with their children and, when they do interact, they use more harsh discipline techniques (e.g., verbal and physical assault) and less positive parenting practices, including less frequent (compared to low-scoring mothers) reinforcement of their children's pro-social behavior. An interaction between abuse scores and stress also has been reported. As abuse scores increase, stress increases the degree to which parents are rejecting and punishing.

Individuals with elevated abuse scores uniformly report negative affect, which includes depression, anxiety, frustration, anger/hostility (associated with children's behavior), general aggression, and psychopathology. Similarly those with elevated abuse scores lack emotional stability, have a low frustration tolerance, are irritable, have poor impulse control, have temper outbursts, are assaultive and display less empathy. Elevated abuse scores also are correlated with self-reported alcohol and drug use.

Numerous studies have reported abuse score decreases after intervention. For example, pre-treatment, post-treatment, and follow-up abuse score decreases have been reported for at-risk parents presented an ecologically based intervention program and for at-risk parents given a behavioral parent-training program. Pre- and post-treatment abuse score decreases have been reported for a group of abusive and neglectful parents after an intensive multimodal intervention program. Albeit changes are not always found, several studies have reported abuse score decreases following in-home treatments. Further, data suggest that the higher the initial abuse score the more likely a client is to dropout of treatment. Collectively the treatment evaluation studies indicate that the abuse scale is a useful global measure of treatment effects for at-risk and abusive parent treatment programs and can provide an individual change score that can be used to examine the association between client variables (age, education, ethnic background) and process variables (number of sessions) and client change. In conclusion, construct validity data support the view that elevated abuse scores measure an array of personal and interpersonal characteristics (including multiple problems in parenting) that are similar to characteristics of known child physical abusers and that are associated with risk for child physical abuse.

Translated Versions of the CAP Inventory

There have been more than 25 translations of the CAP Inventory. Although many psychometric studies have been conducted on different translated versions of the Inventory, the amount of reliability and validity data on any specific translation of the questionnaire is highly variable. Nevertheless, in addition to a comprehensive listing of the published studies on translated versions of the CAP Inventory in the reading list that is referenced at the end of the Reference section (below), a journal article that reviews the available psychometric data on translated version of the CAP Inventory is available (see Milner & Crouch, 2012).

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Note. A reading list of more than 1,000 articles, papers, chapters, theses, dissertations, unpublished works, etc. on the uses and psychometric characteristics of the CAP Inventory is available (see product menu on this web site).