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ABSTRACT

A validation study was conducted on the Child Sex Abuse Attitude Scale (CSAAS) using confirmatory factor analysis (CFA) to examine the factor structure of three comparative CFA models. Multitrait multimethod analysis was also used to examine the convergent and discriminant validity of the CSAAS. The instrument was developed based on the theory of attitude development of L. Festinger (1957). This resulted in a four-factor first-order structure of cognition, value, affect, and behavior, and a single-factor second-order structure representing attitude. A national sample of 215 school psychologists responded to a survey consisting of 3 measurement instruments. The instruments included the CSAAS; the California Personality Inventory (CPI) subscales for intellectual efficiency, tolerance, and well-being; and a demographic survey. CFA results supported the higher-order factor structure of the CSAAS with minor modifications. On examination of the CSAAS subscales and the CPI subscales, convergent validity was found to be statistically significant for two of the CSAAS subscales, although the practical significance of the association was low. (Contains 9 figures, 11 tables, and 77 references.) (Author/SLD)

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CONSTRUCT VALIDATION OF THE CHILD SEX ABUSE ATTITUDE SCALE (CSAAS) THROUGH CONFIRMATORY FACTOR ANALYSIS

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An Abstract

A validation study was conducted on the Child Sex Abuse Attitude Scale (CSAAS) using confirmatory factor analysis (CFA) to examine factor structure of three comparative CFA models. MTMM analysis was used to examine convergent and discriminant validity of the CSAAS. The CSAAS was developed based on Festinger's (1957) theory of attitude development resulting in a four-factor first-order structure (Cognition, Value, Affect, and Behavior), and a single-factor second-order structure representing Attitude.

A national sample of 215 school psychologists, listed as members of the National Association of School Psychology (NASP), responded to a survey comprised of three measurement instruments. The instruments included: the CSAAS, the California Personality Inventory (CPI) subscales (Intellectual Efficiency (Ie), Tolerance (To), and Well-being (Wb), and a demographic survey. CFA results supported the higher-order factor structure of the CSAAS with minor modifications, χ^2 (41, N=215) = 45, p < .305. Upon examination of the CSAAS subscales and the CPI subscales, convergent validity was found to be statistically significant for two of the CSAAS subscales (Behavior r =.25 and Value r = -.19), practical significance of the association was low.

CONSTRUCT VALIDATION OF THE CHILD SEX ABUSE ATTITUDE SCALE (CSAAS) THROUGH CONFIRMATORY FACTOR ANALYSIS

The National Resource Center on Child Sexual Abuse (1991) has reported an increased incidence of child sex abuse. This finding forces both public and private sectors to investigate many ways in which to initiate both preventive and intervention programs for children and adolescents (Broadhurst, 1986; Cosentino, 1989; Hazzard & Rupp, 1983; Hitchcock & Young, 1986). Basic sex education curricula have been and remain controversial today (Yarber & Pavese, 1985). In a recent case, the Roman Catholic Diocese in Brooklyn, New York refused to lease two parochial schools to New York City due to disagreement about the sex education curriculum (Goldman, 1991). Given the reticence of many to discuss topics of *any* sexual issues in the schools, initiation of sex abuse programs often elicits contrasting points of view (Gilgun & Gordon, 1985; Slater & Gallagher, 1989; Yarber & Pavese, 1985). Child sex abuse is any sexual activity that ranges from exhibitionism to penetration through intercourse or sodomy, often involving many other sexual behaviors (Finkelhor, 1984).

Sexual abuse is such a highly sensitive matter that many professionals believe the topic does not belong in the schools. However, others demand that schools be the providers of prevention and intervention programs for both students and their parents. The average age of disclosure (initial telling of the abuse), as stated by the National Resource Center on Child Sexual Abuse, is nine years of age. Clearly this places the child within the school environment at the time of disclosure. Professionals from many disciplines acknowledge the residual effects of child victimization including emotional and academic difficulties that emerge within the school setting (Batchelor, Dean, Gridley & Batchelor, 1990; Byers, 1990; Tharinger, Russian, & Robinson, 1989). Instances of decreased grades, poor attendance, withdrawal, disruptions, sexualized behaviors, and intense emotional reactions are a few of the behaviors observed in schools (Slater & Gallagher, 1989). Professionals also note an increase in school related symptoms and disclosure among more vulnerable special needs students (Batchelor et al., 1990; O'Day & Schores, 1983; Tharinger et al., 1989).

Vevier and Tharinger (1986) explored the attitudes of school psychologists and identified two psychological barriers that may influence school personnel's involvement in CSA programs. First, a willingness to leave the

responsibility for sexually abused children to child welfare personnel existed among most school districts throughout the United states. Second, emotional reactions about sexual abuse of children are difficult to overcome. Confrontation with the sexually abused student often forces the school psychologist to sort through personal values and feelings about sexuality and sexual behavior. This process can be painful, especially if the professional has experienced sexual abuse as a child (German & Futcher, 1990; Mrazek, 1981).

The impact of these emotional reactions can be manifested in adverse professional behavior through denial of the sexual abuse and/or minimization of the seriousness of the problem. Festinger (1964) defines similar distancing behaviors within the cognitive dissonance theory. To investigate similarities between behaviors said to be present during cognitive dissonance and perceived school psychologist's behaviors, an attitude survey grounded in Festinger's theory of attitude development was proposed. Cognitive dissonance is described as a psychological state that one experiences when inconsistencies occur among the elements underlying one's attitude. Festinger (1964) and Rosenberg et al., (1969) defined the underlying elements of attitude, as cognition, values, affect and behavior. For instance, one may be forced to behave in one manner, yet their private attitude about the event is in disharmony with the mandated behavior. Conversely, one may value a particular behavior, act, or deed, but environmental obstacles prohibit her/him from fulfilling that behavior.

In order to examine attitudes concerning child sex abuse, the Child Sex Abuse Attitude Scale (CSAAS) was developed. The CSAAS is a 24-item instrument that has been pilot tested with two sample groups: A national sample and a sample of school psychologists working in a suburban south Florida public school. Results of an exploratory factor analysis suggested a potentially valid instrument. A third item review was conducted to prepare for this study. In the development of a new scale, issues of internal validity and construct validity are paramount in establishing empirical evidence that the hypothesized constructs do exist (Messick, 1994). Validation of any instrument, therefore, requires a two-stage level of analysis. First, validation of the underlying factors for the scale is conducted by examining the factor structure of the instrument. Second, overall validity is established when the instrument is validated against an instrument of similar underlying constructs that have been previously validated, or when validated against a behavioral (criterion) variable. One expects that, instruments of similar

constructs will correlate significantly when coefficients are generated between subscale pairs of similar constructs. This process validates the proposed constructs represented by each factor of the new scale.

Purpose

The purpose of this study was to conduct a series of analyses to empirically validate the CSAAS scale. First, the CSAAS was examined using a confirmatory factor analysis (CFA) program computed with the SAS statistical software. The goal of confirmatory factor analysis is to explore the plausibility of an a priori hypothesis. A priori hypothesis for this study suggests that the CSAAS is a four-factor scale, operationally defined in terms of Festinger's (1964) attitude development theory.

Second, a higher-order factor analysis was conducted on the CSAAS to investigate the existence of a second-order factor of the CSAAS (Marsh & Hocevar, 1985). The second-order factor, hypothesized to be attitude, is the more abstract latent variable influencing the first-order latent variables. Higher-order factors can be more informative in CFA, as they may explain correlated errors of the first-order factors (Bollen, 1989). For instance, the hypothesized subscales of the CSAAS--Cognition, Values, Affect, and Behavior--may represent different dimensions of attitude.

Third, subscales of the CSAAS were examined with specific subscales of the California Psychological Inventory (CPI) to establish construct validity. The CPI subscales were selected because the manual reported that they represent similar constructs as the subscales hypothesized for the CSAAS. The CPI subscales used here are; (a) intellectual efficiency, (b) well being, (c) tolerance, and (d) socialization. Descriptive data on each scale are provided in the instrument section.

The specific research questions addressed in this study are as follows: (a) Is the CSAAS composed of four attitude factors, cognition, values, affect, and behavior, as defined in this study?, (b) What evidence exists, if any, that the four subscales of the Child Sex Abuse Attitude Scale (CSAAS) represent a higher-order factor?, (c) What evidence exists, if any, for convergent and discriminant validity between the CSAAS subscales and similar subscales on the California Psychological Inventory (CPI): Well being (Wb), Intellectual Efficiency (Ie), Tolerance (To), and Socialization (So)?

Attitudes

The composition as well as the process of attitude development was studied in numerous ways as early as the beginning of the nineteenth century. The initial belief was that if one could accurately measure attitudes, one could predict behavioral outcomes based on that measurement. Both unidimensional and multidimensional views of attitude were studied as well as the method of attitude development. For instance, social learning theory emphasized the impact of social factors in attitude development (Festinger, 1957; Rosenberg et al, 1969; Rokeah, 1970), while the behavioral perspective of attitude development stressed the impact of environmental stimuli and reinforcements (Doob, 1947).

A multidimensional approach to attitude study was adapted by Gordon Allport, as he argued for the complexity of attitudes, namely that they are comprised of affect as well as cognition. This multi-component view of attitude surfaced just prior to the 1970's. Nevertheless, unidimensional studies of attitudes continued with research findings advocating for the data link between behavior and attitude. The predominant perspective in attitude research was to predict behaviors based on self-report measures of attitudes on specific events or objects. However, differences between behaviors measured on self report attitude surveys and actual behavioral outcomes demonstrated by respondents were found in unidimensional attitude studies. For example, Lapiere (cited in Rokeah, 1970) surveyed hotel owners to see if they would rent rooms to Asian individuals. While the hotel owner self-reported that they would not rent to Asian individuals, when they came face-to-face with Asian customers, they did rent to them. Similarly, Coney (cited in Horne, 1989) measured attitudes on classroom cheating, whereupon subjects self-reported that they would not cheat on a test, when in fact, actual behavioral outcomes indicated they would. Therefore, no correlation between attitude and behavior was found, resulting in a failure for attitudes to predict behavior.

Doob (1947) attempted to explain this phenomenon using behavior therapy, whereby the attitude (mediating response) must be learned. Therefore, a person must learn the attitude as well as learn the specific overt response to the attitude. The outcome behaviors (positive or negative) depend on the nature of the reinforcements the individual received. In a continual process to link attitudes to specific behaviors, a multi-component view of

attitudes emerged. Krech and Crutchfield (1948) defined attitudes as a multidimensional organization of motivational, emotional, perceptual and cognitive processes. Hence, researchers continued the examination of a multidimensional triad of cognition, affect and conation (Cartwright, 1949; Smith, 1947; Katz & Scotland, 1959).

Rokeah (1970) defined attitudes as relatively enduring organizations of interrelated beliefs that describe, evaluate, and advocate behavior with respect to an object or situation. A change in one part of an individual's attitudinal system produces cognitive strain or inconsistency within, or among, the interrelated systems. Thus, Rokeah postulated that a person's social behavior is mediated by their attitude and often represents a person's belief about ideal modes of conduct. Therefore, understanding the individual's attitude would allow one to predict a behavioral outcome based on that attitude.

Fishbein and Ajzen (1981) theororized that when measuring attitude to predict and understand intentions one must be sure that the attitude and intention correspond to each other. Second, one's subjective norm may restrict one's behavior. Subjective norms refer to the person's perception that others, whose opinion is valued, would expect them to behave in a certain manner. Thus, the more a person perceives that influential others think s/he should perform the behavior, the more one will intend to do so and change the attitude to fit. Variations in behavior would occur as a function of behavior as well as individual differences.

Fishbein and Ajzen (1981) further postulate that beliefs or values are primary elements of a person's attitude and may serve to determine behavior. The attitude is, therefore, determined by a person's salient beliefs about the object or event. Based on their conceptualized link between one's attitude and one's behavioral intentions, the first step in predicting behavior is to obtain a measure of the person's attitude toward his own performance of the behavior in question.

Measurement of attitudes. Thurstone developed a continuum in attitude measurement ranging from positive to negative, by examining individual scores on a bipolar affective dimension. Thurstone proposed to examine people's opinions or beliefs as expressed verbally through analysis of people's verbal responses across all instrument items. Thurstone endorsed examination of a person's patterns of responding as well as emphasizing that there is no relation between attitude and any given behavior.

In an attempt to simplify scoring methods, Renis Likert (1932) developed the Likert scaling procedure, which requires the participant to respond to each item via a multi-point scale ranging from 1 (strongly agree) to 5 (strongly disagree). Items were summed across all items, for example, a 10-item test with responses ranging from 1 to 5 could have a total score of 5-50; the higher the score the more favorable the attitude. The final single score represents the degree of favorable or unfavorable attitudes of the respondent. Again, it should be noted that a given attitude score can reflect different patterns of beliefs, intentions, and actions (Ajzen & Fishbein, 1977). Rokeah (1979) encouraged broad conceptualization about organization of beliefs, attitudes and values into a total cognitive system. A change in any part of the system might affect other parts of the system and behavior. Total systems serve the function of maintaining and enhancing self-conceptions.

Methodological limitations in measurement of attitudinal organization and change do exist. For instance; (a) short-term versus persistent attitude change depends on the emphasis and magnitude of need to change, (b) outcome variables of attitude change are difficult to measure, and (c) paper pencil versus behavioral measures of attitude change may provide significantly different results. Ethical limitations include; (a) laboratory studies vary in level of coercion versus voluntary participants, (b) invasion of privacy, (c) feedback to participants is difficult, and d) debriefing of participants is not always possible.

Child Sex Abuse

Accuracy in reported numbers of CSA. The National reporting agencies note that methods of documenting child sex abuse are inconsistent. For instance, at the national level, the lack of a standardized federal reporting system results in inaccurate values for the incidence of child sex abuse. At the state level, inconsistencies in methods of reporting CSA incidents across agencies further distort aggregate statistical data. For example, one national source indicated that approximately 63% of females and 34% of males will experience CSA by adulthood, while another national source reported that one out of four (25%) females and one out of seven (14%) males will experience sex abuse by adulthood (National Resource Center on Child Sex Abuse, 1991).

Accuracy in reported numbers is also affected at the individual case level. For instance, professionals may withhold reporting due to lack of training, fear of the complex issues, and fear of making false accusations. Whereas, the child victim may not disclose a sexually abusive incident due to the perpetrator using intimidation, coercion, or alternate repressive techniques (Vevier & Tharinger, 1986). At the state level, legal definitions of child sex abuse may vary significantly, ranging from an obscene phone call to actual penetration with a sexual organ. Description of a child may range from 12 to 18 years of age across the states, further reducing the accuracy of child sex abuse incident reporting. Despite reported inconsistencies in data collection and individual case reporting, many professionals and national policy makers agree that the incidence of child sex abuse is on the increase.

School programs concerning CSA. The need to implement new programs as well as maintain existing programs in the schools has been emphasized by many researchers (Batchelor et al., 1990; Myers, Jones, Thomas, & Semlar, 1986; O'Day & Shores, 1983; Tharinger et al., 1989; Vevier & Tharinger, 1986). Tharinger et al., (1989) conducted a survey consisting of questionnaires mailed to 1,121 school psychologist members of the National Association of School Psychologists (NASP). The survey questions inquired about numbers of cases reported, legal witness experience, consultation to staff, and experience counseling sexualized or abused students. Of the 414, or 37% returned surveys, only 6% of respondents indicated direct delivery of student services for CSA matters. Batchelor et al., (1990) surveyed 500 members of NASP resulting in 171, or 34% completed responses, representing 1% of the total NASP registered school psychologists. A summary of returned data indicated that 100% had made mandated reports of CSA, yet only 44% acknowledged the availability of CSA services within their schools.

Discrepancy in service delivery and need. The research suggests wide discrepancies between reported cases of CSA and service delivery within the schools. While system-wide programs are noted by some, the need for increased numbers of CSA programs appeared evident. In regard to the survey return rate, a 60 to 70% return rate is desired by researchers (Borg & Gall, 1989). Does the minimal return rate found in past studies (35% & 35%) indicate a lack of awareness about CSA issues in general, or is the low return rate a factor of nonfavorable attitudes towards working with students who have been sexually abused? Further investigation of attitudes about

CSA may provide empirical data about any preexisting attitudinal barriers that may inhibit the school psychologist's level of involvement with CSA issues (Myers et al., 1986; Tharinger et al.,1989; Vevier & Tharinger, 1986). Johnson et al., (1990) and Tharinger et al., (1988) emphasized the need to develop an instrument to examine the professional mental health workers' attitude concerning CSA. The inferences drawn from the above literature have fueled the development of the CSAAS instrument in an attempt to examine attitudes concerning CSA in an in-depth manner.

Construct Validity of Test Instruments

Validity of a test instrument is the degree to which empirical evidence and theoretical relationships support the adequacy and appropriateness of inferences made based on test instruments or other modes of assessment (Messick, 1994). To obtain a certain degree of confidence in the construct, multiple sources of evidence are required and should address validating not only score meaning, but also value statements and action outcomes. Validation efforts of a test would be essential in cases where social consequences, such as scores used for applied decision making, are intended by the test developer. Messick stated that although validity itself is a general term and there are several different types of validity. For instance, content validity, predictive validity and construct validity all pertain to the underlying proposed construct measured as well as a criterion related measure. Messick (1994) and Crocker and Algina (1986) recommended that content validity is based on professional expert judgments about the relevance of the content of each test item. Overall construct validity evaluates the qualities a test measures by determining which constructs account for performance on a test.

A construct, as described by Messick (1994), is a latent variable acting as a causal influence to account for the relationships among its indicators. Inferences of a construct being highly plausible, rather than explicitly defined, render the idea of a construct as an open concept (Messick,1994). Construct validity offers overall comprehensive evidence that embraces the other types of ad hoc validity, such as predictive, concurrent, and content validity. For construct validation to occur, evidence of scientific admissibility must exist within a theoretical framework, and at least some of its variables should be observed (Cronbach & Meehl, 1955).

Construct linkages and inferences. The concept of construct validity is often described as making construct measure linkages. Emphasis is placed on the fact that construct validation is the essence of validation, supporting the inferences we make from test scores, not the attributes of the tests or test items themselves. Binning and Barrett (1989) indicated that evidence of validity is now viewed as a process of theory development and testing. The measures used to operationalize constructs should possess a logical relationship to the constructs as well as maintain an empirically consistent relationship to other measures of the construct. The most diverse evidence supporting inferences often takes the form of judgments and empirical evidence regarding convergent and discriminant validity (Campbell & Fiske, 1959). Limitations raised by Messick (1994) for context-specific validity are inherent to this study, since the CSAAS is designed to be context-specific. For instance, limitations include limited generalizability of inferences made based on resulting scores from specific target groups.

Convergent and discriminant validity. The concepts of convergent and discriminant validity simply state that for convergent validity to exist, the instrument being reviewed should be empirically associated with instruments of similar constructs previously validated. In contrast, for discriminant validity evidence, the instrument being validated should empirically indicate a low association or nonexistent relationship with measurements of dissimilar constructs. Construct validation of psychologically based instruments has been studied through the evaluation of associations based on computed correlation coefficients (Campbell & Fiske, 1959; Marsh & O'Neill, 1983), by factorial simulation through factor analysis techniques (Rummel, 1970; Tabachnick & Fidell, 1989), and through hierarchically nested structural equation models (Bollen, 1989; Byrne, 1989; Hayduk, 1987; Widaman, 1985).

Method

Participants

The National Association of School Psychologists (NASP) estimates its members to be 16,601 ranging across nine membership categories for working professionals in the United States and 22 foreign countries (see Table 1). For purposes of this study, sampling was conducted by random selection from 12,411 professional working

NASP members residing in the United States only. Four-hundred professional members of NASP's membership list dated November, 1994 were invited to participate in the study. NASP provided these labels by stratified sample, proportioned to the number of NASP members represented in each of the 50 United States, computed by the researcher by dividing the each state's membership number by the NASP total United States resident members (12,411). Table 2 provides a listing of the proportion of members in each state, number of requested participants, and actual return rate from each state. Approval from the Human Subjects Review Committee was obtained prior to conducting this study.

Instruments

The complete survey packet consisted of three instruments: (a) the CSAAS, (b) the five CPI subscales, Wb, To, Ie, So, and (c) the demographic questionnaire. The demographic questionnaire contained items concerning personal characteristics, school district descriptors, and task assignments; including existing CSA programs offered in the schools and work experience with CSA cases. The traits (constructs) being measured, response formats, and the instruments being used to represent each trait are summarized in Table 3. The construct validation to be conducted through a MTMM method of analysis was performed by correlating the CPI subscales, Ie, To, Wb, So with the CSAAS subscales, Cognition, Value, Affect, and Behavior.

The Child Sex Abuse Attitude Scale (CSAAS). The Child Sex Abuse Attitude Scale (CSAAS) is a 24-item self-report survey developed by this researcher. The response choices consist of a five-point Likert format ranging from 1 (strongly agree) to 5 (strongly disagree). The items for the CSAAS attempt to measure the combined four factors of attitude as conceptualized by Festinger (1957) and Rosenberg et al., (1969). Latent variables included in the conceptualization of attitude are: cognition, values, affect, and behavior.

A latent variable is a variable that cannot be directly measured, yet is assumed to have a causal influence on observable variables. Because an unobserved variable cannot be directly measured, one attempts to identify measurable variables influenced by the latent variable. In this study, the observable variables became the 12 item-pairs of the CSAAS hypothesized to measure indirectly the latent endogenous variables of cognition, values,

affect, and behavior, which are theorized to be influenced by the higher-order latent exogenous variable, attitude.

The initial item writing was conducted by a group of three mental health professionals familiar with CSA issues, one of which was also a school psychologist. Initially, 70 items were generated in an attempt to double the actual amount of items desired on the scale to allow for the deletion of items following respondents comments and item performance once they were pilot tested (Crocker & Algina, 1986). The items were reviewed to assess content validity of the CSAAS. Item content addressed issues relevant to each of the four dimensions of the CSAAS: cognition, values, affect, and behavior. Crocker and Algina (1986) recommended varying the item stem to form different item contents in each domain. Professional school psychologists reviewed the original 75-item scale. Feedback resulted in a reduced 70-item survey to be pilot tested with two sample groups.

The first pilot test was conducted using fifteen school psychologists in a south Florida suburban school district completed the survey during an in-service program. Following the first pilot test, an item analysis procedure was used to examine each of the 70 items for retention in the CSAAS. The goal of this item selection was to improve test score reliability by selection of items that discriminate on internal criteria, while maximizing total test score reliability (Crocker & Algina, 1986). Therefore, item retention was based on the magnitude of the coefficient of the item-total-score contribution found among the first pilot test sample. The Cronbach alpha index of internal consistency reliability is recommended for weighted response items, such as, when using a Likert response format (Crocker & Algina, 1986; Mueller, 1978). Item content review also required examination of respondent comments and expert judges' comments. Items considered invasive, inappropriate, or too blatantly written, as commented by participants were either deleted or modified. A reduced 30-item survey yielded a Cronbach's coefficient alpha internal consistency of .82, based on the sample of 15 school psychologists.

A national sample of 84 school psychologists participated in the second pilot test of the 30-item survey. Item analysis required review of item-total score correlations and rater comments which resulted in deletion of two items, thus a reduced 28-item survey. Cronbach's alpha internal consistency procedure yielded an index of .88 for the total scale; subtest indices of internal consistency ranged from .67 to .82. These internal consistency indices are considered acceptable for attitude measures representing a psychological construct (Cronbach, 1955).

An exploratory factor analysis, conducted on the reduced 28-item survey results from the National sample of 84 school psychologists, yielded encouraging results. One must, however, use caution when interpreting results of the factor analysis due to the small sample size. Tabachnick and Fidell (1989) recommend a minimum of 10 cases per variable for factor analysis procedures; however, with a sample size of 84, only three cases per variable could be factor analyzed. Factor loadings and communality estimates were based on principal factor analysis procedure with promax, oblique rotation. Items appeared to be well represented with factor loadings ranging from .30 to .86; Rummel (1970) recommends a minimum of .30 for acceptable factor loadings. Eigenvalues obtained for each factor (a) Cognition, (b) Value, (c) Affect, and (d) Behavior, are 4.76, 2.91, 2.86, and 3.13, respectively. Factor analysis results indicated that 90% of the initial variance was accounted for within the solution. Overall results at that point, were encouraging in terms of substantiating a four-factor structure of the scale.

Following a third further review of the item-content on the CSAAS by item-writing experts, an additional two items were added to the Behavior subscale, one item added to the Affect subscale, and one item was deleted from the Cognition subscale. Thus, resulting in a final 30-item scale that was used in this study. Four hypothesized subscales were comprised of the following items: Cognition-eleven items, 2, 3, 4, 6, 7, 8, 9, 14, 19, ,23, 26; Value-six items, 5, 11, 13, 16, 18, 20; Affect-seven items, 10, 15, 24, 25, 28, 29, 30; Behavior-six items, 1, 12, 17, 21, 22, 27.

The California Psychological Inventory. The California Psychological Inventory (CPI) is a personality inventory designed to assess what people say and do in everyday settings. Harrison Gough developed the initial version of the CPI in 1948. Publication of the first 480-item edition occurred in 1956. Additional scales developed by Gough and other researchers throughout 1952 are currently used in the revised version of the CPI (Megargee, 1972). The CPI items comprise 18 subscales representing four class levels, or groupings, designed to facilitate clinical interpretation of the profile, rather than psychometric factors or clusters. Class I grouping represents concepts of poise, ascendancy, self-assuredness, and interpersonal adequacy. Class II grouping represents socialization, maturity, responsibility, and interpersonal structuring of values. Class III grouping

represents achievement potential and intellectual efficiency, while, class IV grouping represents items of cognition and interests. The revised CPI Administrator's Guide (Gough, 1987) maintains that the purpose of the CPI is to measure everyday personality traits in normal individuals ranging in age from 12 to 70; a fourth grade reading level is reported in the manual. Because this study required the use of an instrument normed on normal adult professionals as was the CPI, and several CPI subscales appeared to relate theoretically to the hypothesized subscales on the CSAAS, the CPI was deemed to be an appropriate scale to use for the validation section of this study. The selected subscales included, Well-being, Intellectual efficiency, Tolerance, and Socialization.

Well-being (Wb). The individual's effectiveness within his/her environment is said to be a function of physical and psychological well being, therefore, item content consists primarily of denials of various physical and mental symptoms, thus denoting positive affect. High scores are said to indicate one who experiences healthy affect and is optimistic about the future; whereas, low scores may be indicative of an overall pessimistic affect.

An internal consistency alpha coefficient is reported as .81, for a college student population of 400. High validity coefficients are indicated for the Emotional Stability subscale of the Guilford-Zimmerman Temperament Survey (GZTS); .72 for males and .60 for females. Therefore, one would anticipate a low scorer on the *Affect* subscale of the CSAAS would also score high on the *Well-being* subscale of the CPI.

Intellectual Efficiency (Ie). A high score obtained on the Intellectual-efficiency (Ie) subscale suggests efficient use of intellectual ability and persistence on a task. A low score on Ie suggests one who has a hard time getting started on things and seeing them through to completion. The item content of the Ie reflects interests and perception of intellectual ability, such as, "I seem to be as capable and smart as most others around me".

The revised CPI Administrator's Guide (1987) reported an observed alpha coefficient of .72 for a sample of 400 college students. A test-retest procedures yielded a reliability index of .79 for a sample group of 128 females and .72 on high school males. Moderate to high validity indices are reported (Gough, 1987) for a correlation between Ie and numerous other measures of intellectual abilities. For instance, when correlated with the Termon Concept Mastery test on a sample of 100 military officers a .58 validity index resulted. Based on the subtest description, one would anticipate a negative correlation between the Ie subscale and the Cognition subscale of the CSAAS.

Tolerance (To). The Tolerance (To) subscale of the CPI falls within the Class II grouping of variables representing socialization, maturity, responsibility and interpersonal structuring of values. Gough (1952) named the 32-item subscale Prejudice (Pr): renamed Tolerance (To) on the revised CPI and reduced to a 30-item scale. A high score is indicative of tolerance of others; Whereas, a low score would suggest judgmental views and non-tolerance of others.

An internal consistency alpha coefficient of .68 is reported with a reliability index ranging from .63 to .73 for parallel forms and test-retest respectively. Construct validation of the CPI with the Taylor Manifest Anxiety Scale indicated an inverse -.31 index for males and a -.35 index for females. Therefore, one would expect that an individual low on anxiety would tend to score high on the To subscale of social values--implying a more tolerant attitude toward others. Based on the above empirical studies, Tolerance, as measured on the CPI, would appear to represent similar constructs as operationally defined for the Values subscale on the CSAAS. One may anticipate a negative significant correlation between the CPI, To subscale and the CSAAS, Values subscale.

Socialization (So). Gough (1987) states a high scorer on the Socialization (So) subscale represents an individual who comfortably accepts ordinary rules and regulations; Therefore, the individual would behave in a socially acceptable manner. A low score suggests that an individual is less influenced by perceived socially acceptable standards. Reliability studies conducted on the 1987 norming sample indicated an alpha coefficient of .71 for a reduced 46-item scale. Validity indices on the *low anxiety* subscale of the OPI and *So* subscale of the CPI, are .61 for males and .43 for females; representing a moderate positive correlation between level of anxiety and level of socialized behaviors. High scores on the *behavior* subscale of the CSAAS suggest individuals who tend to behave in accordance with existing social norms, or external influences. It therefore follows that an individual with a high score on the Behavior subscale of the CSAAS (external influences affect behavior) would exhibit a high score on the CPI socialization scale--thus reflecting a positive relationship between the two subscales. This relationship differs from the other CSAAS and CPI subscale pairs, as all other relationships are anticipated to be negative or inverse.

Design and Procedure

Participants were invited to respond based on two areas of importance; the seriousness of the problem of CSA and the relevancy of the study to the field of school psychology. Four-hundred surveys were mailed, once they were returned, the coded number on the survey was removed to protect the participant's confidentiality. Follow-up letters were mailed to nonrespondents, based on the coded number of the surveys not returned, and a second survey form was included. The returned surveys totaled 230 indicating a 58% return rate. Fifteen of the surveys were eliminated due to invalid responding or incomplete records.

Data Analysis

The analyses consisted of a confirmatory factor analysis for a first and second-order model, and a correlation analysis using the Multitrait-Multimethod (MTMM) framework. First, an analysis of the CSAAS instrument was conducted using the maximum likelihood method of estimation, which yields an inferential index of fit, the chi square coefficient. Preliminary diagnostic and reliability analysis resulted in a reduced item pool of 24 items. Each of the 24 items were randomly selected within each subscale and paired with a second item of the same subscale, resulting in a 12-item first-factor confirmatory factor analysis model (see Figure 1). Item pairing reduces cumbersome instrument analyses to a manageable variable number and also increases reliability of the statistical results by stabilizing item values (Marsh & O'Neill, 1984). One would expect the item-pairs to load high on the factor it was designated to represent. Each factor should then be represented by the variables (item-pairs) hypothesized to load on that factor.

Second, a higher-order analysis was conducted to examine the overall influence of a higher-order latent variable (attitude) on the four first-order latent variables (see Figure 2). The higher-order factor is expected to indirectly influence the 12 measured variables by its impact on the first-order latent factors (variables). A higher-order general factor can explain the association between the first-order dimensions (cognition, value, affect,

behavior), and thus eliminate the correlated measurement errors of the first-order model (Bollen, 1989; Hayduk, 1989; Tanaka & Huba, 1984).

The overall measure of fit associated with the CFA model provides an index of the fit between the hypothesized model and the sample data. The chi square statistical test provides the index of model fit. When a nonsignificant chi square is obtained, the hypothesized model is said to be empirically plausible. The next step in interpreting the CFA model is to assess parameter estimates. A significant parameter estimate is indicated if the t-value is greater than two. Additionally, model residuals are expected to represent values of zero or close to zero (Bollen, 1989; Byrne, 1989; Hayduk, 1987).

Third, following the CFA, a series of five correlational analyses were performed. First, each CSAAS subscale score was correlated with corresponding subscale scores of similar constructs. The anticipated CSAAS subscales included cognition, values, affect, and behavior, whereas, CPI subscales included Intellectual-efficiency (Ie), Tolerance (To), Well-being (Wb), and Socialization (So). Construct validity was explored using Pearson correlations for variable pairs, each pair representing an element within the multitrait-multimethod (MTMM) framework representing a two by four MTMM. The two methods of measurement were the true-false responses of the CPI instrument versus the Likert response format of the CSAAS, while, the four traits measured were represented by the corresponding subscales of the CPI and CSAAS (see Figure 3).

In keeping with Campbell and Fiske's (1959) concept of convergent and discriminant validity, one would expect the correlations between CSAAS and CPI subscale pairs of similar constructs to correlate significantly (converge), and subscales of dissimilar (discriminant) constructs to correlate to a lesser degree. A test of statistical significance (Meng, Rosenthal, & Rubin, 1992) was applied to correlations to assess whether the magnitude of the correlations represented significantly similar constructs (convergent) or different constructs (discriminant). The resulting statistical test provides an empirical basis for determining discriminance and convergence among the set of correlation coefficients presented in the multitrait-multimethod matrix.

Results

Participant Demographics

Valid returned surveys represented 35 states within the United States; NASP members from 15 states did not respond to the survey as noted in Table 2. Response rate varied from each state with New York the most highly represented state, accounting for 25% of the total sample pool. To compare the current sample to the actual NASP population, the respondents were collapsed into the five regional categories of NASP membership (see Figure 4). The greatest percent of respondents (40%) were affiliated with the Northeastern NASP group. Although 235 surveys were returned, 15 had to be discarded due to invalid responding, missing pages, or response patterns that appeared to represent random responding--resulting in 54% of the surveys mailed actually used in the study. It should be noted that the length of the survey package extended five due to the inclusion of three instruments with a total of 278 items. Based on the length of the survey, final return rate was encouraging as well as appreciated. Enthusiasm for the study was noted by the respondent comments on the returned surveys offering encouragement to pursue research on the subject of CSA and 60 respondents requested a copy of the final written report.

The demographic survey provided information pertaining to the participants educational level, employment status, grade level of assignment and other demographic variables. The educational level of participants were as follows; 40% Masters of Science Degree, 30% Specialists Degree, and 27% Doctorate level degrees (see Table 4). The numbers may reflect duplicate degrees for the some individuals. Eighty-four percent reported 10 years or greater experience as a school psychologist and 90% reported their age as 36 years of age or older; gender ratio of the sample was 34% males and 66% females.

Full time employment was reported by 84% of the participants, 50% reported an elementary grade level assignment, 36% reported district wide job assignment, and 33% reported middle school job assignment. Another 31% reported high school grade level assignment, while another 13% were assigned to preschool programs.

When asked about the type of CSA programs that are currently available to students within their school district, if any, 63% reported that staff consultation services are provided. Individual counseling services for CSA issues were available within the school district of 60% of the participants, and 19% of the participants reported that CSA support groups were available in their school districts. Another 33% of participants reported that CSA prevention programs were offered in their school districts.

Professional experience in providing CSA programs was reported as follows; 62% reported conducting crisis intervention, 60% reported staff consultation services, 42% reported conducting parent consultations, 36% and 33% reported providing CSA prevention and intervention programs, respectively.
In terms of school district type, 42% of respondents were categorized as being from suburban school districts, 29% from rural school districts, and 29% from urban school districts.

The data are representative of older, more experienced professional school psychologists; the highest number of reported CSA cases reached 55 for one respondent who had reported 30 years experience. Response patterns indicated that, as a whole, adequate training for statutory guidelines was reported. For example, for item 4 (I am knowledgeable about my state's statutes concerning CSA) 85% responded in agreement, and for item 8 (I am familiar with my school district's written policy concerning CSA reporting) 85% responded in agreement. In contrast, item 17 (I would like to develop CSA programs in my school) was agreed to by only 38% of the respondents.

Previous training on the topic of CSA was reported as reading journals or books by 86% of the sample, followed by CSA workshops attended by 72% of the sample. Fifteen percent reported acquiring training through a university system. Apparently, most of the school psychologist's educational training for CSA issues is acquired either through self initiated reading or CSA workshops. The number of CSA cases reported ranged from a low of zero to a high of 55; the mean number of reported cases was 14.

Preliminary Analyses

The CSAAS responses were derived from a five-point Likert format ranging from 1 Strongly Disagree to 5 Strongly Agree. CSAAS composite score ranged from a low score of 26 to a high score of 80, resulting in a

standard deviation of 10.47 score points across subscale scores. CSAAS subscale means were: Cognition 10.28, Value 12.22, Affect 10.13 and Behavior 14.73. The CSAAS composite score mean was 47.37, while individual item means ranged from 1.3 to 3.56. One should note that the maximum score point obtainable on the CSAAS composite score was 120, yet the maximum score obtained from this sample of school psychologists was 80; thus, a total of forty score points in the high (non-favorable) range of scores were not responded to by the participants.

Normality and linearity are assumptions underlying the CFA process used to address research questions 1 and 2. One criticism of the structural equation model (SEM) process is that estimators of SEM models may have no merit if the observed variables (variable pairs) do not have a multinormal distribution. Although there are techniques to remedy this situation if nonnormality is unavoidable when conducting SEM, the optimal goal is to use normally distributed variables as the indicator variables (Bollen, 1989, p. 79). SAS proc univariate procedure was conducted to examine normality of the twelve variable pairs used as indicator variables in the CFA procedure. The skewness value (- .1 to + .1) was applied when assessing nonnormality of the variable pairs when conducting these transformations (Bollen, 1989; Tabachnik & Fidell, 1986).

Two subscales rendered skewness values which departed from normality as follows: Cognition 1.67, Wb -.18 (bimodal). Although the skewness value of Wb fell within the acceptable range of acceptance (-1. to +1), the bimodal distribution violates the assumption of normality inherent to the statistical procedures used in this study. Therefore, log transformations were computed to meet the assumption of normality. The transformed distributions rendered the following skewness values: Cognition .68, Wb .95 and Distance .17 . The remaining CPI subscales, Ie, To, and So did not require transformations to reach an acceptable value of skewness.

Distributions on the nontransformed 12 variable pairs ranged from a low of .05 (A8) to a high of 2.26 (B10). Four variables-pairs required no transformations, while eight variable-pairs required transformations based on the designated criterion (-.1 to +.1) for nonnormality. The newly transformed variables were reexamined for normality using the SAS proc univariate procedure. Skewness values obtained following reestimation of

normality on the 12 variable pairs, C1 C2 C3 V4 V5 V6 A7 A8 A9 B10 B11 B12, resulted in the following values for skewness: .13, .12, .20, .31, .88, .23, .09, .05, .42, .11, .69, .23, respectively.

Multicollinearity and singularity and CFA. Two procedures were used to screen for multicollinearity (Tabachnik & Fidell, 1989). First, visual inspection of the correlation matrix of the CSAAS variable-pairs revealed modest estimates of correlations with the highest coefficient reported as $r = .56$ between CSAAS items. Based on the conventional value used to determine multicollinearity of.90 or greater (Tabachnik & Fidell, 1986), this finding represented a modest estimate of the variances and covariances of the variable-pairs. No multicollinear associations were identified, therefore, multicollinearity did not appear to threaten analytic outcomes on this data set.

Second, Bollen (1989, p. 58) defines multicollinearity as the extent to which a linear dependence exists between an explanatory (latent) variable and other explanatory (latent) variables in the equation. Collinearity may increase the standard errors of the coefficients of the collinear variables, and the increased standard error results in greater uncertainty of inferences that can be made about the CFA parameters. The unique effect of the collinear variable is difficult to assess if its magnitude fluctuates depending on other variables in the equation. One must visually examine the correlation between the latent variables in the equation of CFA model. If the measured variable depends on two highly correlated latent variables, an exact partitioning of variance is not possible. For instance, correlations close to or greater than .90 between latent variables would suggest a problem of collinearity.

Bollen (1989, pp. 205-206) proposes that one would calculate the SMC coefficients resulting when one independent latent variable (KSI_1) is predicted from the other independent latent variable (KSI_2) that has a direct effect on the measured variable (x_1). If the generated value of SMC is large, close to .90 or greater, a high degree of collinearity may explain the low unique validity variances.

The maximum likelihood method of estimation assumes multinormality and requires a non-singular matrix representing no non-linear relationships among variables (Joreskog & Sorbom, 1988). If a singular matrix is found, a linear dependency among elements in the measurement model should be investigated. Bollen (1989) does recommend that the non-linear variables could be deleted and replaced with linear independent variables or transformation to the variables could be computed. Either visual inspection of the correlation matrix (values < .90) or examination of the coefficient of determination (COD) of the correlation matrix may readily provide warnings of this occurrence. The COD is an indication of how well the observed variables, combined, serve as measuring indicators of the latent variables. Values of COD range from 0 to 1: The closer to 1 the COD approximates, the better the fit (Byrne, 1989, p. 55). This value summarizes the joint effect of the latent variables on the observed ones in CFA (Bollen, 1989, p. 289).

Singularity and multicollinearity distort parameter estimates, which also impact the value of COD. Singularity occurs if a variable is perfectly related to others in the equation, identified by a SMC of 1. Whereas, multicollinearity represents highly correlated variables and is identified by SMCs of .9 of greater. If one suspects multicollinearity the UWLS method of estimation may be more effective, but that would result with no inferential statistical test, i.e., chi square.

Sample Size. The determination of adequate sample size when conducting a CFA has not yet been established with a hard and fast rule. Boomsma's (1983, p. 119) simulation work suggested that the chi-square estimator is not accurate for samples smaller than 50 and recommends 100 or more cases. Anderson and Gerbing (1984) suggested samples greater than 100. In both studies, with small samples, it was found that chi square test statistic tended to be too large, thus led to rejection of the null hypothesis. Another guideline for sample size is that the greater the number of free parameters in a model, the greater N should be. Bollen, 1989) suggested that one should have at least several cases per free parameter. Free parameters within the higher-order model are calculated as $[p(p+1) / 2]-t$ where p=the observed variables and t = the estimated (free) parameters. Estimated parameters for the higher-order model are as follows: 12 factor loadings, 12 error terms, 4 structural paths, and

1 disturbance term, thus t=29. If one follows Bollen's formula and interprets several to mean three, a minimum of 87 cases should be used in the analysis. Because none of the above approaches to estimating sufficient sample size has been established as a hard and fast rule, more recent attempts to quantify the desired sample size have been accomplished through unpublished computer programs, written by an anonymous author.

A power analysis, conducted with SAS software for structural equation modeling and confirmatory factor analysis models, indicated a minimum sample pool of 214 was required to obtain effective results for the specified model using 12 CSAAS item-pairs for indicator variables. Item pairing is an analytic procedure recommended by Marsh and O'Neill (1984) to minimize sporadic parameter estimates and increase reliability of scale items. Individual items of a subscale are randomly paired with another item of the same subscale membership. This method of forming composite variables allows one to handle the scale items in a more efficient manner, particularly analyzing lengthy scales. Furthermore, the adequate sample size required to conduct the analysis is reduced because sample size for CFA is estimated by number of variables in the analysis, similar to traditional factor analysis. Minimum sample size was met with the valid protocols retained in this sample pool.

Sample Per Each Research Question. Research question 1 required that a confirmatory factor analysis be conducted using the valid sample pool of 215 participants who submitted the completed CSAAS 30-item survey. For traditional factor analytic procedures, a minimum of five cases per variable (Tabachnik & Fidell, 1989) to a maximum of 10 cases per variable (Rummel, 1971) is recommended. An appropriate sample size for working within the structural equation modeling framework has not been established, thus one may chose to apply the traditional factor analysis policies in regard to sample size. A distinction should be made if the maximum likelihood method is used to estimate model fit, then the chi square statistic is used as an index of statistical significance. The chi square statistic is dependent on degrees of freedom which is calculated as a function of sample size. The sample size of a CFA study using the maximum likelihood method must be predetermined to allow for a large enough sample size to ensure accuracy in conclusions drawn from the fit statistics. The calculation of adequate sample size for this study was addressed above in the section on sample size. Due to the paired-item procedure used to analyze the CSAAS internal validity, the actual sample pool resulted in approximately 17.9 cases per variable-pair.

Research question 2 required a CFA to explore whether a higher order factor could be established for the CSAAS. The same procedure for item-pairing was used to examine the CFA-higher order model, resulting in 12 variable pairs with 17.9 cases per variable-pair.

Research question 3 required a correlational analysis to explore convergent and discriminant validity between CSAAS subscales and similar subscales on the CPI: Intellectual Efficiency (Ie), Tolerance (To), Well Being (We), and Socialization (So). Following examination for outliers and listwise deletion of cases with missing data, an average sample pool of 186 resulted across variable-pairs; the actual number of cases examined across each matrix element ranged from 175 to 215 cases.

Reliability of Study Measures

The Cronbach alpha procedure was used to compute the reliability estimates. Cronbach (1951, p. 42) emphasized that alpha coefficient should (a) be used as an index of internal consistency, (b) be considered a lower bound estimate to a theoretical reliability coefficient, such as coefficient of precision, and (c) not reflect the unidimensionality of a test. Nunnaly (1978) noted that items of a heterogeneous nature contribute more additive variance, which can increase the magnitude of coefficient alpha. This procedure generates Cronbach alpha coefficients for the individual subscales by computing alpha coefficients representing the amount of variance that each item contributes to each hypothesized subscale. The values yielded by the SAS program provide an alpha coefficient to determine whether each item contributes to the overall internal consistency of each subscale.

Reliability Estimates of the CSAAS. The CSAAS was developed based on the belief that the scale represents four distinct constructs, each contributing to a composite CSAAS score; therefore, a composite score of the four CSAAS subscales was also examined in this study. Alpha coefficient procedures were conducted on each subscale in order to examine each item, respective to item-scale membership. Results of the procedure yielded total scale alpha values as well as alpha values that would occur whether the item was deleted. Examining the item-deletion value allows one to determine if the item is contributing to the internal consistency of the subscale. Items that

generated item-deletion values suggesting an improved internal consistency if the item were removed were deleted from the scale when item-content review rendered similar conclusions (see Table 5).

The alpha coefficients were uniformly moderately high, indicating a moderate degree of internal consistency among items within each subscale. A total of six items were deleted due to low item-total correlation coefficients indicating a lack of variance contributed by that item. Five items were deleted from the Cognition subscale representing either redundant items or facts about child sex abuse issues that were readily acknowledged by the participants; deleted items were 3, 7, 14, 19 and 26. Item 29 was deleted from the Affect subscale. Inspection of the deleted items indicated that they may have appeared blatantly worded, redundant, or awkwardly constructed (see Table 6a). A listing of item-total correlations by subscale membership is provided in Table 6b.

Reliability of the CSAAS Subscales. Total subscale scores generated Cronbach alphas that ranged from .580 to .748 across subscales (see Table 7). The alpha values represented moderately low to high internal consistency for subscales composed of only six items. Original items hypothesized to contribute to the Value and Behavior subscales during test development proved to be efficient in contributing to the internal consistency of the subscale and all six items were maintained in each respective subscale. To calculate the improvement to internal consistency if the length of each subscale was doubled, the Spearman-Brown Prophecy formula was applied using the observed score reliability quotients (Crocker & Algina, 1986, p. 146). The number of items needed to increase the internal consistency index were computed for each subscale, and the following values of alpha were generated for each subscale: Cognition, 6 items $\alpha = .82$; Value, 6 items $\alpha = .91$; Affect, 6 items $\alpha = .86$; and Behavior, 6 items $\alpha = .86$.

Item-remainder coefficients. Item-remainder coefficients on the Cognition subscale were found to be highest with item 9 (CSA issues are blown out of proportion), as .509 with the Cognition subscale total. The lowest item-remainder coefficient at .435, thus all remaining Cognition items were greater than .435 and contributed well to the total subscale alpha of .725.

Item-remainder coefficients on the Value subscale were found to be highest with item 18 (.368), "'Support groups for survivors of CSA do not belong in the school." Two items, 20 and 13, yielded item-remainders lower than .30, yet still contributed additive variance to the Value subscale. Psychological constructs, such as values,

are difficult to define and quantify, as they represent subjective judgments unique to the individual. The Value subscale is comprised of six items with a low-moderate total subscale alpha of .580. All items hypothesized to contribute to the Value subscale did so.

Item-remainder coefficients of the Affect subscale contributed substantially to the subscale, the lowest item-total coefficient found for item 25 (.435). Subsequent item-total coefficients were greater than .435, cumulating in a subscale total alpha of .737. All items proposed to contribute to the Affect subscale did so-- with the exception of item 29, which was deleted before the major analyses.

Item-remainder coefficient for the Behavior subscale ranged from .376 to .618, with 5 out of 6 item-remainder coefficients being .41 or greater, contributing to the subscale total alpha of .748. Item 17 (I would like to develop CSA programs in my school) yielded the highest item-total correlation at .618. Items anticipated to contribute to variance on the Behavior subscale conformed as expected.

Total CSAAS item-remainder coefficient. Of the final 24 items comprising for the CSAAS, only two items (13 and 20) yielded low item-remainder coefficients of .29 and .26. Five items (16, 5, 11, 18 and 1) yielded item-remainder coefficients of .300 or greater, while 12 items (6, 28, 2, 8, 4, 15, 30, 24, 10, 21, 27) yielded item-remainder coefficients of .400 or greater. Three items (9, 25, and 22) generated item-remainder coefficients with values greater than .500 and two items (12 and 17) generated item-total values greater than .600. The average item-total correlation across all 24 items was .444. Total CSAAS subscale alphas of Cognition .725, Value .580, Affect .737, and Behavior .748, further support the validity of items contributing to each subscale, with some improvement needed to the Value subscale.

Due to the low alpha for the Value subscale (.580), future research may be needed to either modify, delete, or exchange the items that comprise that scale in order to obtain a more acceptable internal consistency index. While one may first propose to lengthen the number of items on the subscale, it should be noted that the other three subscales (Cognition, Affect, and Behavior) are also comprised of only six items, yet yield satisfactory alpha coefficients.

Cautionary note. Coefficient alpha is an index of internal consistency computed from the items comprising the scale. When interpreting coefficient alpha one should recall that this estimate is not an estimate of stability over

time or equivalence of test scores across alternate forms of the scale as is calculated by other methods of test reliability. One should also note that coefficient alpha is a lower bound estimate of internal consistency, rather than the coefficient of precision referring to theoretical reliability coefficients.

Descriptive Information for Items Deleted from the CSAAS

The following six items were deleted from the CSAAS:

3. Survivors of CSA often overreact with promiscuous behaviors
7. I am NOT aware of any training programs addressing CSA issues
14. Incest or molestation occurs to females rather than males
19. I lack the professional training required to consult with staff members on CSA issues.
26. Family incest is very rare
29. When I hear about CSA or family incest I feel sick

If one examines the content of the deleted items from the Cognitive subscale (3, 7, 14, 19, 26), it may be evident that the items were either too obvious or redundant items. Item 3 (Survivors of CSA often overreact with promiscuous sexual behavior) was responded to in an unanticipated direction (agree), which may indicate a stereotyped misnomer overshadowing the school psychologist's perspectives of CSA. It is predominantly cited among CSA literature that many CSA survivors respond by withdrawing from sexual activities as frequently as other survivors of CSA participate in sexual activities. Therefore, although item 3 was deleted to preserve the psychometric properties of the CSAAS, the content of item 3 may be relevant for future training programs concerning CSA issues. Items 7, 14, and 26 are factual items that one would hope mental health workers would have acquired through general readings and professional experience, which may account for the consistent mode of responding by participants. They are also somewhat redundant to the other items in the Cognition subscale.

Item 29, was found to be ambiguous, as noted by several informal comments made by participants through direct telephone calls or in writing on the returned survey. For example, one participant stated she felt confused about answering item 29 because she may feel sick when hearing about CSA, but would still favorably approach the delivery of services for CSA. An individual who reports a negative affect toward CSA issues (high scores on item 29) may still take positive actions towards CSA program involvement. Thus, regardless of the negative or positive affect experienced when confronted with CSA issues, one's response to this item may not be correctly interpreted because of the ambiguity of the item itself.

Item-correlations per subscale membership. Final item-count for the CSAAS consisted of 24 individual items comprising four subscales of 6 items each. Inspection of Table 7 reveals that each subscale indicated item-total coefficients ranging from a low of .267 (CSA20) to a high of .618 (CSA17). The average item-total correlations for Cognition, Value, Affect, and Behavior were .470, .329, .473 and .506 respectively. Overall, 24 (80%) of the original 30 items contributed substantially to subscale internal consistency with sizeable item-total correlations.

CSAAS 24-item means and standard deviations. Distribution of the item means ranged from a low of 1.2 (CSA28) to a high of 3.5 (CSA19). CSAAS average item means for each subscale were: Cognition 1.76, Value 1.97, Affect 1.51, and Behavior 2.46; item standard deviations ranged from a low of .600 (CSA10) to a high of 1.34 (CSA7); subscale average standard deviations were: Cognition, .91, Value .92, Affect .83, and Behavior 1.02 (see and Table 8).

CPI Reliability estimates. CPI reliability estimates were calculated on raw score totals obtained for each subscale: Ie, To, So, Wb, (see Table 9). Alpha coefficients appeared low for Ie and So subscales $\alpha = .570$ to .580 respectively (see Table 9). Tolerance subscale increased somewhat, $\alpha = .650$, while Wb subscale obtained the highest reliability estimate of $\alpha = .730$, and finally, the Gi subscale indicated $\alpha = .650$. Given the length of these subscales (32 to 46 items), all alpha coefficients appeared low, particularly when compared to those presented in the CPI Administrator's Guide (1992). In the Guide, estimates of internal consistency as; Ie .72, To .68, Wb .62, and So .77. To account for the differences in reliability estimates between the original sample group described in the manual and the homogeneous sample group in this study, one must consider the effect of restriction of range.

Gulliksen (1950, p. 144) stated that reliabilities are a property of the test scores on a particular set of examinees and the variance of that group; thus, homogeneity of sample groups can reduce reliability estimates. To address the problem, Gulliksen recommended a formula to reestimate reliability values obtained on homogeneous samples. Reestimation of the reliability values allows one to estimate alpha coefficients as if the population sample was representative of the originally sampled population on which the CPI subscales reliability estimates were calculated. When Gulliksen's formula was applied using the alpha coefficients reported in the CPI Administrator's Manual (Ie .72, To .68, Wb .62, and So .77) internal consistency estimates increased considerably for the CPI subscales used in this study. New alpha coefficient estimates were Ie $\alpha = .81$, To= .77, We $\alpha = .74$, and So $\alpha = .81$ (underlined values in Table 9).

Confirmatory Factor Analysis

The CSAAS items analyzed were based on composite variables comprised of randomly paired-items relative to subscale membership, rather than single items; a method used to minimize sporadic parameters thereby reducing analytic ambiguity and enabling the use of a reduced sample size due to fewer parameters in the model (Marsh & O'Neill, 1984). A priori hypothesis is used with CFA, which assumes that the conceptual model of the instrument was based on sound theoretical underpinnings. Ramifications of using structural equation modeling on an inadequate sample size are numerous. As sample size increases, discrepancies of estimates may decrease, in part based on sample representation. Also model complexity may influence overall discrepancies because as model complexity increases, discrepancy of approximation decreases. Conversely, adding parameters may decrease the sampling discrepancy, and each added parameter may capitalize on idiosyncrasies in the correct sample. Discrepancy of estimates may increase, or decrease, depending on the original sample size. Similarly, in evaluating discrepancy of approximation (model error) one would hope to minimize overall discrepancy, thus indicating a good model.

When analyzing structural equation models and confirmatory factor analysis models, it is customary to present alternative models contrasting overall indices of fit and parameter estimates for each model. Five models were examined as follows (a) a priori hypothesized four factor first-order model (M_{FO}), (b) the first-order null model (M_{NFO}), (c) a priori hypothesized higher-order model (M_{HO}), (d) a higher-order null model (M_{NHO}), and (e) a modified higher-order model (M_{HOM}), (Bollen, 1989; Byrne, 1989).

It was hypothesized that a four-factor structure would represent a plausible model of the underlying dimensions of the CSAAS. Variables analyzed in research question 1 consisted of 12 indicator manifest variables (item-pairs) and 4 exogenous latent variables representing the four-factor structure of the CSAAS. It was anticipated that all items would load onto the factors they were designed to represent. In this study the four factors were hypothesized as: Cognition, Values, Affect, and Behavior. It was further hypothesized that each item-pair would have a non-zero loading on the factor it was designed to measure (the target factor), and zero loading on all other factors (non-target factors), and the four factors would be correlated as were depicted in Figure 1.

For research question 1, a total of three matrices were analyzed; the lambda matrix (path coefficients relating items to factors), variance-covariance matrix (of latent variables), and the error variance-covariance matrix. Input variables were pulled from a raw data file representing the data values taken from each completed CSAAS survey. The covariance matrix representing standardized values of raw data was used for the analysis process in Proc Calis; standardized values enable the calculation of the Root Mean-Square residual (RMR) as another index of fit, while setting bounds of RMR at 0 to 1.

The estimation method of maximum likelihood was used on all models to provide the fit function which computes the inferential significance test, chi square. The inferential test of statistical significance allows one to assume causal inferences are consistent with the data, but that findings are not proven by the data, as one can never prove causation. Maximum likelihood is an iterative process that generates estimates of parsimony representing lowest discrepancies between the data and the population estimates.

Ideally, one would want to have the iterative process stop when global maximization is obtained. If the iterative process stops too early, one can have localized minimization without obtaining global minimization, thereby minimizing parameter estimates. This occurrence results in biased parameter estimates and does not allow for approximation of the sample to truly represent the population estimates (Bollen, 1989).

Convergence. Convergence should stop at the best statistical estimation that these sample data mirror the true population. An indication of the data covariance matrix reaching values equivalent to the population values is a nonsignificant chi square value. Therefore, one looks for a nonsignificant chi square value when examining the Proc Calis output, which is dependent upon sample size.

In situations when non-convergence is found (100=default) in SAS statistical programming, one may stop and use the parameter start values generated by the program output. The researcher would then apply the new start values and increase the number of iterations. An alternate method of estimation, known as ordinary least squares method of estimation, could be used in this case. The ordinary least squares method of estimation is a noniterative estimation method. For the data examined in this study, convergence was easily obtained using the maximum likelihood method of extraction. Convergence was reached at 8 iterations for the first-order model; start values were computed by the SAS program.

First-order Factor

The first-order model (M_{FO}) consisted of the 12 item-pairs formed by the CSAAS items and four latent variables. The 12 item-pairs were hypothesized to be influenced by the four latent variables; Cognition, Value, Affect, and Behavior (see Figure 5).

The null model. A null model (M_{NFO}) for the first-factor model is represented with a latent variable for each of the 12 variable-pairs. In essence, each measured variable (12 item-pairs) is represented by its own latent variable, resulting in 12 latent variables. It is called the null model, as no latent factors are influencing more than one measured variable. Computation of the null model is automatically computed by the SAS proc calis program,

and results for chi square estimates are included in the SAS output for the CFA of the hypothesized model. No additional programming is needed to examine fit estimates of the null model.

Overall indices of fit. The a priori hypothesized four-factor model resulted in a significant fit function with a χ^2 (45, N=215) = 86, $p < .0006$. To establish a good model fit, the chi square value should be nonsignificant, indicating the sample population covariance matrix S is similar to the population covariance matrix Σ; however, use of the chi square value alone has been applied with caution among many SEM researchers. Bollen (1989, p. 266) suggested that one applies caution when interpreting chi square as an overall index of fit because the chi-square approximation assumes that (a) x has no kurtosis, (b) the covariance matrix is analyzed, (c) the sample is sufficiently large, and d) the Ho: $\Sigma = \Sigma(\theta)$ holds exactly. Based on the chi square value alone, this model represented a model that differed from the population covariance matrix, Σ, and one may be tempted to render the model as a nonplausible model. However, upon examination of other fit indices (see Table 10) and the parameter estimates (see Table 11), the model closely approximates plausible model fit.

Fit statistics for model (M_{FO}) included indices of fit as follows: goodness of fit index (GFI) .938, adjusted goodness of fit index (AGFI) .899. Both the GFI and AGFI provide a relative estimate of variance and covariance jointly expressed by the model. GFI and AGFI range from a value of 0 to 1, with one indicative of a perfect fit by the model. Bentler's comparative fit index (CFI), .910, Bollen's normed index (Rho) NFI, .926, and non-normed index delta2 ($NNI\Delta^{2)}$ .948. The NFI and NNFI both represent the proportionate reduction in the fitting function of chi square values when moving from the baseline model to the maintained model. The baseline model is the model without restrictions, in that, all variables are said to represent their own latent variable; whereas the maintained model is the hypothesized factor structure model. The implication is that the closer the hypothesized model mirrors the population model, the closer to 1 the value should be, thus .90 or greater are considered approximations of a close fit. As stated earlier, the GFI, AGFI, NFI, and NNI, should all approximate .90 or greater. Clearly the values presented for the first-order model fluctuate around and above acceptable values. The root mean square residual (RMR) .050, estimates the relative amount to discrepancy between the hypothesized model and sample matrix elements, as does the root mean square estimation of approximation (RMSEA) .06. Values for RMR and RMSEA should be close to 0 with .05 being the ideally

acceptable value. Since, the acceptable value for RMR, RMSEA, and CFI is .05 or less; thus, the true model is closely approximated by this model.

Parameter estimates. Parameter estimates of any model are examined on the basis of the following criteria. First, the t-values should be greater than 2, if the parameter significantly contributes to the equation. Second, the squared multiple correlations (SMCs) examined should be greater than .5 to assure the optimum amount of variance that each variable contributes to the equation.

Variance contributed by the model. The SMC's of the measured variables represent the proportion of variance in the measured indicators that is accounted for by the latent variables (Bollen, 1989, p. 229). SMCs for the first-order model in research question 1 were; .389, .647, .487, .304, .525, .438, .225, .117, .473, .210, .292, and .913. Thus, a total variance of 4.972 was accounted for in the first-order model. Although some of the SMCs were found to be low (below .5), no negative values for SMC were generated. If negative values for SMCs were obtained, setting SMCs to .0 on model specification statements may have improved the model (Rindskoff, 1984). Based on the total variance accounted for (4.972), in addition to the fit statistics and parameter estimates, it would appear that the first-order model of the CSAAS represents a close fit but not ideal. One may conclude that the CSAAS is a psychometrically sound instrument which does conform to the anticipated four-factor structure, however, a more ideal factor structure model was explored.

For the first-order model (M_{FO}), all t-values were greater than 2 indicating that all variables are contributing substantially to the equation. SMCs ranged from a low of .117 (TYV8) to a high of .915 (TYB12), again indicating a somewhat sporadic contribution of variance to the equation (see Table 11). Fit statistics and parameter estimates generated for this model resulted in a plausible model fit, although not ideal.

Inspection of Table 10 also indicates that the null model for the first-order factor (M_{NFO}), calculated with the SAS Proc Calis procedure rendered a chi square value of 780 with 88 df. Acceptable values for chi square/degrees of freedom ratio is 2:1 among most SEM experts. The null model (M_{NFO}) would represent that each of the 12 indicator variables would be influenced by a single latent variable each (uncorrelated with the other latent variables), thus resulting in a 12 latent variable model. The null model does not meet any criteria for model fit and is, therefore, rejected.

Higher-Order Model

To address research question 2, a higher-order model was examined (see Figure 6). This model was comprised of the same 12 item-pairs for indicator variables as used for the first-order model and the same four latent variables as hypothesized for research question 1. A single factor second-order latent variable is included which is said to influence all the first-factor latent variables as well as the 12 item-pairs indicator variables. For this study, the higher-order (M_{HO}) is hypothesized to be Attitude. As in research question 1, the null model (M_{NHO}) is said to have a separate latent variable for each of the 12 item pairs as well as for the first-order factors, thus no hidden latent variables are influencing the measured variables. Fit statistics for this model were automatically computed during the CFA process and included in the SAS output for the higher-order model.

A total of eight matrices were analyzed representing the second-order factor model (M_{HO}). Input variables were comprised of the 24 CSAAS item-pairs resulting in 12 indicator manifest variables, 4 endogenous latent variables (first-order) and one exogenous latent variable (higher-order). Again, the 12 (Y) indicator manifest variables will represent the same composite variables as analyzed for research question 1. The conceptual basis for this model is that the 12 Y variables are dependent upon, or influenced by, the four-first order latent variables (factors). Subsequently, the four first-order latent variables are dependent upon, or influenced by, the second-order latent variables (factor), which is an independent variable not influenced by other variables in the analysis (see Figure 6).

Convergence stopped at 6 iterations for M_{HO} with maximum gradient at .000312; all convergence criteria were satisfied. One active constraint was used to set negative error variance estimate to a lower bound of 0.0. Maximum-likelihood method of extraction was used again to obtain the measure of inferential statistic, chi square.

Overall indices of fit. It was anticipated that the (M_{HO}) model would represent a non-significant fit function (chi square value), whereby, the sample covariance matrix S, obtained on the raw data, would mirror the population matrix Σ. Based on χ^2 (53, N=215) = 95, $p < .0006$, the inferential statistic indicated a significant value. Thus, the sample covariance matrix does not mirror the population covariance matrix, rendering this model a nonplausible model. However, examination of the alternate indices of fit reveals acceptable values for

these fit statistics (see Table 10). For instance, the following fit indices were indicated: GFI .931, AGFI .899, CFI .940, NNI .926, NNIΔ^2 .941. All of the alternate fit indices fall within or above acceptable ranges ($>.90$) or closely approximate it, although the chi square value was significant. The residual indices, RMR .06 and RMSEA .06, also approximate the established cutoff of .05. Because of the sensitivity of chi square to the degrees of freedom and number of parameters in a model differing opinions exist among SEM researchers as to how much weight to apply to the chi square value alone, when establishing model acceptance or rejection (Bollen, 1989; Marsh & Hocevar, 1985). A more in-depth examination of the parameter estimates offers support for accepting this model rather than rejecting it based on the chi square value alone.

Parameter estimates for the higher-order model. Parameter estimates for the second-order model appeared to be well represented by the indicator variables in the model. All of the t-values for each parameter were significant based on a t-value $>$ 2. Examination of the SMC's representing the amount of variance contributed to the equation by each indicator variable indicated a range of values from .113 (TYA8) to a high of .855 (TYB12). Approximately, 11 of the 12 (91%) indicator variables rendered path coefficients greater than .5 indicating moderate to high representation of each variable in the model. Variable TYA8 appeared suspect due to a path coefficient of .337. The SMCs of the measured variables contributed 4.998 variance to the solution, with an additional variance estimate of 2.686 contributed by the first-order latent variables (four factors). Total variance of 7.684 contributed by the variables in the model.

Modification indices. The modified higher-order model can be either theoretically driven or empirically suggested based on fit statistics for the higher-order model (Bollen, 1989). For this study, the modified higher-order model (M_{HOM}) was empirically generated from modification indices included in the SAS output for the higher-order model. Modification indices provide an improved value of chi square that would occur if the recommended indices were included in the parameter statements of the currently calculated model. Eight error-covariances were recommended to be included in the design of the higher-order model to improve fit estimates of model fit.

Modification Indices are indicators of potential model statement changes that may improve the model fit. When using the SAS Proc Calis software, the 10 highest ranked LaGrange Multipliers are supplied for Gamma

and Beta matrices and for Phi error covariance/variance matrices. Given that this study is examining a single instrument hypothesized to have four correlated latent variables, it would not be unusual to find some correlations in and among the model components. Similarly, the MIs for the error matrices may indicate some error correlation among variables of the same instrument (Byrne, 1989). Modification indices generated by the Proc Calis program output suggested an improved model if eight error terms were allowed to correlate between measured variables. For comparative purposes, this model was programmed into Proc Calis statements, thus providing the basis for the modified comparative model of the higher-order CFA, as depicted in Figure 7.

Overall indices of fit for the modified higher-order model. Based on χ^2 (41, N=215) = 45, p < .305, the inferential statistic indicated a non-significant value. The following fit indices were indicated: GFI .957, AGFI .919, CFI .992, NNI .988, NNI$^{\Delta}$ .992. All of the alternate fit indices fall within or above acceptable ranges of .90 or greater, or closely approximate it. The residual indices, RMR .045 and RMSEA .04, also fall below the established cutoff of .05, further supporting model plausibility.

Error covariances. Error covariances in the modified, statistically generated higher-order model, were found for the following variables: TYA7 and TYV4 (.19), TYV7 and TYA6 (.15), TYB11 and TYV4 (.19), TYB11 and TYB5 (.13), TYA8 and TYV6 (.09), and TYA8 and TYV5 (.08). Variables 7, 11, and 8 indicated error correlations with other variables, although error correlation is low. The total significant correlated error values represent 6/12 (50%) of the total indicator variables; the magnitude of the correlations is quite small ranging from .08 to .194. The magnitude of these error covariances do not pose a concern, particularly for values less than 1.5 as they are considered trivial (Marsh & Hocevar, 1983).

Convergent and Discriminant Validity

For this study, four traits (constructs) and two methods (Likert and True-False) were analyzed; the hypothesized four-factors (cognition, values, affect, behavior) measured in the CSAAS were correlated with four construct-similar subscales from the CPI (Ie, To, We, So) as depicted in Figure 8. Reliabilities

of each subscale representing the respective constructs are reported on the diagonals of the matrix and are often referred to as the monotrait-monomethod values. Heterotrait-monomethod triangles are found at the top left and bottom right portion of the matrix; thus, the reliability diagonal and the heterotrait monomethod triangles are referred to as the monomethod block and represent each subscale as it correlates with subscales of the same, or similar, measurement type. Heterotrait-heteromethod triangles contain the correlation coefficients of each CSAAS subscale correlated with each paired CPI subscale; thus, they constitute the different subscales (traits) correlated with different methods. The heterotrait-heteromethod region of the matrix also contains the validity diagonal comprised of coefficients obtained from each CSAAS subscale with the corresponding similar-trait CPI subscale, referred to as the convergent validity coefficients.

Criteria for MTMM evaluation. Four criteria exist for evaluating the contents of the matrix: (a) convergent validity is indicated if values on the validity diagonal are significantly different from zero and large in magnitude, (b) validity diagonals should be higher than values in the heterotrait-heteromethod triangles (different traits, different methods), (c) higher correlations should be found between variables measuring the same trait than variables representing different traits, and (d) the same pattern of trait interrelationships is indicated from values within the heterotrait triangles of both monomethod and heteromethod blocks.

Validity of the CSAAS instrument was examined using two measures of the same trait using two different methods. Whereas, reliability coefficients provide an index of the same trait by the same method. Values found between the extremes of the reliability coefficients and the validity coefficients, within the MTMM, place the concepts of validity and reliability on a continuum of values, rather than representing discrete values. Convergence between two methods of measurement is sufficient to satisfy convergent validity criteria, although several methods of measurement are desirable (Campbell & Fiske, 1959, p. 103). Independence of traits and/or methods may be represented by values of zero in the heterotrait-heteromethod triangle. Invalidity can be indicated through low correlations among the same constructs, or too high correlations among alternate constructs. Discriminant validity, on the other hand, is not so readily established, as one can never prove that a trait as measured is different than all other traits. Overlapping is common among traits, but more frequently found among psychological traits and abstract concepts.

Correlation analysis. A description of correlational analytic procedures will be provided to assist the reader in interpreting the coefficients indicated in the MTMM matrix. Assumptions to be met when computing correlation coefficients will be provided. Finally, the interpretive process in evaluating the correlation coefficient will be discussed as it pertains to the MTMM matrix.

Index of association. Correlation analysis is an analytic process that generates coefficients between two or more variables which act as an index of association. Typically, the magnitude of r ranges from a value of +1 to -1. A positive coefficient means that if one variable increases-- so does the second one. In contrast if a negative association is found-- one expects that as one variable increases the second variable decreases, indicating an inverse relationship (Kachigan, 1986, p. 177). Essentially, coefficient values indicate the strength of the relationship between the variables, regardless of the direction of the relationship.

Artifacts unique to the variables studied may impact the magnitude of r. For instance, linear relationships between the variables is an assumption underlying use of the correlation analytical process. Violation of the assumption can distort the generated coefficient value, leading to erroneous conclusions about the data being studied. When correlating test instrument scores, the pattern of association is further affected by artifacts unique to each respective instrument. Artifacts unique to the instruments may include the following: sampling error, restriction of range, method of administration, and method of responding.

Additionally, values of two variables may be positively related within certain value ranges, but negatively related on a subsequent range of values, resulting in a nonmonotonic relationship, meaning that they do not relate in the same direction throughout all values of each variable. If no relationship exists between the variables, a value of .0, or close to .0, is obtained, indicating that an unrelated, independent, or orthogonal relationship exists between the two variables (Nunnally, 1978). Conversely, a correlation coefficient of +1 signifies a perfect positive relationship. A perfect positive or perfect negative correlation allows us to predict exactly a participants' score on one variable if we know the score on the second variable.

Assumptions. Correlation analysis assumes that the variables are linearly related, normally distributed, and measured on an interval or ratio scale. Assumptions were examined through the SAS statistical programs, Proc Univariate and Proc Plot. Sample cases with missing values are deleted through the listwise process of Proc Corr

procedure. Missing items among any variable in the computation results in automatic deletion of that case from any further analysis of that variable. In many instances, listwise deletion drastically reduces a sample pool of cases, as even one missing value eliminates the entire case from further analysis.

Outliers can seriously influence the linearity of the variables, resulting in unreliable values for that variable, thus increasing the potential for erroneous inferences drawn from the analytic output. SAS software Proc regression procedure was used to identify outliers by computing standardized residuals for each case; residual values greater than + or - 2 are considered outliers among most researchers. Once the outlier is identified, the researcher may decide to delete the case containing the outlier, thereby improving the linear relationship between the variable pairs being correlated. When conducting a MTMM correlational analysis, each variable pair is examined separately requiring the diagnostic procedures be calculated for each variable-pair. Following deletion of cases with missing variables and researcher's deletion of cases representing outliers, the sample size was reduced to a range of cases from a low of 174 to a high of 215, across the variable pairs in the MTMM. Each element shown in the MTMM in Figure 8 is reported with the actual sample size used for analysis.

Interpretation of the correlation coefficient. Interpretation of the correlation coefficient begins with visual inspection of the magnitudes and direction (positive or negative) of a correlation coefficient between variable pairs. However, secondary methods of assessing the contribution of the coefficient make use of the following data; (a) significance levels, (b) covariation of variance among two variables, and (c) statistical tests to examine the heterogeneity of a set of predictor variables for each variable. Magnitudes of the correlation coefficient are said to range from low to high as follows: r=.0 to .40 represent low correlations, r = .40 to .60 represent moderate correlations, r = .61 to.74 represent moderate to moderately high, and r = .75 and greater represent high correlations. When comparing test scores between different instruments, the direction of the correlation coefficient is a reflection of the direction of scoring used within each instrument and the relationship hypothesized between the two traits. For this study, it was hypothesized that a negative, or inverse relationship, would be found for all subscale pairs between the CSAAS and the CPI. The one exception was the Behavior and So subscales; a rationale for this pattern of association is provided in Chapter III.

Significance levels. Significance levels of a correlation coefficient can be provided by the SAS output from the Proc Corr procedure. One would hope to find that a correlation is more than a chance deviation from a hypothesized population correlation of $\rho=0$; tables of critical values are provided in many text books (Crocker & Algina, 1986). Degrees of freedom are calculated by $n=2$ where n is the number of pairs in the analysis. For this study a significance level of $\alpha=.05$ was chosen as acceptable; a one-tailed test of significance appeared warranted based on the preestablished scoring patterns of both the CPI and the CSAAS.

Covariation. Covariation between two variables is determined by squaring the correlation coefficient (r^2) which signifies the proportion of variance in a variable attributable to, or predictable by, the second variable (Kachigan, 1986, p. 229). For example, $r=.51$ between the Values and Behavior subscale of the CSAAS, implies that 26 percent of the variance in Values could be predicted by, or explained by, the Behavior subscale of CSAAS; this does not explain causation but simply shared variance.

Heterogeneity of a set of correlation coefficients. Meng, Rosenthal, and Rubin (1992) developed a statistical equation to examine the heterogeneity of a set of correlation coefficients. Application of this equation is useful if one suspects that the coefficients may contribute variance to a common dependent variable. This procedure was used because of the inability to distinguish meaningful significance of the coefficient values obtained in the MTMM analysis. For instance, upon examination of the coefficients obtained between the Cognitive subscale and the four CPI subscales, Ie, To, So, We, significant coefficients were obtained for two of the variable pairs, but were they significantly different in magnitude from the respective coefficients for the same subscale? Although examining contrasts among the coefficients does not differentiate which correlation pair is significantly different from the others, it does establish that homogeneity across these coefficients is not apparent. One may conclude that at least one of the predictors used to validate that subscale is significantly correlated with the variable being validated.

Results of performing the heterogeneity test of a set of correlation coefficients indicated significant differences did exist among the set of coefficients calculated between the CSAAS subscales and all four of the CPI subscales. For instance, correlation coefficients obtained when testing the set of coefficients obtained between Ie and each subscale of the CSAAS $\chi^2(3, N=192) = 2.58$ $p < .05$ indicated that at least one of the coefficients

among the contrasts was significantly different than the other coefficients, but not which coefficient is significantly different. Contrast tests were also applied to the remaining subscale pairs using Meng's et al., (1990) method to compare correlation coefficients. Figure 8 depicts significance was observed among all but the Well-being subscale of the CPI: To coefficients χ^2 (3, N=192) = 2.80 p < .05; Wb coefficients χ^{22} (3, N=192) = 6.11, p < .05; So coefficients χ^{22} (3, N=192) = 153, p < .05.

Interpretation of the MTMM. Sixteen of the 28 matrix elements were calculated between subscales of the CSAAS and the CPI (lower left box in Figure 8), of which four coefficients (on the diagonal) would be considered convergent with similar constructs, and the remaining 12 coefficients would represent discriminant validity as they were intended to be uncorrelated between dissimilar constructs. Two of the four (Value and To, -.19; and Behavior and So, .25) validity coefficients (50%) did to indicate a low correlation, but the magnitude of the correlation was of little practical value. Of the 12 remaining coefficients, nine indicated discriminant validity; however, three of the coefficients (.23, -.22 and -.39) indicated statistically significant correlations p < .05 with dissimilar constructs. It should be noted that the statistical significance found is not synonymous with practical significance, as this is accounted for by calculating the shared variance between pairs. For example, the highest shared variance for the validity coefficient of .25 (Behavior and So) indicated (r^2) 6% shared variance; this is not sufficient to indicate practical significance.

Convergent validity coefficients found on the diagonal of the lower left square matrix indicated that two of the validity coefficients were found to be significant for variable pairs, To /Values (-.19) and So/Behavior (.25). Surprisingly low were the correlations between variable pairs Ie and Cognition (-.07) and We and Affect (-.11). The correlations indicate that these two variable-pairs are independent of one another. Differences in the response distributions for each variable was noted, and it is not unusual to find low to zero correlations between variable pairs of this nature (Nunnally, 1970, p. 99).

Nunnally recommended that the non-parametric correlation procedure of Rho be used if both variables are rescaled to have similar shapes. This procedure was employed for both nonsignificant variable pairs (Ie and Cog and Wb and Affect) and no difference in significance or magnitude of each correlation resulted. Also, discriminant validity was not established using the CSAAS subscales and the CPI subscales.

Overall, sparse evidence of construct validation was obtained between the CSAAS and the CPI; two of the convergent validity coefficients were significant versus the four anticipated. Additionally, although the two convergent validity coefficients were found to be statistically significant, they did not reach an acceptable magnititude to provide evidence of construct validation between these instruments.

Validity coefficients for true scores. Crocker and Algina (1986, p. 237) noted that, in cases of correlated errors among variable pairs coefficients will represent lower bound estimates of validity. In order to examine the true score coefficients that would be obtained if there were no correlated errors, an equation could be applied to the coefficients obtained on observed scores. By using the reliability coefficients obtained for each subscale in the variable-pair, one may find an increase in the calculated coefficients; this process is referred to as the correction for attenuation (Crocker & Algina, 1986, p. 237). Following application of this formula using the reliability coefficients (reported in Table 8) found on the outer diagonal of the MTMM (in parenthesis), convergent validity coefficients were reestimated as follows: Cognition and Ie r=.11, To and Value r= .35, We and Affect r =.15 and So and Behavior r=.38. Although these values represent an increase in the validity coefficients, it is not an increase in magnitude sufficient to change the conclusion of the represented results.

Restriction of range. Restriction of range is an artifact of the sample size studied. If the sample population represents a highly specialized population, then it seriously curtails the normal distribution of responses that would be found if the sample were from the general population. This is often referred to as incidental selection. For this study, a group of participants were randomly selected from a professional group of school psychologists, while the norms originally collected on the CPI were obtained from a sample of participants in the general population. The norms applied to the CPI test, as presented in the CPI Technical Manual, may not apply to this specialized sample pool. In such cases, a formula to reestimate validity coefficients to adjust for restriction of range may be warranted (Crocker & Algina, 1986).

Lord and Novick (cited in Crocker & Algina, 1986, p. 227) recommend the use of an equation to estimate the maximum validity coefficients that could be obtained between the subscales by accounting for the direct relationship between a predictor and the criterion (dependent variable). The equation consists of multiplying the square root of the reliability coefficient from one variable with the square root of the reliability coefficient of the

paired variable. For instance, if this formula is applied to the reliability coefficients on the matrix outer diagonal values, the maximum correlation that could be obtained between Cognition and Ie is .67, maximum correlations between Value and To, Affect and We, and Behavior and So are, respectively, .59, .68 and .60. The obtained validity coefficients could never be greater than these underestimates, unless the reliability coefficients on the diagonal represent a lower bound estimate of the reliability. Validity coefficients in this study did not approximate the maximum coefficient values represented by the reliability coefficients on the diagonal of the MTMM.

Item analysis of the CSAAS items as compared to CPI items.

A more in-depth analysis of item content on the Ie and Cognition subscales may explain the lack of convergence ($r=-.07$) between the subscales. Item content of the Cognition subscale are as follows:

2. CSA occurs in lower socio-economic groups.
4. I am knowledgeable about my state statutes concerning CSA.
6. CSA issues involve complex dynamics requiring special training for the professional.
8. I am familiar with my school district's written policy concerning CSA reporting.
9. CSA problems are blown out of proportion.
23. Sex abuse is provoked by promiscuous children.

Whereas, an example of Ie item content is as follows:

2. The only interesting part of the newspaper is the funnies.
64. A windstorm frightens me.
92. People often expect too much of me.

Possible reasons for the lack of association between Cognition and Ie are provided. First, the general item content represented in the CPI items, versus the context-specific item content represented in the Cognition items may impact participants differently in terms of responding. Second, Ie items do not appear consistent among

themselves. The three items above relate to interests, fears, and perceptions, representing three somewhat different aspects of intellectual efficiency. Although the Ie subscale was chosen because the Ie description purports it to be a measure of ones' intellectual ability, item-content analysis suggests that the Ie subscale may not represent the intended construct of intelligence or cognitive ability.

Third, the Ie subscale correlated with the Behavior subscale -.39, which is a substantial correlation with a subscale of a supposedly dissimilar construct. One explanation might be that an individual high on Ie, persistent on a task, would also persist in behavioral tasks as denoted by Behavior subscale items. Since none of the offered explanations can be confirmed, additional construct validation is warranted for the Cognition subscale. Similarly, if one examined the reported construct and item-content of the Affect subscale and the Wb subscale, contrasting findings result. First, affect itself may be viewed as an ambiguous construct. Second, Wb subscale was purported to represent a construct of health and verve of individuals, implying a positive affect. High scores on Wb subscale were thought to reflect a more positive affect condition, while low scores represent a pessimistic affect and diminished ability to meet demands of the environment. Examples of items on the Wb subscale are:

54. I find it hard to keep my mind on a task or job.
15. Several times a week I feel as if something dreadful is about to happen.
236. I am so touchy on some subjects that I can't talk about them.
259. I usually feel that life is worth while.
308. I have a great deal of stomach trouble.

Whereas, items on the Affect subscale are as follows:

10. I could never discuss sexual abuse when dealing with children.
15. Talking about CSA makes me feel uneasy.
24. I feel relieved from dealing with CSA issues, because other staff members handle them.
25. The dynamics involved in CSA cases are repulsive to handle.
28. I would be too embarrassed to treat victims of CSA within a counseling setting.
30. CSA is so preposterous to me, I have difficulty accepting that it really happens.

Although there is some similarity in items presented, perhaps accounting for the low negative correlation coefficient (-.11), a content analysis of the items comprising the Wb subscale indicate inconsistencies in item content. Based on the examples above, item content appeared to be related to personal illness, fears, and concentration, with most items emphasizing feelings of personal illness. The coefficient obtained between Affect and Wb (-.11) is somewhat higher than that obtained between Cognition and Ie (-.07), but a lack of association between the subscales is apparent.

Although evidence of the convergent validity of the Cognition and Affect subscales was not supported in this study, based on the MTMM analysis, the lack of association of the CPI and CSAAS subscale pairs may be the fault of either instrument or simply that the constructs measured by each instrument are dissimilar. One weakness of the MTMM method of analysis is that it is difficult to ascertain which instrument has the dissimilar construct (Crocker & Algina, 1986). Therefore, one may wish to explore construct validation through the use of alternate instruments, more related to the CSAAS than the CPI, Ie, and Wb subscales.

In summary, results of the confirmatory factor analysis (CFA) conducted on the CSAAS yielded plausible results in support of the hypothesized higher-order model of the CSAAS, indicating validation evidence of the factor structure of the CSAAS. This conclusion was drawn based on model fit statistics and parameter estimates as reviewed earlier. Results of the MTMM analyses were disappointing, as only two of the four CSAAS subscale variables yielded statistically significant coefficients statistically acceptable for convergent evidence as anticipated; Value and Behavior subscales. Based on the magnitude of the coefficients minimal practical significance was indicated. The Cognition and Affect subscales will require additional evidence of convergent and discriminant validity through future research studies.

Discussion and conclusions

Results of research question 1 indicated that the first-order model represented a plausible model of factor structure of the CSAAS, although not an ideal model. First, it was expected that all CSAAS item-pairs would

load onto the subscale for which it was designed to target. Second, it was anticipated that the four independent latent variables in this model would be correlated. Third, it was anticipated that all parameter estimates would be significant to the model based on a significant t-value (> 2) for each parameter. All of these anticipated relationships were psychometrically supported by the Proc Calis outcome. The ratio of chi square to degrees of freedom also fell within acceptable ranges of 2:1 (Bollen, 1989; Byrne, 1989; Joreskog & Sorbom, 1988).

The fact that the chi square value for this model was found to be significant was contrary to the anticipated nonsignificant value for chi square that would further reinforce acceptance of this model. The sensitivity of chi square to sample size and number of parameters in the model have provided substantive issues of discussion among researchers in pursuit of alternate indices of fit within the model, such as incremental fit statistics and parameter estimates (Bollen, 1989; Marsh & Hocevar, 1983).

Implications for the plausible first-order model fit provided encouraging results to proceed with the hypothesized higher-order model. If the first-order model had been inordinately unacceptable, based on overall fit statistics and non-significant parameter estimates, one would be hard pressed to substantiate the four latent variables as appropriate framework for the higher-order model.

Results of the higher-order model CFA on the CSAAS indicated a highly plausible model fit, although not ideal. The modified CFA contained 8 error covariances suggested by the modification indices generated during the Proc Calis procedure. The modified higher-order model did yield a plausible model based on overall fit statistics as well as individual parameter estimates. It was anticipated that for the higher-order model, the single higher-order latent factor would influence the four first-order latent variables, which in turn, would influence the 12 measured variable pairs. The anticipated criteria to assess the closeness of model fit included (a) a non-significant chi square value as the index of overall model fit, (b) incremental fit statistics were expected to be greater than .90, and (c) all parameter estimates would be significant based on a t value greater than 2. Anticipated results were met for two of the three criteria, incremental fit indices and the significant t values.

What was not anticipated was that the chi square value would be significant for the initial higher-order model. This could be indicative that the sample data, based on this CFA model, did not mirror the population covariance

matrix. Review of the modification indices for this model indicated that if error terms of the measured variables were allowed to correlate, model fit would improve.

The topic of error covariances has stimulated much discussion among researchers; however, for this study the discussion of error covariances will adhere to concepts raised within the CFA framework of structural equation modeling. Bollen (1989) noted that error covariances typically represent the errors of measurement, or noise between latent and indicator variables which interferes with identification of the unique portion of variance contributed by each indicator variable. Normally in structural equation modeling one assumes all error covariances to be uncorrelated. There are, however, two instances when error covariances are commonly found.

First, in longititudinal studies when the same participant responds over time, errors may correlate due to the effect of time. Second, correlated errors may arise when the variables are extracted from the same data source, such as a measurement instrument. In this instance, systematic artifacts unique to that instrument may interfere with the uniqueness of each variable, such as item content, method of administration, and participant pool. If this is true, the error covariance matrix may be non-zero. A negative effect of finding error correlations in a model is that random measurement error can undermine attempts to estimate the effects of one variable on another. Ideally, one would hope to find no error correlations within a CFA model, but this is rarely the case when working with one measurement instrument.

Following the inclusion of the eight error paths into the model, the modified higher-order model did meet all three criteria for model acceptance: nonsignificant chi square, incremental fit statistics $< .90$, and significant parameter estimates < 2. Further examination of the error terms indicated that only one error covariance was greater than .15. Therefore, they reflected trivial concern for the validation of the CSAAS factor structure (Marsh & Hocevar, 1985).

Based on overall fit statistics and parameter estimates of the modified higher-order model, the model appeared to generate the best model fit. The following points of discussion were seriously considered in the decision process for model selection. First, theory driven models versus statistically driven models (Bollen, 1989) and parsimony of the model (Balla & McDonald, 1988) must be considered when examining the plausibility of comparative models. Additionally, the expected cross-validation index (ECVI) is recommended as an index for

comparing models in a SEM research study (Cudeck & Browne, 1983). A cross validation method begins by randomly splitting a sample in half and forming two sample covariance matrices S_1 and S_2. Then a model is fitted to S_1 in the usual way, resulting in an estimate of the implied covariance matrix Σ_1. The cross validation step does not involve estimation of a new model but, instead calculates the second sample model as compared to the first sample model. The SAS Proc Calis program provides the ECVI index by default for each SEM model analyzed. Typically, the model with the lowest ECVI, in addition to the model meeting fit indices, should be the selected model.

When comparing models, the smallest ECVI value would be indicative of the better fitting model for the overall sample. Upon examining the ECVI values for the comparative CFA models in this study, one would find that the ECVI value for the higher-order model without error covariances (.73), is the smaller ECVI value. The first-order model yielded a .74 ECVI value, while the higher-order model with error covariances yielded a .79 ECVI (see Table 10). This finding should provide added support to the evidence of accepting that model as the most plausible model, which confirms the acceptance of the a priori model described in research question 2. In terms of research question 2, the hypothesized higher-order model was selected as the most plausible model presented here. Validation evidence for the factor structure of the CSAAS as a four-factor first-order and single higher-order would appear psychometrically plausible.

In summary, factor structure for the CSAAS, based on CFA, closely approximated the factor structure proposed in research question 1 and 2. When conducting a higher-order CFA, it is customary to establish the base model (first-factor) prior to conducting the higher-order model, as was accomplished in this study. Although the first-order fit statistics did not generate ideal fit statistics, they closely approximated a plausible model fit. If the first-factor model had not been an adequate model, reexamination of the theoretical underpinnings as well as the item-content of the indicator variables would be essential. Once the base four-factor model was established, analysis on the second-order model was easier to establish because the first-factor is the foundation of the conceptualized higher-model. One may project that the higher-order model presented here is consistent with the data and reaches the priority goal of CFA, which is to capture the relation between variables (Bollen, 1989).

When conducting CFA, it is customary to have comparative models which may provide further evidence of the confirmed a priori model. For this study, a comparative model was developed based on the modification indices recommended from the output of the higher-order model. In this instance, error covariances were recommended by proc calis output as parameters, which would improve model fit if included in the model. Six parameters were added to the original higher-order model including error covariances recommended previously. Results indicated the modified CFA generated somewhat better fit statistics than the model with no error covariances included. For instance, GFI increased from .93 to 95, AGFI increased from 89 to .90. Two criteria accepted by structural equation researchers were considered during the decision process of model selection.

First, Mash, Balla and McDonald (1988) suggested that the most parsimonious model (least number of parameters) and the theoretically driven model should be considered during model evaluation. Second, Cudeck and Browne (1983) recommended that the overall discrepancy of fit between models should be examined via the expected cross validation index (ECVI). It is based on the concept of splitting the sample in half and forming two sample covariance matrices. Then a model is fitted in the usual way, resulting in an estimate of the implied covariance model. This procedure is repeated for several models. The model with the smallest value has the best fit. As noted earlier, the lower ECVI value would be indicative of the better fitting model, given other fit indices were acceptable. Since the ECVI values were .79, .73, and .74 for the respective models, the ECVI for the original higher-order model (.73) is clearly the lower value.

The above criteria was fully considered prior to accepting the higher-order model, as noted earlier. For reasons stated above, the modified higher-order model was plausible based on all criteria for acceptance of the CFA model, but the higher-order model without error covariances may be equally plausible, particularly if one examines fit statistics and parameter estimates. The low magnitude of the error covariances would not appear to significantly threaten the psychometric properties of the CSAAS (Marsh & Hocevar, 1985). The CSAAS has been confirmed as a four-factor structure with a single factor higher-order model.

As an investigative measure, a CFA was estimated on the 15-variable pair model as if no items were deleted from the CSAAS. This was done to examine whether the model would have presented a plausible model if all 30 items had remained in the CSAAS. Figure 9 provides a figure drawing with fit statistics and parameter estimates

for that model; neither fit statistics nor parameter estimates yielded indices of an acceptable model fit. Because the decision to eliminate the six items from the original 30-item CSAAS was made prior to the original CFA run on Proc Calis, the outcome of the 15 variable model was not the deciding factor in reducing the items on the CSAAS.

The decision for item deletions was based on several overriding decisions. First, there exists a paradoxical situation among test researcher pertaining to when items should be considered for deletion (Crocker & Algina, 1986). Should one delete items to increase reliability values of the instrument, or simply based on expert judgements, or both? Often the test developer must make a rational decision based on current practices. Second, Nunnally, (1978) noted that when an instrument represents several domains of an overall construct, all of the domains should be equally represented within the instrument. If that path of reasoning were followed, then it would remain within the realms of classical test theory to eliminate the items that did not add to the reliability of the instrument and to end with an equal number of items representing each domain hypothesized to be represented by the instrument.

A second consideration in working with a 12 variable model versus a 15 variable model is that some researchers may take the philosophical stance that the entire analysis then becomes exploratory rather than confirmatory. One might argue that if the researcher eliminated the items that would not load onto the proposed factors, thus rendering the CFA model unacceptable, the problem then becomes exploratory rather than confirmatory. However, many theorists would hold that the driving force behind conducting a CFA is the a priori identification of factors (Bollen, 1989). Therefore, if the hypothesized number of factors for a given analysis were identified in the final results, then the confirmatory nature of the problem was achieved. Given that stance, all models proposed in this study adhered to the four-factor structure and higher-order model of the CSAAS, thereby adhering to the CFA approach.

When one evaluates a CFA model fit one must consider parsimony (fewest number of parameters) and theoretical underpinnings (not only empirical results) as the driving force behind conclusions drawn from the data. Although the a priori higher-order model generated slightly lower fit statistics than the modified higher-order model, it represented the most parsimonious and theoretically driven model. Results obtained for both research

question 1 and 2 yielded evidence of the four-factor first-order as well as the single factor higher-order structure of the CSAAS. The proposed factor structure of the CSAAS appeared to represent an empirically plausible model (Bollen, 1989) that adheres to the theoretical (Marsh, Balla & McDonald, 1988) underpinnings proposed in the development of the CSAAS.

Factor structure was developed based on sound theoretical underpinnings of the four elements representing the multidimensional construct of attitude (Festinger, 1957. 1964; Rosenberg et al., 1969). Therefore, both empirical and theoretical claims to the internal factor structure of the CSAAS was confirmed on this sample. Although reliability estimates of the subscales < .72 are at acceptable value ranges for subscales (Crocker & Algina, 1986), the Value subscale alpha coefficient is low (.538) and does require additional work if higher estimates are desired. The paradoxical decision many researchers face when obtaining scale internal consistency estimates is to rationalize their decision to delete items of a scale for the sake of improving the reliability estimates versus maintaining an instrument in tact as designed, when lower reliability estimated are yielded by the intact scale (Crocker & Algina, 1986).

Inferences Drawn From Responses to CSAAS Subscale Content

Inferences from Value Subscale. Results of individual item analysis for the Value subtest suggest that most school psychologists believe CSA programs should be provided in the schools. For instance, on item 5 (The school crisis team should stick to school issues and not be involved in CSA issues) 90 percent disagreed. And again, on Item 11 (CSA cases should be referred to community specialists, not the school personnel) 65 percent disagreed. On item 16 (CSA issues should be left to the family, it is a private matter) 93 percent disagreed. The response patterns suggested that the overwhelming majority of school psychologists in this study believe in providing CSA services, and they predominately disagree that the delivery of CSA services should be avoided.

Inferences from Affect subscale. Tharinger et al., (1986) reported that personal experience or personal affect concerning CSA issues may restrict a school psychologist's willingness to provide CSA services. On item 10 (I could never discuss sexual abuse when dealing with children) 93% agreed. Similarly, on item 24 (Other staff

members handle CSA problems, so I do not require training on the topic) 93% disagreed. Their responses to these questions suggest that either this sample has had no negative experience with CSA or attitudes among school psychologists have changed positively since the 1986 report.

These findings suggest that the sample was comprised of a group of professional school psychologists who are ready and willing to participate in school based CSA programs, which contrasts with the inferences made in earlier studies (Tharinger et al., 1989; Vevier & Tharinger, 1986) that described school psychologists' behaviors as distancing and withdrawing from CSA issues. Could it be due to the fact that the data for that study may have been collected nearly ten years ago, and societal views of dealing with CSA topics may have changed. Also, consideration must be given to the 42% of surveys that were not returned. It is difficult to estimate why these individuals decided not to respond. Do they represent the group that distances itself from CSA issues which includes not participating in this study?

Inferences Drawn from Behavior Subscale. Most interesting was the high percentage of respondents reporting a willingness to consult with staff and students concerning CSA issues. For example, on item 1 (I would willingly consult with staff members concerning CSA issues) 92% agreed. A contradiction in willingness to attend training programs was also indicated: On Item 27 (I would attend CSA in-service training programs) 81% disagreed. Apparently, a paradoxical position was reported between willingness to work on CSA issues and willingness to participate in further in-service training on CSA topics. Is there a concern for the training forum and content at the school level? Would the contextual environment of the training itself make a difference in participant's willingness to attend the training?

One possible explanation may be that participants feel they should be trained by CSA professionals off school grounds. Perhaps if training was provided by a consultant group specialized in CSA services and school related delivery of services, a larger amount of participants would be willing to attend. As responses indicated, school psychologists believe CSA program development should be conducted at the school level, with school psychologists providing the service; therefore, it follows that some training will be required.

Inferences Drawn From the Cognitive Subscale. Based on the responses to Cognition subscale items, it would appear that the sample is representative of professionals who are aware of state and local policies on professional requirements in handling CSA cases. Their awareness of the complexities in dealing with CSA issues was also evident. For example, on item 6 (CSA involves complex dynamics requiring specialized training for the

professional delivery or services), 88 percent agreed. The willingness to be involved and awareness of the need to receive special training in CSA issues was evident from the responses obtained from this sample of school psychologists.

MTMM Analysis

The second method of examining construct validity was the MTMM method. This method of construct validation required evidence obtained from associations found between the instrument of study, CSAAS, and a previously validated instrument measuring similar constructs. Correlation results, as indicated in the MTMM matrix (Figure 8) were somewhat disappointing in terms of anticipated relationships between CSAAS subscales and the CPI subscales of similar constructs. For three subscale pairs, Cognition and Ie, Value and To, and Affect and Wb, a negative significant relation was expected. Whereas for the Behavior-So subscale pair, a positive significant relationship was anticipated. Although the direction of relationships was confirmed, the magnitude and significance of the coefficients (Cognition with Ie -.07, and Affect with Wb -.11) were not significant. Therefore, the CSAAS subscales Cognition and Affect did not show convergent validity as anticipated, although, statistically significant convergent validity was established for two CSAAS subscales; Value with To -.19, and Behavior with So .25). Difficulty in establishing construct validity for all of the CSAAS subscales may be due to numerous factors. For instance either (a) the CSAAS does not measure what it is believed to measure, or (b) the CPI does not measure what it is believed to measure, or (c) the instruments represent dissimilar constructs.

Subsequent to obtaining the minimal correlations between the CSAAS and the CPI subscales, a more in-depth item analysis of item content on both instruments revealed dissimilarities between the subscales rather than similarities. This has been a discouraging oversight on the part of the researcher, as it is now realized that an in-depth item analysis should have been conducted prior to using the CPI in this study. Examples of item differences are provided in Chapter IV. Because of the lack of evidence for convergent validity, it was not possible to differentiate any coefficients determining discriminant validity. Therefore, it must be admitted that neither convergent or discriminant validity has been established with any practical significance. One overriding rationale for this is that the CPI appeared to cover a broad range of items for each subscale or construct represented by that subscale, while the CSAAS subscale item content is context-specific. Approximately 50 to 75 instruments had

been reviewed for construct similarity prior to the selection of the CPI. No subscales appeared to represent similar constructs validated on a nonsymptomatic population. In fact, there may not be an instrument readily available with which to conduct a construct validation study for the CSAAS, in part, due to the specific content related to CSA. Survey research, to date, on the topic of CSA and school psychologists, has been confined to demographic surveys comprised of factual items related to the school psychologist's involvement with CSA services (Batchelor et al., 1990; Tharinger et al., 1989; Vevier & Tharinger, 1986), rather than examination of attitudes concerning CSA.

One alternative for substantiating subscales may be to use criterion-related validation. This is used when one wishes to draw an inference from the examinee's response patterns to performance on some real behavioral variable of practical importance (Crocker & Algina, p. 218; Nunnally, 1970, p. 203). For the CSAAS, the criterion variable may be involvement in CSA services or initiation of CSA prevention programs or similar behavioral variables. Because in-depth examination of attitudes concerning CSA is a relatively recent concern, preestablished instruments unique to CSA content are not available at this time. Therefore, for now, replications of the internal factor structure and criterion-related validity may render the more feasible approach to validation of the CSAAS.

Limitations

Inferences from this study are restricted to the national sample of school psychologists and their professional role concerning CSA. Subsequent researchers may wish to replicate the research design with samples from different professional disciplines, as the empirical results and inferential conclusions drawn from this research are relevant specifically to school psychologists. Also, due to the widespread geographic location of the sample, direct contact for follow-up interviews is prohibitive. Individual interviews on this topic might yield different information than self-report surveys. Also, in the event that a respondent has had a negative experience with CSA, this questionnaire could elicit emotional reactions. Desensitization of participants would be difficult via a telephone if it does occur.

Limitations in evaluating respondent bias are another difficulty. If bias in responding occurs, the evaluation of its impact on empirical data would be difficult to interpret (Borg & Gall, 1989). Bias may occur for several

reasons, including the Pygmalion effect, respondent attempting to respond according to researcher's expectations, the halo effect, or random responding; all forms of bias contaminate the pattern of responses. This problem is compounded when dealing with an abstract hypothetical construct, such as, attitude. When defining a hypothetical abstract construct, the fact that the construct is abstract moderates the validity of inferences made about that construct (Messick, 1994).

Attitudes, in general, vary among the same participants under different settings. For instance, the focus of this study referred to CSA as it relates to a school setting. Would responses be different if the same questions were asked in a family or a mental health agency setting? These are areas of concern that further restrict generalizations made to the actual sample pool of school psychologists. Due to the specialized population of school psychologists used in this construct validation study, generalizations from this study to other mental health workers are not warranted.

Second, the impact of dealing with sensitive materials may distort some of the findings drawn from this study. It has been reported that emotional reactions to the sensitive topic of CSA can provoke unexpected anxiety among individuals (Borg & Gall, 1986; Festinger, 1957; Tharinger et al., 1986). Due to the sensitivity of the topic, any direct administration of the CSAAS survey can further inhibit or distort the responses of participants.

Third, reasons leading to the mortality of respondents cannot be examined. Without follow-up contact with participants, it is difficult to obtain insight as to what factors prohibited nonrespondents from participating. It was anticipated that a follow-up telephone call would be completed with a structured interview format. However, the participants' telephone numbers were not released from the NASP organization. The findings reported here represent only the willing volunteer participants; the nonresponding participants may have responded differently.

Fourth, limitations exist due to the fact that the analyses for this study were based on several abstract concepts (e.g., attitude, value, affect) used for construct validity. Messick (1994) noted that when defining a hypothetical abstract construct, the abstractness of the construct moderates the validity of inferences made about that construct. This limitation is also applicable to the use of structural equation modeling in the form of CFA, as noted by Bollen (1989). A criticism of structural equation modeling (SEM) is that it incorporates latent variables. The assumption is that latent variables are only a product of the researcher's imagination.

Fifth, limitations found within causal modeling used for research questions 1 and 2 should be noted. For instance, Bollen (1989, p. 67) noted that when evaluating a model, at least two broad standards are relevant. One is whether the model is consistent with the data. The other is whether the model is consistent with the real world. Most structural equation techniques test the former and only implicitly treat the latter. While conclusions drawn from these data suggest that the model fit found in the analyses for research question 1 and 2 resulted in a model that was consistent with the data, additional field research should be garnered to assess whether the conclusions drawn from these analyses are realistic and applicable for studying CSA and school psychologists.

Sixth, restriction of range may also impact the conclusions drawn from this study on both the statistical results and the generalization of findings. Because the sample was drawn from a homogeneous sample of school psychologists, restriction of range must be considered here. Scores on either the predictor (CPI, WAYS, WLCS, and work setting) or the criterion variable (CSAAS) may result in attenuation of the observed validity coefficients. Natural attrition can also impact results, for instance, the participants that volunteered to respond may be restricted in range in that they automatically possess more favorable attitudes toward CSA, which is why they responded to the survey. And finally, due to the homogenous qualities of this sample of school psychologists, generalizations to other mental health workers is not warranted. In order to generalize these findings to other mental health workers, additional pilot testing on that group should be obtained.

Educational Significance

Many professionals advocate increased school involvement as the need for prevention and intervention programs continues to outgrow existing interventions (Gilgun & Gordon, 1985; O'Day et al., 1983; Repucci & Herman, 1991). A multidisciplinary team could be most effective by encouraging collaborative efforts across many disciplines. Community mental health agencies, law enforcement agencies, and judicial agencies can offer a wide range of professional expertise when developing intervention programs. The school psychologist can act as a liaison between the community agency and the school district, thus enhancing delivery of services to children, as it is the school psychologist who is frequently singled out as the initiator of CSA programs within the schools

(Batchelor et al., 1990; Cosentino,1989; Kleemier, Webb, Hazzard, & Pohl, 1988; Krivacski, 1988; Tharinger et al., 1989).

As the community liaison, the school psychologist could develop consultation services for staff to assist with case management and to develop and implement intervention programs in the schools. In-service presentations could enhance staff awareness, clarify appropriate student referrals, and recommend behavior management techniques when dealing with a student who has experienced sex abuse. Team efforts within the schools could increase the quality and number of CSA intervention programs available to the child in need. Since each incident of child sex abuse is unique, a diversified team approach is essential to effectively treat the child (Bross, Krugman, Lenherr, Rosenberg & Schmidt, 1988; Sgroi, 1982; Shoop & Firestone, 1988; Shwartz & Schwannenflugel, 1989; Sobsey, 1992; Sorenson, 1990).

Several studies have revealed that one cannot presuppose that all school psychologists are ready, willing, and able to proceed with CSA programs. Concerns of cognitive awareness, emotional discomfort, and resistant attitudes are prominent. For instance, in three survey studies respondents reported experiencing difficulties with self-efficacy and professional expertise on the subject of CSA (Batchelor et al., 1990; Tharinger et al., 1989; Tharinger, Krivascka, McDonough, Jamison, Vincent & Hedlund; 1988). The school psychologist must often evaluate indicators of sexual abuse to decide if reasonable suspicion warrants a mandated child abuse report (Hazzard & Rupp, 1986). The implications of making such a report often have significant impact on the child and family, particularly if legal issues arise (Jenkins, 1986; Valente, 1990). Due to the complexities of the legal issues, an in-depth training program addressing the professional's concerns with CSA issues should be available to the school psychologist (Cosentino, 1989; Krivascka, 1988).

Vevier and Tharinger (1986) report a lack of formalized training on how to proceed with sensitive issues, such as familial incest and its ramifications on the family unit. Yet, familial incest is the most frequently identified source of child sex abuse (Estroff, 1986). Another concern for the development of *effective* staff training programs is that resistance to change often occurs during in-service training. Resistance frequently escalates when emotionally laden topics are perceived as threatening, overwhelming, or undesirable by the target audience (Block, 1981; Gallessich, 1990; Suedfield, 1971).

Johnson, Owens, Dewey and Eisenberg (1990) report that the professional's attitude strongly influences his/her behavior toward child sex abuse, yet few studies examined attitudes in detail to identify influencing factors. In an attempt to do so, a sample of professional groups reviewed fictitious case histories concerning father-daughter incest. Participants rated the scenarios on a five-point Likert scale ranging from 1 (totally at fault) to 5 (not at all at fault). The professional's tendency to censor the activity varied significantly based on the child's response to the behavior, particularly if the participants perceived that the child played an active role in the incident of sexual abuse. Johnson et al., (1990) concluded that pervasive attitudes influence accuracy in identifying blame and responsibility in cases of child sex abuse; researchers encourage a more in-depth investigation of causal influences on such attitudes.

The psychological impact of emotionally laden events can be overwhelming when the subject of child sex abuse arises. Many individuals experience extreme emotional discomfort related to a sense of horror, repulsion, dread, disbelief, fear, and anger (Conte & Berlinger, 1981). The result of this uncomfortable emotional impact has been identified as distancing from the situation eliciting the emotional discomfort (Batchelor et al., 1990). The literature implies similarities between the emotional discomfort experienced during confrontation with CSA issues and cognitive disharmony defined in cognitive dissonance theory. In an attempt to explore attitudinal influences further, an attitude scale has been developed based on Festinger's (1957) theory of cognitive dissonance. However, construct validation is an essential process in substantiating the claim that the CSAAS measures dimensions that are similar to the constructs conceptualized within Festinger's (1964) attitude theory.

Future Research

Future research on the CSAAS should address areas concerning; a) reliability of the each subscale, b) cross validation studies, c) item response theory analyses, d) further examination of construct validation, and e) issues concerning use of the CSAAS as a needs assessment instrument.

First, because the reliability estimates were sufficient for only three of the CSAAS subscales (Cognition, Affect, and Behavior) one may wish to investigate methods of increasing the reliability estimates for the Value

subscale. This may be accomplished by writing new items, modifying existing items, and/or deleting existing items. Similarly, if higher estimates of reliability are desired for each subscale, the Spearman Brown prophecy formula indicated that doubling the item content of each subscale may sufficiently increase reliability estimates to the high 80's values indicated in the earlier section on reliability.

Second, cross-validation (invariance across groups) is an analytic method used within the CFA framework to examine model fit across groups (Cudeck & Browne, 1983). It begins by randomly splitting a sample in half and forming two sample covariance matrices, S_1 and S_2, using subsets of the original sample group; the procedure can be repeated for several models. For the CSAAS, if a larger sample of school psychologists are surveyed, sample subsets can be formed based on demographic variables, such as, age, gender, district type, and so on. This would allow for the examination of the CSAAS response patterns across groups, which may serve two purposes. First, it would test the parameter estimates within the a priori confirmatory factor-structure model. If parameter estimates hold fairly constant across subsets of the original sample the reliability of the instrument is further supported. Second, if one particular subset of responses indicate a different but consistent variation in response patterns, one may wish to investigate that relationship further as it may be indicative of, bias, unreliability, or sporadic performance, specific to that subset, i.e., age, experience, etc. Similarly, if alternate groups of mental health providers are tested with the CSAAS, invariance across groups could examine the relationship, if any, between one's professional discipline and one's attitude concerning CSA. If consistency is found in the model estimates for the factor structure of the CSAAS among other mental health providers and the current sample of school psychologists, it would provide further support for the reliability and consistency of the CSAAS. All of the analyses involving invariance across groups is a method of cross validation commonly used within the CFA framework (Bollen, 1989; Joreskog & Sorboom, 1987).

Third, an item response theory approach to analyzing response patterns (i.e., Rasch analysis) would also be helpful in isolating different response patterns within the original sample group (N=215), or among subsets of a larger sample. Since item response analysis allows one to discretely examine response patterns for people and items, both types of analyses could be conducted on CSAAS responses. By identifying different response patterns for individuals, one might identify people who would respond uniquely on the CSAAS, perhaps due to group

membership, such as, age, personal experience, etc. Subsets of groups of school psychologists, such as, (a) more experienced versus newly appointed school psychologists, or (b) females versus male psychologists, and (c) those who have attended CSA training programs and those who have not.

Whereas, the individual item analysis could identify irregularly behaving items. This technique would be useful to either examine each item individually, or as a member of a particular subscale. For instance, for the CSAAS, it would be interesting to analyze how each item on the Value subscale behaved to possibly identify which items lead to the lowered reliability estimate.

Fourth, the topic of construct validation may require much in-depth consideration prior to making a second attempt at using instruments of similar constructs. Since approximately 60-75 instruments were reviewed prior to the selection of the CPI for construct validation, concerns have emerged that there may not be any instrument of similar constructs available, in part, due to the content-specificity of the CSAAS. It would appear there are no instruments currently available which address the professional's attitude concerning the specific problem of CSA. Perhaps it would be more prudent to look toward a criterion validation study, which could use a behavioral variable as the criterion, such as, number of CSA cases reported or previous experience with CSA.

Fifth, since it was suggested that this instrument be used as a needs assessment instrument one last suggestion for future research may be needed. If the CSAAS is to be used for an in-service program concerning CSA, a pre and posttest may serve as a method of assessing curriculum effectiveness. If this were to be done, a control group design would be recommended so that one might examine the change in attitude, if any, of the group that did receive the in-service, versus the control group that did not receive the in-service. One would anticipate that the group that received the in-service program should show significant change in attitude concerning CSA topics.

Although favorable support for the factor structure of the CSAAS was evident based on the findings in this study, it would appear that much more validation work is needed. The above suggestions for future research are ongoing and will require much tenacity and forbearance to be conducted. However, literature concerning the increased incidence of CSA, particularly among special needs students, implies that the school psychologist is in a prime position for dealing with CSA issues. Due to the educationally significant impact that the incident of CSA

has on both students and staff, persistent attempts at future research for construct validation of the CSAAS would appear educationally relevant, making the undertaking both worthwhile and sufficiently warranted.

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Table 1

NASP Categories of Membership

Type	Membership	Code
F	Affiliate	22
H	Honorary	10
I	International	111
M	* Regular	12,411
	Other	57
MC	One Year Comp Membership	2
R	Retired	453
S	Student	2,414
V	Leave of Absence	85
Y	Common Address	116
	Other	920
	Total	16,601

* Subset of NASP members to be sampled.

Table 2

NASP State Membership and Proportion of Sample Pool (N=215)

State	Count	% NASP	Number Sampled	Number Returned	% Sample
Alaska	060	005	00	--	--
Alabama	083	007	01	1	00.5
Arkansas	079	006	01	--	--
Arizona	277	022	06	1	00.5
California	821	066	54	29	13.5
Colorado	194	016	04	4	01.9
Connecticut	412	033	13	5	02.3
District of Colombia	034	003	01	1	00.5
Delaware	064	005	01	1	00.5
Florida	494	040	19	5	02.3
Georgia	234	019	04	2	00.9
Hawaii	015	001	01	1	00.5
Iowa	176	014	02	--	--
Idaho	066	005	01	--	--
Illinois	697	056	39	18	08.4
Indiana	273	022	01	--	00.9
Kansas	166	013	02	2	01.4
Kentucky	155	012	03	3	00.5
Louisiana	130	010	01	1	02.8
Massachusetts	443	035	15	6	01.4
Maryland	321	026	08	--	01.4
Maine	065	005	03	3	--
Michigan	369	030	11	3	--
Minnesota	200	016	03	--	00.5
Missouri	097	008	01	--	00.5
Mississippi	040	003	01	1	01.4
Montana	065	005	01	1	00.5
North Carolina	274	022	06	3	00.5
North Dakota	022	002	01	1	00.5
Nebraska	131	011	01	1	00.5
New Hampshire	096	008	01	--	--
New Jersey	519	042	21	4	01.5
New Mexico	071	006	01	1	00.5
Nevada	086	007	01	--	--
New York	1301	105	139	53	24.7
Ohio	627	050	33	31	14.0
Oklahoma	073	006	31	2	00.9
Oregon	161	013	00	--	--
Pennsylvania	794	064	16	14	06.5
Puerto Rico	005	004	04	--	--
Rhode Island	093	007	04	--	--
South Carolina	173	014	05	1	00.5
South Dakota	050	004	01	--	--
Tennessee	195	016	02	2	00.9
Texas	317	026	03	1	00.5
Utah	070	006	08	--	--
Virginia	382	031	06	6	02.8
Virgin Islands	002	000	01	--	--
Vermont	032	003	01	--	--
Washington	367	030	11	2	00.9
Wisconsin	423	034	14	5	02.3
West Virginia	068	005	01	--	--
Wyoming	049	004	04	--	--
Totals	12,411	100%		215	100%

Table 3

Test Instruments Used for Construct Validity

Trait	Method	Instrument
Affect	T-F	CPI Well Being (Wb) Subscale
Cognitive	T-F	CPI Int-Efficiency (Ie) Subscale
Personal Values	T-F	CPI Tolerance (To) subscale
Behavior	T-F	CPI Socialization (So) Scale

Table 4

Demographic Composition of Participants

Demographic Identifier	Number of Participants	Percent of Sample
Educational Level:		
Masters of Science Degree	83	40.0
Specialist Degree	62	30.0
Doctorate	55	26.6
Post Doctorate	14	06.8
Other	18	08.7
Years Experience:		
0-5 years	7	03.3
6-10 years	27	12.6
11-15 years	73	34.0
16-20 years	62	28.0
21 or more	46	21.4
Gender:		
Male	72	33.5
Female	143	66.5
Age:		
21-25.9	2	00.9
26-35/9	17	07.9
36-45.9	93	43.5
46 - over	102	47.7
Current Job Status:		
Full-time	173	83.6
Part-time	22	10.6
Temporary	4	01.9
Private Practice	17	08.2
Retired	8	03.9
Unemployed	1	00.5
School District:		
Urban	57	26.5
Rural	63	29.3
Suburb	90	41.9
Other	5	02.3

(Continued on next page)

Table 4. (continued)

Demographic Identifier	Number of Participants	Percent of Participants				
		1 -20	21-40	41-60	61-80	81-100%
Task Assignment in District:						
Assessment		18	30	30	18	.5
Counseling		45	12	4	2	1
Staff Consultation		71	14	3	.5	1
Parent Consultation		24	66	8	1.4	1
Other		76	16	6	1	2
Grade Level Assigned:						
Elementary	104					
Middle School	68					
High School	63					
District Wide	74		.50			
Preschool	26		.33			
			.31			
CSA Programs in District:			.36			
Individual Counseling	123		.13			
Support Groups	39					
CSA Prevention Programs	77					
Parent Consultation	100		.60			
Staff Consultation	129		.19			
			.38			
Experience in CSA Programs:			.49			
Crisis Intervention	128		.63			
Prevention Programs	74					
Intervention Programs	67					
Staff Consultation	123		.62			
Parent Consultation	86		.36			
Other	18		.33			
			.60			
Previous Training in CSA			.42			
Journals, Books, etc.	177		.09			
CSA Workshops	149					
University Programs	31					
Other	9		.86			
			.72			
No. Reported CSA cases	196		.15			
			.04			
		0-55 Range of Cases Reported				

Table 5

Item-Total Correlations for the 24 CSAAS Items and Subscale Alpha (N=215)

CSAAS Subscale	Subscale Alpha	CSAAS Item Number	Correlation with total	Cronbach's Alpha Coefficient if Item is Deleted
Cognition		CSA06	.435	.712
		CSA23	.462	.686
		CSA02	.457	.691
		CSA09	.509	.509
		CSA08	.499	.676
	.725	CSA04	.463	.688
Value		CSA16	.348	.529
		CSA05	.388	.505
		CSA11	.306	.542
		CSA13	.297	.548
		CSA18	.368	.512
	.580	CSA20	.267	.574
Affect		CSA28	.499	.692
		CSA15	.471	.701
		CSA25	.522	.686
		CSA30	.435	.712
		CSA24	.454	.711
	.737	CSA10	.460	.704
Behavior		CSA01	.376	.740
		CSA12	.606	.675
		CSA17	.618	.671
		CSA21	.475	.736
		CSA22	.551	.693
	.748	CSA27	.413	.737

Table 6a

CSAAS Item Description, Item-Total Correlations, Means, and Standard Deviations

Item	Item Total	M	SD
! 1. I would willingly consult with staff members concerning CSA issues	.367	1.51	.95
2. CSA occurs in lower socio-economic groups only.	.457	1.36	.89
* 3. Survivors of CSA often overreact with promiscuous behaviors.	.109	3.16	1.15
! 4. I am knowledgeable about my state statutes concerning CSA.	.463	2.04	.89
5. The school crisis team should stick to school issues and NOT be involved in CSA issues.	.386	1.62	.94
! 6. CSA issues involve complex dynamics requiring special training for the professional.	.430	1.93	.99
* 7. I am NOT aware of any training programs addressing CSA issues.	.247	2.40	1.34
! 8. I am familiar with my school district's written policy concerning CA reporting.	.499	1.92	1.01
9. CSA issues are blown out of proportion.	.509	1.68	.83
10. I could never discuss sexual abuse when dealing with children.	.460	1.49	.79
11. CSA cases should be referred to community specialist, NOT to school personnel.	.306	2.37	1.13
!12. I would like to conduct parent consultation programs concerning CSA issues.	.413	3.07	1.10
13. As far as I am concerned, CSA is NOT an issues for school discussion.	.297	1.52	.69
*14. Incest or molestation occurs to females rather than males.	.258	1.60	1.05
15. Talking about CSA makes me feel uneasy.	.470	2.19	1.05
16. CSA issues should be left to the family, it is a private matter.	.348	1.41	.75
! 17. I would like to develop CSA programs in my school.	.618	2.82	1.04
18. Support groups for survivors of CSA do NOT belong in the school.	.368	2.25	.99
* 19. I lack the professional training required to consult with staff members on CSA issues.	.376	3.50	1.02
20. If I became aware of a CSA case, I would refer it to someone else.	.267	3.09	1.30
21. I would like to attend professional conferences concerning CSA issues.	.475	2.24	.95
22. I would like to conduct CSA training programs for staff.	.606	3.04	]1.04
23. Sex abuse is provoked by promiscuous children.	.462	1.34	.74
24. I feel relieved from dealing with CSA, because other staff members handle CSA issues.	.450	1.57	.66
25. The dynamics involved in CSA cases are repulsive to handle.	.520	1.91	.94
* 26. Family incest is very rare.	.425	1.70	.812
27 I would attend CSA in-service training programs.	.551	2.06	1.05
28. I would be too embarrassed to treat victims of CSA within a counseling setting.	.500	1.76	.96
* 29. When I hear about CSA or family incest issues, I feel sick.	.240	2.27	1.15
30. CSA is so preposterous to me, I have difficulty accepting that it really happens.	.430	1.36	.75

* deleted items ! reverse scored

Table 6b

CSAAS Item Description, Item-Total Correlations, Means, and Standard Deviations by Subscales

Item	Item Total	M	SD
COGNITION			
2. CSA occurs in lower socio-economic groups only.	.457	1.36	.89
* **3. Survivors of CSA often overreact with promiscuous behaviors.**	**.109**	**3.16**	**1.15**
! 4. I am knowledgeable about my state statutes concerning CSA.	.463	2.04	.89
! 6. CSA issues involve complex dynamics requiring special training for the professional.	.430	1.93	.99
* **7. I am NOT aware of any training programs addressing CSA issues.**	**.247**	**2.40**	**1.34**
! 8. I am familiar with my school district's written policy concerning CA reporting.	.499	1.92	1.01
9. CSA issues are blown out of proportion.	.509	1.68	.83
* **14. Incest or molestation occurs to females rather than males.**	**.258**	**1.60**	**1.05**
* **19. I lack the professional training required to consult with staff members on CSA issues.**	.367	3.50	1.02
23. Sex abuse is provoked by promiscuous children.	.462	1.34	.74
* **26. Family incest is very rare.**	**.425**	**1.70**	**.811**
VALUE	.386	1.62	.94
5. The school crisis team should stick to school issues and NOT be involved in CSA issues.	.306	2.37	1.13
11. CSA cases should be referred to community specialist, NOT to school personnel.	.297	1.52	.69
13. As far as I am concerned, CSA is NOT an issues for school discussion.	.348	1.41	.75
16. CSA issues should be left to the family, it is a private matter.	.368	2.26	.99
18. Support groups for survivors of CSA do NOT belong in the school.	.267	3.09	1.30
20. If I became aware of a CSA case, I would refer it to someone else.	.460	1.49	.79
AFFECT	.470	2.09	1.05
10. I could never discuss sexual abuse when dealing with children.	.450	1.58	.66
15. Talking about CSA makes me feel uneasy.	.520	1.91	.94
24. I feel relieved from dealing with CSA, because other staff members handle CSA issues.	.500	1.76	.96
25. The dynamics involved in CSA cases are repulsive to handle.	**.290**	**2.27**	**1.15**
28. I would be too embarrassed to treat victims of CSA within a counseling setting.	.430	1.36	.75
* **29. When I hear about CSA or family incest issues, I feel sick.**	.367	1.51	.95
	.413	3.07	1.10
	.618	2.82	1.04
	.475	2.24	.95
	.606	3.04	1.04
	.551	206	1.05

* deleted items(bold print) ! reverse scored

Table 7

Item-Total Correlations for the 24 CSAAS Items and Subscale Alpha (N=215)

CSAAS Subscale	Subscale Alpha	CSAAS Item Number	Correlation with total	Cronbach's Alpha Coefficient if Item is Deleted
Cognition		CSA06	.435	.712
		CSA23	.462	.686
		CSA02	.457	.691
		CSA09	.509	.509
		CSA08	.499	.676
	.725	CSA04	.463	.688
Value		CSA16	.348	.529
		CSA05	.388	.505
		CSA11	.306	.542
		CSA13	.297	.548
		CSA18	.368	.512
	.580	CSA20	.267	.574
Affect		CSA28	.499	.692
		CSA15	.471	.701
		CSA25	.522	.686
		CSA30	.435	.712
		CSA24	.454	.711
	.737	CSA10	.460	.704
Behavior		CSA01	.376	.740
		CSA12	.606	.675
		CSA17	.618	.671
		CSA21	.475	.736
		CSA22	.551	.693
	.748	CSA27	.413	.737

Table 8

Means and Standard Deviations for each CSAAS Subscale Item

Subscale	Item Number	Item Mean	Item SD
Cognition	CSA06	1.94	0.99
	CSA23	1.34	0.74
	CSA02	1.36	0.89
	CSA09	1.68	0.83
	CSA08	1.92	1.01
	CSA04	2.04	0.89
		10.27*	
Value	CSA16	1.41	0.75
	CSA05	1.62	0.94
	CSA11	2.37	1.13
	CSA13	1.52	0.69
	CSA18	2.26	0.99
	CSA20	3.10	1.30
		12.28*	
Affect	CSA28	1.75	0.96
	CSA15	2.08	1.05
	CSA25	1.90	0.94
	CSA30	1.35	0.75
	CSA24	1.57	0.66
	CSA10	1.48	0.79
		10.13*	
Behavior	CSA01	1.51	0.95
	CSA12	3.07	1.10
	CSA17	2.83	1.04
	CSA21	2.24	0.95
	CSA22	3.04	1.04
	CSA27	2.07	1.05
		14.76*	

* Subscale Means.

Table 9

Cronbach's Alpha Coefficient, and Number of Items for All Scales and Subscales Used in the Study (N=215)

Scale Subscales	Number of Items	Alpha
CSAAS		
Cognition	6	.725
Values	6	.580
Affect	6	.737
Behavior	6	.748
CPI		
Intellectual Efficiency	42	.570 .81
Tolerance	32	.650 .77
Socialization	46	.580 .81
Well Being	38	.730 .74
Good Impression	40	.650

Note: Values of CPI underlined represent alpha values adjusted for restricted sample group.

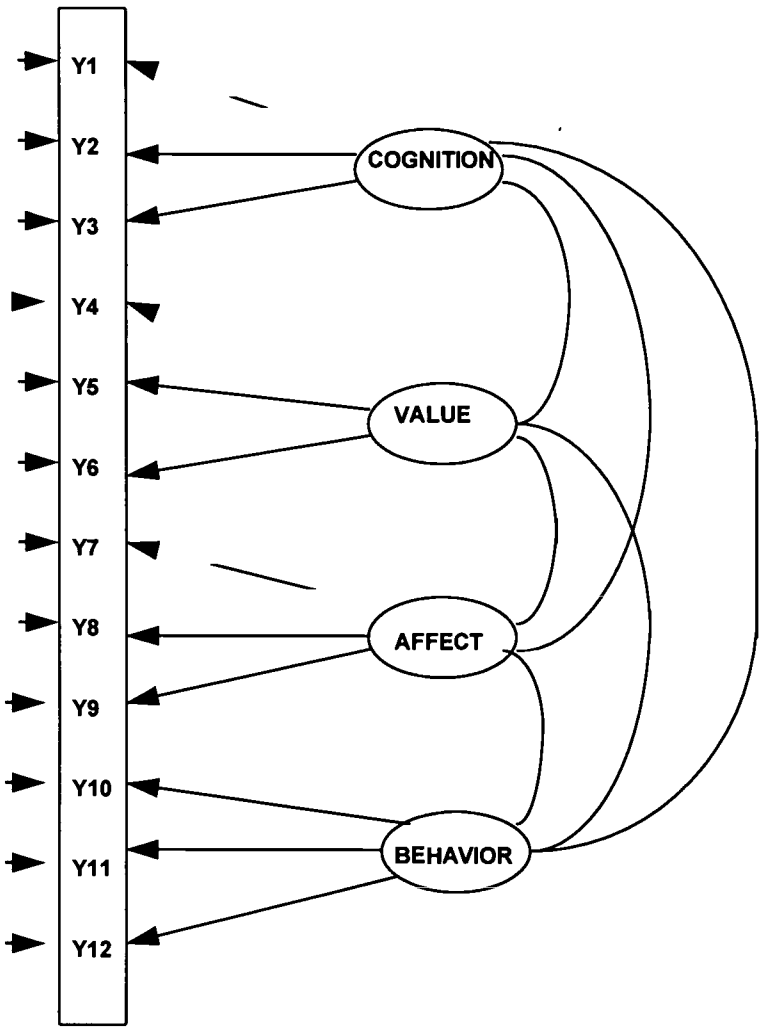
Table 10
Fit Indices for Factor Validation of the Child Sex Abuse Attitude Scale

Model	GFI	AGFI	X^2	df	X^2/df	RMSEA	RMR	CFI	NNI	NNIΔ^2	ECVI
M_{FO}	.938	.899	086	45	1.79	.06	.050	.910	.926	.948	.74
M_{NFO}	----	----	780	66	11.8	---	---	---	---	---	--
M_{HO}	.931	.899	095	53	1.79	.06	.060	.940	.926	.941	.73
M_{NHO}	----	---	617	66	9.34	---	---	---	---	---	
M_{MHO}	.957	.919	045	41	0.91	.04	.045	.992	.988	.992	.79

Table 11

Parameter Estimates for First-Order and Second-Order Models

First-Order Model			Second-Order Model			Modified Model	
Parameter	Estimate	SMCs	Parameter	Estimate	SMCs	Estimate	SMCs
λ_{11}	.638	.389	λ_{11}	.548	.300	.594	.353
λ_{21}	.804	.647	λ_{21}	.807	.651	.592	.350
λ_{31}	.698	.487	λ_{31}	.728	.530	.799	.639
λ_{42}	.552	.304	λ_{42}	.562	.316	.544	.296
λ_{52}	.725	.525	λ_{52}	.711	.506	.803	.645
λ_{62}	.662	.438	λ_{62}	.621	.386	.353	.125
λ_{73}	.475	.225	λ_{73}	.504	.254	.646	.418
λ_{83}	.343	.117	λ_{83}	.337	.113	.858	.736
λ_{93}	.689	.475	λ_{93}	.681	.470	.635	.403
$\lambda_{10,4}$	.458	.210	$\lambda_{10,4}$	.540	.291	.814	.663
$\lambda_{11,4}$	.540	.292	$\lambda_{11,4}$	.571	.326	.547	.299
$\lambda_{12,4}$	.955	.913	$\lambda_{12,4}$	.925	.855	.712	.507
ϕ_{21}	.330		γ_{11}	.980	.696	.987	.975
ϕ_{32}	.199		γ_{21}	.902	.814	.737	.543
ϕ_{42}	.103		γ_{31}	.856	.732	.773	.597
ϕ_{31}	.264		γ_{41}	.666	.444	.618	.382
ϕ_{42}	.149						
ϕ_{41}	.103		ζ_{11}	.008		.151	
			ζ_{21}	.123		.675	
δ_1	.781		ζ_{31}	.166		.634	
δ_2	.593		ζ_{41}	.409		.786	
δ_3	.716		ζ_{52}	.046			
δ_4	.833					.804	
δ_5	.688		ε_1	.836		.805	
δ_6	.749		ε_2	.594		.600	
δ_7	.879		ε_3	.685		.838	
δ_8	.939		ε_4	.826		.595	
δ_9	.724		ε_5	.702		.935	
δ_{10}	.885		ε_6	.783		.762	
δ_{11}	.541		ε_7	.863		.513	
δ_{12}	.294		ε_8	.941		.772	
			ε_9	.270		.580	
ζ_1	.08		ε_{10}	.841		.836	
ζ_2	.07		ε_{11}	.821		.701	
ζ_3	.07		ε_{12}	.399			
ζ_4	.06						
	Variance	**4.972**		**Variance**	7.084		**7.934**



Varible List

Y1 CSA6 CSA4
Y2 CSA2 CSA23
Y3 CSA8 CSA9
Y4 CSA16 CSA11
Y5 CSA5 CSA18
Y6 CSA13 CSA20
Y7 CSA15 CSA10
Y8 CSA25 CSA28
Y9 CSA30 CSA 24
Y10 CSA1 CSA21
Y11 CSA17 CSA12
Y12 CSA22 CSA27

Figure 1. CFA first-order model.

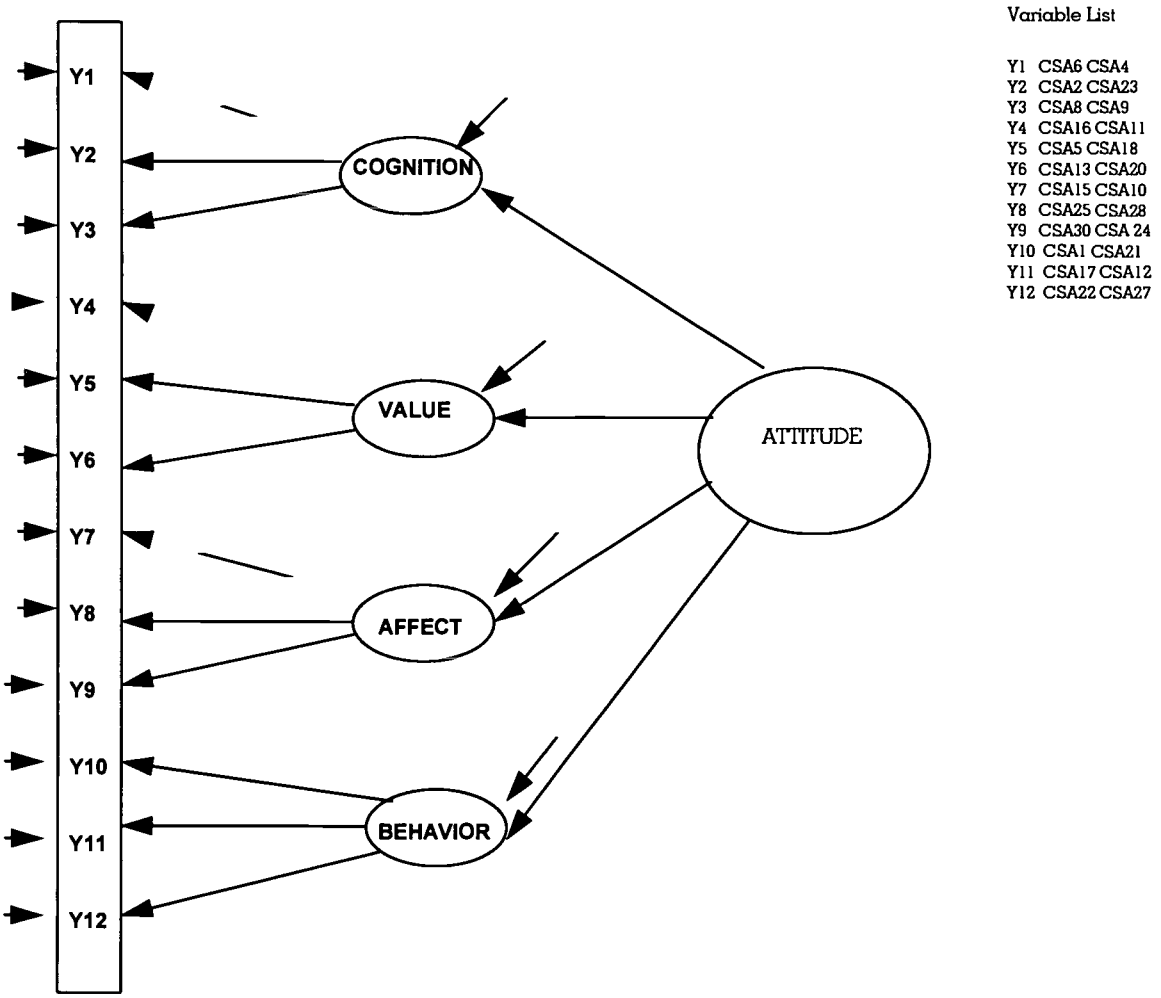
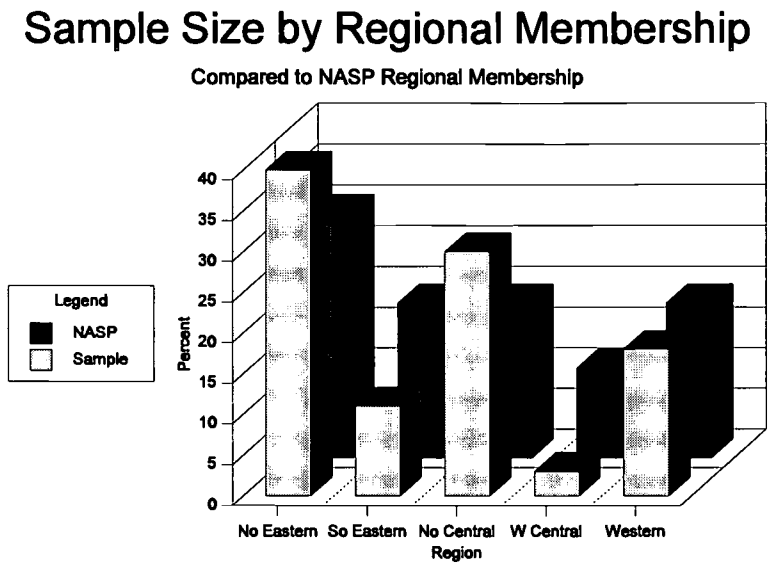


Figure 2. CFA higher-order model.

	C1	V1	A1	B1	Ie	To	Wb	So
C1 Cognition	____							
V1 Values	____	____						
A1 Affect	____	____	____					
B1 Behavior	____	____	____	____				
True False CPI								
C2 Intellectual Efficiency	____	____	____	____	____			
V2 Tolerance	____	____	____	____	____	____		
A2 Well Being	____	____	____	____	____	____	____	
B2 Socialization	____	____	____	____	____	____	____	____

Figure 3. MTMM matix of coefficients among CSAAS subscales and CPI subscales.



North Eastern Region	Southeastern Region	North Central Region	West Central Region	Western Region
Connecticut	Alabama	Illinois	Arkansas	Arkansas
Delaware	Florida	Indiana	Iowa	Iowa
Maine	Georgia	Michigan	Kansas	Kansas
Massachusetts	Kentucky	Ohio	Louisiana	Louisiana
New Hampshire	Maryland	Wisconsin	Minnesota	Minnesota
New Jersey	Mississippi		Missouri	Missouri
New York	North Carolina		Nebraska	Nebraska
Pennsylvania	South Carolina		North Dakota	North Dakota
Rhode Island	Tennessee		Oklahoma	Oklahoma
Vermont	Virginia		Dakota	South Dakota
	District of Columbia		Texas	Texas
	West Virginia			

Figure 4. Sample size by NASP regional membership.

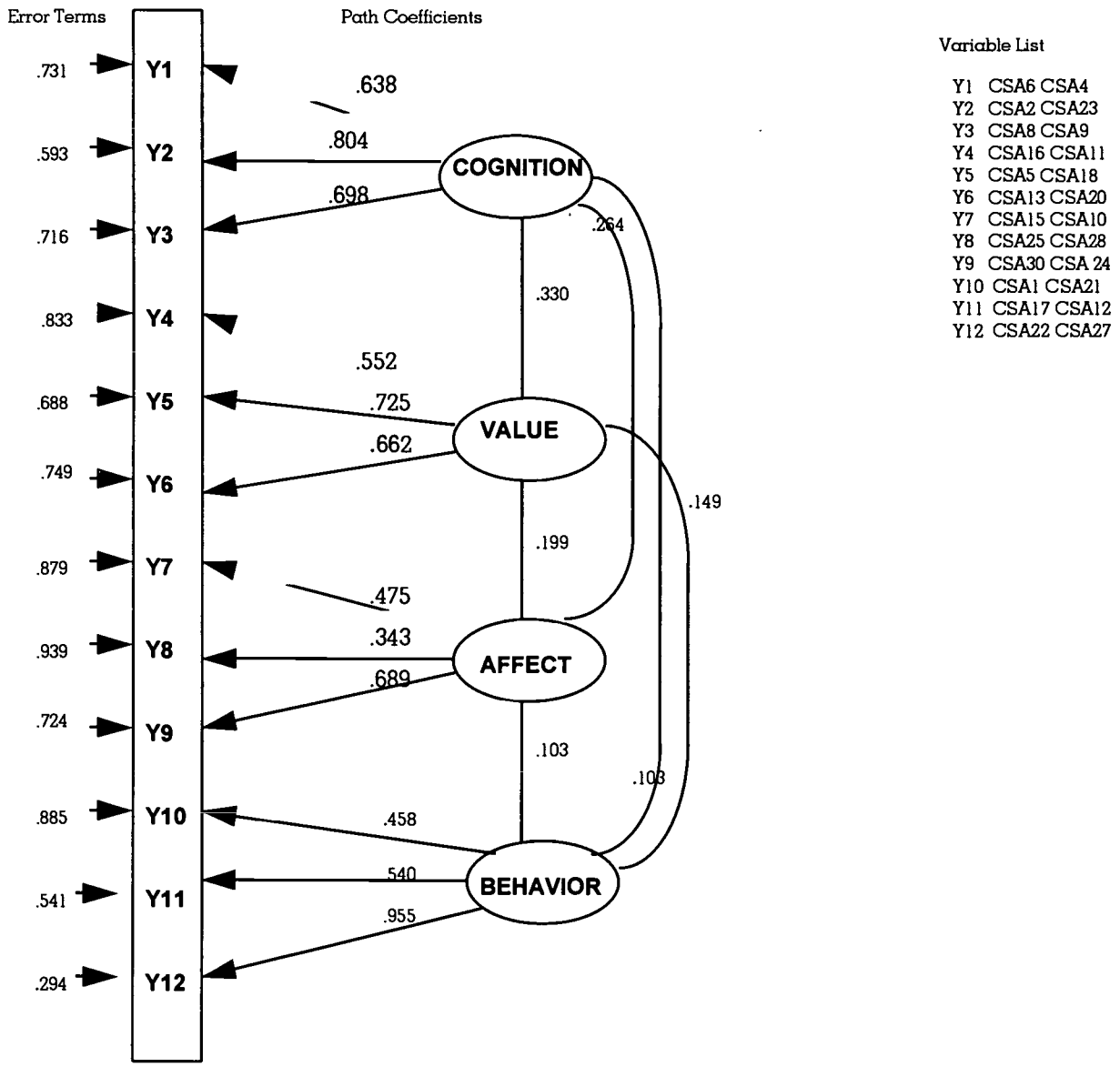


Figure 5. CFA first-order model with parameter estimates.

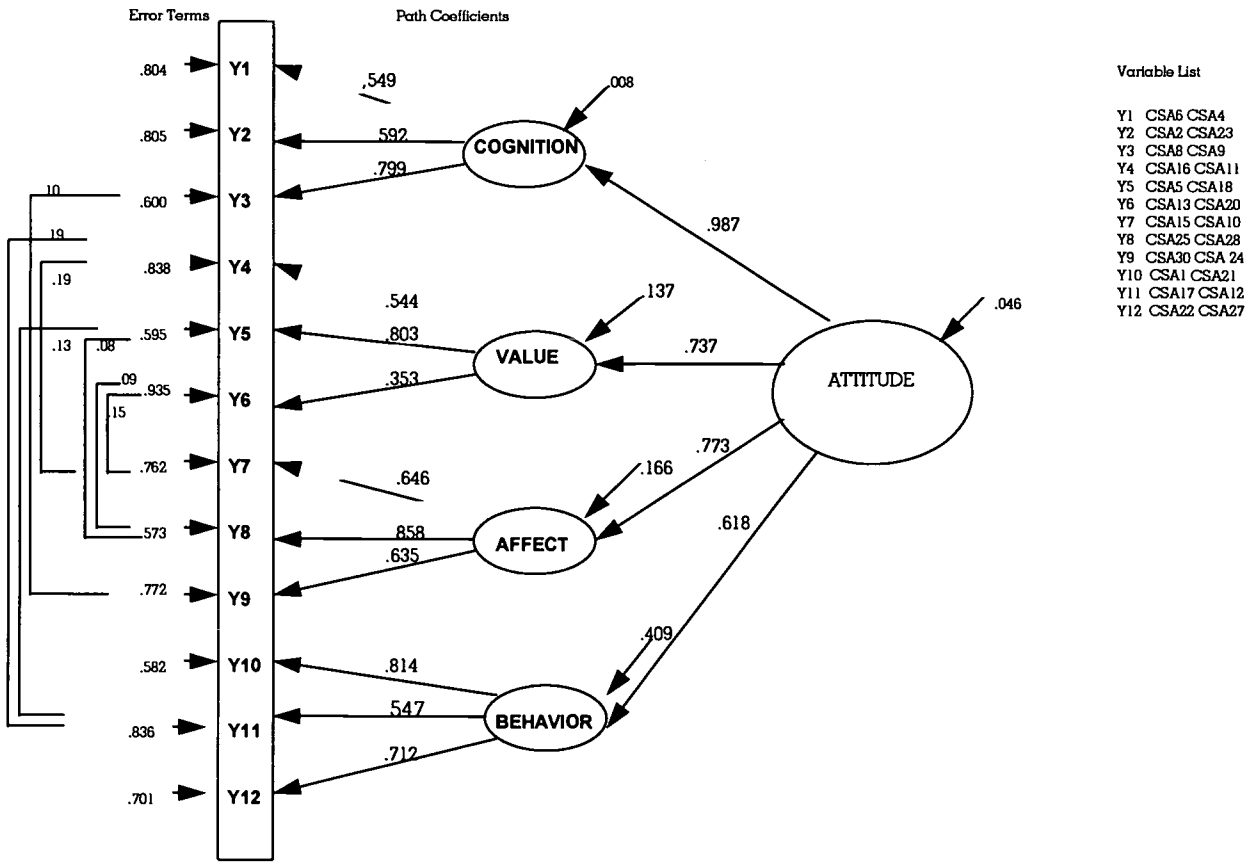


Figure 7. CFA Modified higher-order model with parameter estimates.

	Likert				True	False	
Likert CSAAS	**C1**	**V1**	**A1**	**B1**	**Ie**	**To**	**Wb**	**So**
C1 Cognition	**(.73)[a]**							
V1 Values	**.50****	**(.58)**						
A1 Affect	**.44****	**.43****	**(.74)**					
B1 Behavior	**.32****	**.51****	**.31****	**(.75)**				
True False CPI								
C2 Intellectual Efficiency	**-.07[c]**	**-.03**	**-.09**	**-.39****	**(.57),81[b]**			
V2 Tolerance	**-.03**	**-.19****	**-.01**	**-.13**	**-.39***	**(.48),77**		
A2 Well Being	**-.01**	**-.04**	**-11**	**-.13**	**-.20****	**-.26***	**(.73),81**	
B2 Socialization	**.23****	**-.22****	**.06**	**,25****	**-.19**	**-.22***	**-.15****	**(.58),74**

[a]Numbers in parenthesis on the outer diagonal represent reliability coefficients. [b]Numbers underlined represent adjusted estimates of reliability. [c]Values in bold print and underlined should represent the convergent validity values. (AVN=186).
**** p < .05. * p < .01.**

Figure 8. MTMM matrix with coefficients from CPI and CSAAS subscales.

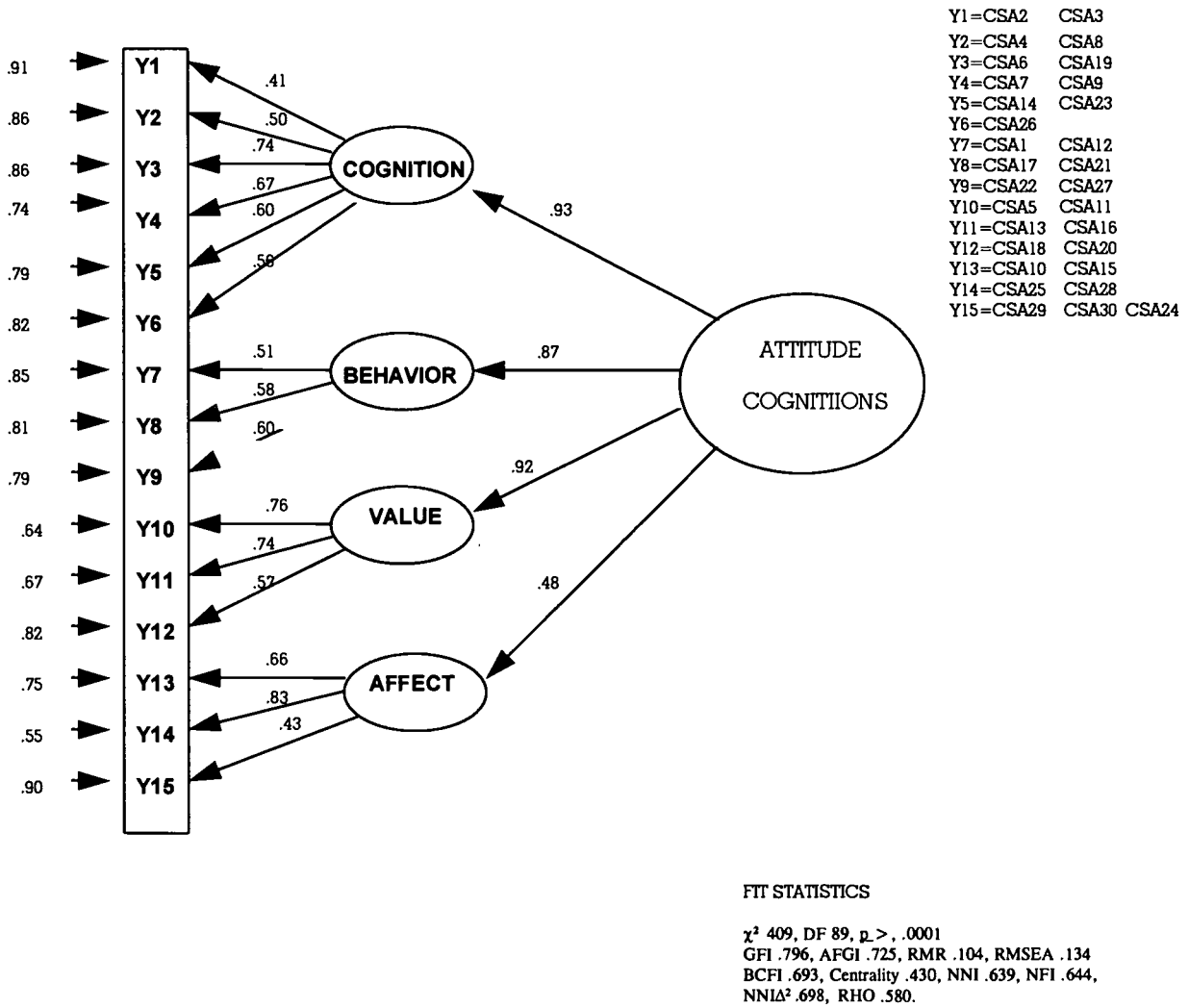


Figure 9. CFA higher-order model for 15 variables with parameter estimates and fit statistics.

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