

Structural equation modeling was used to delineate the relationship between sexual victimization and personality variables in the prediction of patterns of child molestation in adolescent males. Two hundred thirty-five adolescents, representing subsamples of sexually victimized and nonvictimized, perpetrating and nonperpetrating, and emotionally maladjusted and nonmaladjusted youths, participated in the study. Juvenile child molesters were found to have more pessimistic explanatory styles and deficits in self-sufficiency relative to nonoffending youths. A younger age at time of victimization, a greater number of incidents, a longer period of waiting to report the abuse, and a lower level of perceived family support postrevelation of the abuse were found to be predictive of subsequent sexual perpetration. Implications for treatment are discussed.

The Influence of Personality and History of Sexual Victimization in the Prediction of Juvenile Perpetrated Child Molestation

JOHN A. HUNTER, JR.

University of Virginia

AURELIO JOSÉ FIGUEREDO

University of Arizona

Juvenile sexual offending is a problem of growing concern in our society. Clinical data suggest that juveniles account for 20% to 30% of the rapes and 30% to 60% of the cases of child molestation committed in this country each year (Brown, Flanagan, & McLeod, 1984; Fehrenbach, Smith, Monastersky, & Deishner, 1986). Furthermore, studies suggest that patterns of juvenile perpetration may portend more chronic and insidious patterns of sexual assault (Abel, et al., 1987; Knight &

AUTHORS' NOTE: This research was supported by a grant from the National Center on Child Abuse and Neglect. We gratefully acknowledge the assistance of LuElla Howard, Dean Burgess, David Knight, Charles Gorski, and Barbara Stone in the collection and processing of data. Requests for reprints should be sent to John A. Hunter, Jr., Ph.D., School of Medicine, University of Virginia, UVA Health System, Health Evaluation Sciences, P.O. Box 800717, Charlottesville, VA 22908.



BEHAVIOR MODIFICATION, Vol. 24 No. 2, April 2000 241-263
© 2000 Sage Publications, Inc.

Prentky, 1993). Although there is growing recognition of the presence of female and prepubescent offenders, it appears that the preponderance of sexual offenses committed by juveniles is perpetrated by adolescent males who target younger children (Davis & Leitenberg, 1987).

It is estimated that there are currently more than 750 treatment programs in the United States and a growing number abroad that provide treatment to adolescent male sex offenders (Safer Society, personal communication, July 25, 1995). This population of youths has been described as suffering from a variety of psychosocial and psychosexual disturbances including low self-esteem and expectations of failure, poor impulse control, weakened masculinity and hostility toward females, deviant sexual arousal and interests, poor social skills, distorted cognitions with regard to sexuality and sexual behavior, and a diminished capacity for empathy (Davis & Leitenberg, 1987; Knight & Prentky, 1993; Becker, Harris, & Sales, 1993). Etiology of these maladaptive attitudes and behaviors has been attributed to a number of developmental experiences, most notably a history of prior sexual victimization. Interest in the association between childhood victimization and later perpetration has arisen out of clinical observation that 40% to 80% of juvenile sex offenders report such a history, and that the likelihood of its presence is inversely related to age of onset of offending behavior (Hunter, Goodwin, & Becker, 1994; Kline, 1987).

The empirical study of adolescent male juvenile sex offenders is in its relative infancy in spite of a proliferation in clinical programming for this population over the past decade. Relatively few research investigations have been conducted to validate clinical impressions about the nature of the disorder, its etiology, and the treatment needs of these youths. Davis and Leitenberg (1987), in their review of the research literature, concluded that extant studies of this population were both sparse and generally of methodologically poor quality. They cited a number of problems including infrequent use of standardized measures, the absence of comparison groups, and the combining of different types of sex offenders (e.g., rapists and child molesters) into one sample.

Becker et al. (1993) reached similar conclusions in a more recent review. Of 73 reviewed studies, only 5 (7%) compared a sample of

adolescent sex offenders with either nonsex-offending delinquents or a sample of adolescents from the general population. These reviewers commented that absence of findings of significant personality differences between nonsex-offending juvenile delinquents and juvenile sex offenders may be an artifact of studies having almost exclusively focused on variables related to presence of a conduct disorder (e.g., impulsivity, low academic performance, etc.). They recommended that future studies compare adolescent sex offenders with control groups on variables thought to be more specific to sexual offending, such as cognitive distortions, deviant sexual interest patterns, and deficits in sexual knowledge.

Likewise, although there is considerable professional support for the etiological association between a history of sexual victimization and subsequent sexual offending (Finkelhor, 1986), few empirical studies have focused on this subject matter. There have been no studies that contrasted the sexual victimization experiences, including psychological perceptions of such experiences, of juvenile sexual offenders with a history of sexual victimization and sexually victimized, nonperpetrating youths. Likewise, there has been no research directed at assessing whether variables found to be associated with severity of impact in sexual abuse victims have predictive utility in identifying victims who subsequently sexually perpetrate. These variables include duration and frequency of abuse, force, and degree of familial/maternal support (Kendall-Tackett, Williams, & Finkelhor, 1993). The relationship between age of the victim and impact has been less clear, although a younger age at time of victimization has been found to be associated with delayed presentation for treatment in adults molested as children (Kendall-Tackett, 1991). Kendall-Tackett et al. (1993), in their review of the research literature on sexual abuse impact, recommended that future studies include an examination of time elapsed since the end of the abuse and the child's cognitive interpretation of the abuse as predictor variables.

The present study was designed to help identify personality characteristics unique to juvenile sex offenders and to assess the utility of severity-of-impact variables in differentiating between youths who, subsequent to their own victimization, sexually perpetrated and those who did not. This study sought to improve on previous investigations

by using standardized measures of psychosocial and psychosexual constructs believed to be relevant to understanding this population and sexual victimization, constructing a sample of juvenile sex offenders with a common presenting problem (i.e., child molestation) and using structural equation modeling to assess theorized relationships between variable sets. Because it was hypothesized that some of these effects would be direct and others indirect (or mediated), the multivariate methods of structural equations modeling (path analysis) were applied. This approach also permitted the use of multisample analysis. The multisample approach was necessary due to the inevitable availability of more predictors for victimized than for nonvictimized youths.

To enhance the sample variance on the personality variables in their influence on predicting a history of sexual perpetration, a composite control group of adolescents was constructed. This composite control group consisted of three subsamples of adolescents: (a) youths from the general population, (b) youths with a history of psychiatric/behavioral impairment, and (c) youths with a history of sexual victimization but with no history of perpetration. This systematic sampling procedure ensured that the study would include all possible combinations of sexual victimization and perpetration (although not in any predetermined fixed proportions) as well as an adequate range of personality characteristics (normal to psychopathological) that were not invariably linked with sexual perpetration solely by virtue of the composition of the study sample. The investigators were not interested in directly comparing these disparate subsamples to each other as experimental groups but in creating a composite sample with sufficient variance on the parameters of interest to adequately test the study's hypotheses, while avoiding building into the study design potentially spurious associations that might be nothing more than statistical artifacts of the criteria for selection of the clinical sample. This study sought to enhance the reliability of the subjects' self-report by gathering data under a certificate of confidentiality issued by the National Institute of Mental Health and by collecting supplementary and corroborative data from parents or agencies.

It was hypothesized that juvenile child molesters could be differentiated from nonsexually perpetrating youths on the basis of the following personality characteristics: lower social competency and self-confidence, greater exploitiveness and poorer interpersonal related-

ness, higher sexual maladjustment, and greater pessimism. In accordance with the cited literature on variables associated with severity of impact, it was hypothesized that sexually victimized/perpetrating youths, relative to their sexually victimized/nonperpetrating counterparts, would have victimization histories reflective of the following: a younger age at time of first victimization, more extensive victimization, longer periods of waiting to report the abuse, and perceptions that their families were less supportive of them in dealing with the effects of the trauma.

METHOD

PARTICIPANTS

Participants in this study were 235 juvenile males between the ages of 13 and 17 ($\bar{x} = 14.7$, $SD = 1.44$). The racial composition of the sample was 50% Caucasian, 46% African American, and 4% Other (Hispanic, etc.). The income of the families of these youths ranged from none to \$250,000 per year ($\bar{x} = \$28,430$, $SD = \$32,344$).

The above-described youths represented subsamples of the following populations: adolescent child molesters with a history of sexual victimization ($n = 55$); adolescent child molesters without a history of sexual victimization ($n = 72$); adolescents with a history of sexual victimization but no history of sexual perpetration ($n = 28$); adolescents with a history of emotional or behavioral maladjustment but no history of sexual victimization or sexual perpetration (psychiatric controls) ($n = 40$); and adolescents without a history of sexual victimization, sexual perpetration, or significant emotional or behavioral maladjustment (normal controls) ($n = 40$).

Youths were categorized into the above subsamples based on referral agency documentation, and information provided by the subject and his parent or guardian. The adolescent sex offenders in the study were those who had been referred to outpatient or residential sex offender treatment programs operated by the Pines Treatment Center in Virginia. The Pines outpatient treatment program serves the Tidewater, Virginia, area, which consists of five cities with a combined population base of approximately 1.5 million. The residential treat-

ment program operated by the Pines serves emotionally and behaviorally disordered youths, including juvenile sex offenders, from across the United States. The adolescent sex offenders in the study were those whose history of sexual acting-out had been documented by either a juvenile court or department of social services and had involved hands-on sexual offenses against a younger child (≥ 3 years' age difference). To promote greater homogeneity in the juvenile sex offender sample, this study focused only on child molesters and excluded adolescents who had engaged in hands-on sexual offenses against peers or adults. Number of child victims of these adolescent sex offenders ranged from 1 to 13 ($\bar{x} = 1.75$, $SD = 1.63$). Gender of their victims was as follows: 53% had a female victim(s) only, 28% had a male victim(s) only, and 19% had a victim(s) of each gender.

Youths with a history of sexual victimization, but not perpetration, were recruited from a variety of sources including departments of social services, mental health treatment providers, and newspaper advertisements. A history of antecedent sexual victimization was defined according to the following criteria: (a) it occurred prior to initiation of any act of sexual perpetration, (b) there was at least a 3-year age difference between the victim and perpetrator, and (c) there was physical contact of a sexual nature between the victim and perpetrator (e.g., fondling of the genitalia or buttocks, oral or anal sodomy, etc.).

Psychiatric controls were recruited from non-sex-offender treatment programs operated by the Pines Treatment Center and from a local detention center operated from the Norfolk, Virginia, Juvenile and Domestic Relations Court. Each of these youths had a documented history of emotional or behavioral maladjustment. Normal controls were recruited from the Tidewater, Virginia, area using newspaper advertisements and notices posted in the community. All subjects were paid \$30 for their participation in the study.

PROCEDURE

Data were collected at several sites across the United States including Virginia, Maryland, and Washington State. All data were collected by trained male and female research assistants who followed a standardized protocol of assessment, which included explanation of the

purpose of the study and obtaining a signed informed consent statement from the youth and his parent or guardian, individual interviews of the youth and parent or guardian using a structured questionnaire (social history, victimization, perpetration data), and administration of the psychosocial and psychosexual attitude and adjustment measures described below.

MEASURES

This study sought to collect comprehensive data from multiple sources to permit an in-depth and reliable analysis of constructs and variables hypothesized to be important in understanding the characteristics of adolescent sex offenders and the contributory role of prior sexual victimization to the etiology of this phenomenon. In particular, objective measures were chosen that purport to assess constructs previously identified in the clinical and research literature to be associated with juvenile sexual offending and a history of sexual victimization. These included measures of the following: psychosocial development and social competency; sexual interests, attitudes, and adjustment; attributional style; and degree of interpersonal relatedness and capacity for empathy.

Structured interview (parent or guardian). Data were collected pertinent to the following: the child's early development, including history of trauma; parental histories of childhood-experienced maltreatment, arrest, substance abuse, and psychiatric treatment; and marital history and current family composition. Those parents of youths with histories of sexual victimization were further interviewed as to their perceptions of the following: attributions of blame and responsibility, victim and perpetrator attributes, parent/victim relationship intimacy, and parental support to the victim postrevelation of the sexual abuse.

Structured interview (youth). All youths with histories of sexual victimization were individually interviewed with regard to the following: the nature and circumstances of the experiences (e.g., age at first victimization, relationship to perpetrator, type of abuse, etc.); perceptions of self and perpetrator attributes; judgments of attributions of

blame and responsibility for the victimization(s); and perceptions of parental response to disclosure.

All youths with histories of sexual perpetration were interviewed as to the characteristics of such experiences including age of onset, number of victims, gender of victims, type of molestation, relationship to victim, and use of force or coercion in the commission of the offense(s).

Erikson Psychosocial Stage Inventory Scale (EPSI). The EPSI (Rosenthal, Gurney, & Moore, 1981) was used to measure level of psychosocial maturity. This instrument consists of six subscales based on Erikson's first six stages of psychosocial development: Trust, Autonomy, Initiative, Industry, Identity, and Intimacy. The test has been widely used and has been found to have satisfactory psychometric properties. Alpha reliability coefficients have been found to range from .57 to .75 across subscales; its construct validity has been supported by the findings of significant correlations between similar EPSI and Greenberger and Sorensen's PSN, Form D scales (Greenberger & Sorensen, 1971; Rosenthal et al., 1981).

Attributional Style Questionnaire (ASQ). The ASQ (Seligman, Abramson, Semmel, & von Baeyer, 1979) was used to assess causal attributions for positive and negative life events as they relate to the dimensions of internality, stability, and globality. Research conducted subsequent to the development of this scale suggests that reliability is improved when all items are combined into two scales: one for positive outcomes and one for negative outcomes (Peterson et al., 1982). Alpha coefficients for the combined positive and negative outcomes have been found to be .75 and .72, respectively (Peterson et al., 1982).

Bem Sex Role Inventory (BSRI). The BSRI (Bem, 1974) was used to assess sex role orientation. This scale was designed as a measure of masculinity, femininity, and androgyny. In recent years, some researchers have offered alternative hypotheses about the meaning of these scales, including the suggestion that the Masculinity Scale may be more of a reflection of interpersonal potency, and the Femininity Scale more of a reflection of interpersonal sensitivity (Brems & John-

son, 1990). It is noted, however, that such reconceptualizations are not completely separable from traditional definitions of masculinity and femininity. The internal consistency of the scale has been demonstrated to be good across subscales with alphas ranging from .75 to .86.

Narcissistic Personality Inventory (NPI). The NPI (Raskin & Hall, 1979) was used to assess personality traits and attitudes associated with narcissism as defined by *DSM-III* criteria. This 40-item scale has seven subscales: Authority, Self-Sufficiency, Superiority, Exhibitionism, Exploiteness, Vanity, and Entitlement. Research (Emmons, 1987) has supported conjecture that this instrument measures both maladaptive (i.e., exploitiveness/entitlement) as well as healthier aspects of narcissism (i.e., leadership/authority, self-sufficiency, etc.). Studies support both the internal consistency of the scale (alphas range from .80 to .86 across studies) as well as its construct validity (Emmons, 1987).

Multiphasic Sex Inventory (MSI) (Research Edition; Form J—Juvenile Male). Five MSI (Nichols & Molinder, 1984) scales were used to assess psychosexual attitudes and characteristics: Cognitive Distortions and Immaturity (CDI), Sexual Inadequacy (SI), Sexual Knowledge and Beliefs (SKB), Sexual Obsessions (SO), and Social Sexual Desirability (SSD). This latter scale was designed to identify individuals responding to items with a social desirability response bias. Nichols and Molinder (1984) report moderate to high internal consistency of the three scales (SSD, SO, SKB) subject to such analysis (Kuder-Richardson correlations ranging from .40 to .71). The SKB and SSD scales have been shown to differentiate adult sex offenders from normal controls (Nichols & Molinder, 1984).

Hogan Empathy Scale (EM). The EM (Hogan, 1969) was used to measure cognitive empathy or the ability to understand another person's plight and emotions. Higher scale scores have been found to be negatively correlated with neuroticism and antisocial behavior and positively correlated with social awareness and interpersonal skills. Satisfactory test-retest reliability (.84) and moderate internal consis-

tency ($\alpha = .605$) have been established (Chlopan, McCain, Carbonell, & Hagen, 1985).

Questionnaire Measure of Emotional Empathy (QMEE). The QMEE (Mehrabian & Epstein, 1972) was used as a measure of emotional empathy, or the ability to vicariously experience the emotions of others. The QMEE has been found to be positively correlated with arousability and moral development and negatively related to aggression. Its internal consistency has been established using an adolescent population (Chlopan et al., 1985; Miller & Eisenberg, 1988).

Adolescent Cognitions Scale (ACS). The ACS (Becker & Kaplan, 1985) was used to assess distorted thinking patterns characteristic of juvenile and adult sexual offenders. Such thinking patterns are those that sex offenders use to justify their behavior or minimize its significance. Hunter, Becker, Kaplan, and Goodwin (1991) found the instrument to have fair internal consistency (alphas from .45 to .71 across administrations) and test-retest reliability (17 of 32 items significantly positively correlated). Initial analysis suggested that its validity may have been compromised by a social desirability response bias. Therefore, in this study, scores from this instrument were adjusted for the same.

STATISTICAL ANALYSES

Multivariate statistical analyses were performed using the SAS (SAS Institute, 1989) and EQS for Windows (Bentler, 1989) software packages. Covariance matrices were constructed using the SAS CORR procedure; confirmatory factor analyses were performed and related factor analytic structural equation models were developed using the EQS causal modeling program. A factor analytic structural equations model consists of two major components: (a) a measurement model and (b) a structural model.

The measurement model. The measurement model is essentially a confirmatory factor analysis, wherein several directly measured items (called manifest variables or indicators) are related to a smaller set of

hypothetical constructs (called latent variables or common factors) presumed to be underlying the correlations between them. For present purposes, this procedure is superior to traditional exploratory factor analyses, in that the latter derives the multivariate constructs empirically from the correlations between manifest indicators and consequently runs the risk of capitalization on chance associations (alpha slippage) and of equivocal post hoc interpretation of the factors. Instead, confirmatory factor analysis permits the theoretical specification of the latent constructs as a priori hypotheses to be tested against the correlational data. By the exclusive prior assignment of each item to the theoretically specified hypothetical constructs, confirmatory factor analysis also reduces the number of factor loadings needed and so enhances the efficiency of parameter estimation.

Because of the great multicollinearity among many of the measures in this study (Cohen & Cohen, 1983; Pedhazur, 1982), common factors were constructed for the hypothetical constructs relating to personality and sexual maladjustment. All 235 study participants were pooled for the basic measurement model, regardless of their prior history of victimization. SSD (MSI) was used as an additional predictor of several self-report measures of sexual maladjustment to statistically control for this potential source of common bias among these particular measures. This ensured that the common factor variance forming the sexual maladjustment factor was not attributable to spurious correlations between measures that might have been caused by SSD. Residual covariances were also estimated between pairs of measures sharing common variance components that were not related to the common factors. These were covariances between pairs of related measures, such as Internal Positive with Internal Negative (ASQ), Stable Positive with Stable Negative (ASQ), Global Positive with Global Negative (ASQ), and Masculinity with Femininity (BSRI). These residual covariances were specified a priori to avoid having these special relationships bias the measurement of the more general trait factors (cf. Ferketich, Figueredo, & Knapp, 1991; Figueredo, Ferketich, & Knapp, 1991). Because the common factors were not hypothesized to be conceptually independent of one another, covariances between the common factors were also estimated in the model. Any measures applying exclusively to study participants with

a prior history of sexual victimization were modeled only in the context of the multisample structural model described below.

The structural model. The structural component of the model is essentially a path analysis between the latent constructs that were produced by the factor analysis. Path analysis, or structural equations modeling, consists of imposing a restricted set of causal pathways, also specified a priori, and testing them against the correlations between constructs. A saturated structural model is merely one that freely estimates the direct correlations between all of the common factors; any structural model that can adequately reproduce that pattern of intercorrelations with a reduced set of hypothesized causal pathways is deemed to be superior by the principle of parsimony. Structural equations modeling permits the modeling of factor intercorrelations by any combination of direct effects, indirect effects, spurious effects, and residual effects (James, Mulaik, & Brett, 1982).

Because some measures in this study were applicable exclusively to the subsample of study participants with a prior history of sexual victimization, our structural equations model was constructed using the multisample analysis approach to missing data (cf. Bentler, 1989). Where missing data fall into no more than a few discrete patterns of missingness, multisample analysis can be used to remedy the estimation problem. In this procedure, the sample is divided into smaller subsamples that are homogeneous for missing data. Cross-sample equality constraints are then imposed on all parameters that are shared across subsamples to obtain a single set of estimates for the combined, composite sample. Thus, the total sample was divided into one subsample of 78 study participants with a prior history of sexual victimization (the "molested" subsample) and another subsample of 157 study participants without a prior history of victimization (the "unmolested" subsample) for which victimization variables were modeled as missing. Excepting the relations between measures unique to the molested subsample, the identical structural model was tested simultaneously on both subsamples and equality constraints were imposed and tested on all shared model parameters. The model for the molested subsample included a small measurement model for the additional

victimization factor underlying several of the measures unique to that subsample.

Because the molested subsample of 78 was too small to reliably yield independent estimates of all the parameters specified in the common measurement model, the multisample structural analysis was based on unit-weighted factor scores for the personality and sexual maladjustment constructs that had been validated in the confirmatory factor model of the pooled subsamples. Thus, it was not possible to test the factorial invariance of these constructs across subsamples. Nevertheless, we found no theoretical reason to hypothesize any differences in factor patterns between the two subsamples. Furthermore, numerous empirical studies and Monte Carlo simulations have shown that unit-weighted factor scores, in which all significant indicators are weighted equally (i.e., 1.0), possess the following desirable characteristics: (a) They are typically correlated about 0.95 to differentially weighted factor scores, (b) they are more generalizable across independent samples, and (c) they are considerably easier to calculate (Gorsuch, 1983). For the Sexual Maladjustment factor, several self-reported measures were residualized on SSD prior to the aggregation of the unit-weighted factor scores.

Structural equation models were evaluated by the use of the statistics chi-square, CFI (the Bentler-Bonnett Comparative Fit Index), NFI (the Bentler-Bonnett Normed Fit Index), and NNFI (the Bentler-Bonnett Nonnormed Fit Index). Chi-square measures the statistical goodness-of-fit of the covariance matrix observed to that reproduced by the factor model. A significant chi-square is therefore grounds for rejection of the factor model specified, and a nonsignificant chi-square is grounds for its tentative acceptance. The CFI, NFI, and NNFI are measures of practical goodness-of-fit for large sample sizes, such as those used in this study. With such large samples, a small effect will result in a statistically significant lack of fit. However, with such large samples, the CFI, NFI, and NNFI values should be greater than 0.90 to be considered satisfactory levels of practical goodness-of-fit, even if significant chi-square values are obtained (Bentler & Bonnett, 1980; Bentler, 1989). Because we anticipated substantial inhomogeneities of variance in the natural distributions of the data, all SEM (Structural Equation Modeling) models were estimated by general-

ized least squares (GLS), which has very similar properties and assumptions to maximum likelihood (ML) (cf. Bentler, 1989), but has the added virtue of producing the best linear unbiased estimators with either heteroskedasticity, which are unequal variances, or autocorrelation, which are correlated errors (Berry & Feldman, 1985).

RESULTS

The measurement model. The chi-square value for the measurement model was statistically significant, $\chi^2(416) = 654.987, p < .001$, indicating that the confirmatory factor model did not perfectly predict all the covariances between the measured variables. However, all three of the practical indices of fit (CFI, NFI, and NNFI) for the model were highly acceptable. The CFI was 1.000, the NFI was .999, and the NNFI was 1.000. Indices of fit exceeding .90 are considered acceptable for all practical purposes (Bentler & Bonnett, 1980). All of the hypothesized factor loadings were statistically significant and are presented in Table 1. The factor loadings are expressed as standardized regression weights. In addition, Table 1 presents the hypothesized effects of SSD, tabulated as an extra column, on each of the affected self-reported measures. These were not all found to be statistically significant. The factor intercorrelations were also quite variable and not all statistically significant. These are presented in Table 2. In both Tables 1 and 2, an asterisk indicates a statistically significant model parameter ($p < .05$).

The confirmatory factor analysis yielded the following five factors: Optimism, consisting of several scales from the ASQ reflective of the degree to which attributions about positive events are internal, stable, and global; Pessimism, with major loadings from ASQ scales assessing the degree to which attributions about negative life events are internal, stable, and global; Narcissism, a multidimensional factor consisting of scales from the NPI reflective of both adaptive (e.g., Self-Sufficiency) as well as unadaptive (e.g., Exploiteness) attitudes about self and others; Maturation, consisting of scales from the EPI reflective of attained level of psychosocial development; and Sexual Maladjustment, a multidimensional factor consisting of scales from

TABLE 1
Factor Loadings

<i>Factors</i>		
Optimism		
Internal positive/ASQ	.528*	
Stable positive/ASQ	.970*	
Global positive/ASQ	.967*	
Hopefulness/ASQ	1.000*	
Pessimism		
Internal negative/ASQ	.425*	
Stable negative/ASQ	.971*	
Global negative/ASQ	.964*	
Hopelessness/ASQ	1.000*	
Narcissism		
Authority/NPI	.407*	
Exhibitionism/NPI	.476*	
Superiority/NPI	.329*	
Entitlement/NPI	.620*	
Exploiteness/NPI	.601*	
Self-sufficiency/NPI	.394*	
Vanity/NPI	.314*	
Maturation		
Trust/EPPI	.635*	
Autonomy/EPPI	.746*	
Initiative/EPPI	.668*	
Industry/EPPI	.692*	
Identity/EPPI	.791*	
Intimacy/EPPI	.535*	
Sexual maladjustment		
Masculinity/BSRI	-.308*	
Femininity/BSRI	-.364*	
QMEE	-.493*	.155*
Hogan	-.441*	.163*
Cognitions scale	.608	-.027
CDI/MSI	.489*	-.133
Sexual inadequacy/MSI	.305*	-.294*
Sexual knowledge/MSI	-.284*	.291*
Sexual obsessions/MSI	.546*	.317*

NOTE: ASQ = Attributional Style Questionnaire; NPI = Narcissistic Personality Inventory; EPPI = Erikson Psychosocial Stage Inventory; BSRI = Bem Sex Role Inventory; QMEE = Questionnaire Measure of Emotional Empathy; CDI = Cognitive Distortions and Immaturity Scale; MSI = Multiphasic Sex Inventory; SSD = Social Sexual Desirability Scale.

* $p < .05$.

TABLE 2
Factor Intercorrelations

<i>Factors</i>	<i>O</i>	<i>D</i>	<i>N</i>	<i>M</i>	<i>SM</i>
O	—				
D	.466*	—			
N	-.107	-.103	—		
M	.159	-.124	-.605*	—	
SM	-.266*	-.050	.512*	-.678*	—

NOTE: O = Optimism; D = Depression; N = Narcissism; M = Maturation; SM = Sexual Maladjustment.

* $p < .05$.

several instruments which assess unhealthy sexual preoccupations and attitudes, and level of interpersonal skill and sensitivity.

As shown in Table 1, scores from several scales loading on the sexual maladjustment factor were adjusted for a potential social desirability bias by subtracting variance shared with the SSD of the MSI. This latter scale was designed to identify individuals who were responding to the MSI in a socially desirable response set. These adjustments were performed by including the measure of SSD as a predictor in the measurement equations for each of the affected indicators and, by the statistical control of extraneous variance, resulted in higher factor loadings for most of these scales. Consistent with theoretical predictions, the two empathy scales, the Masculinity and Femininity scales of the BSRI, and the SKB scale of the MSI loaded negatively on this factor. The ACS and the CDI, SO, and SI scales of the MSI also loaded negatively. Factor intercorrelations were all in the theoretically expected direction.

The structural model. The chi-square value for the structural model was not statistically significant, $\chi^2(113) = 118.254, p = .349$, indicating that the multisample structural equations model correctly predicted the covariances between the constructs to within an acceptable margin for sampling error, that the same model specification adequately fit both the molested and the unmolested subsamples, and that the corresponding parameters estimates (structural path coefficients) for both subsamples could be successfully modeled as virtually equal to each other across subsamples. All three of the practical indices of fit

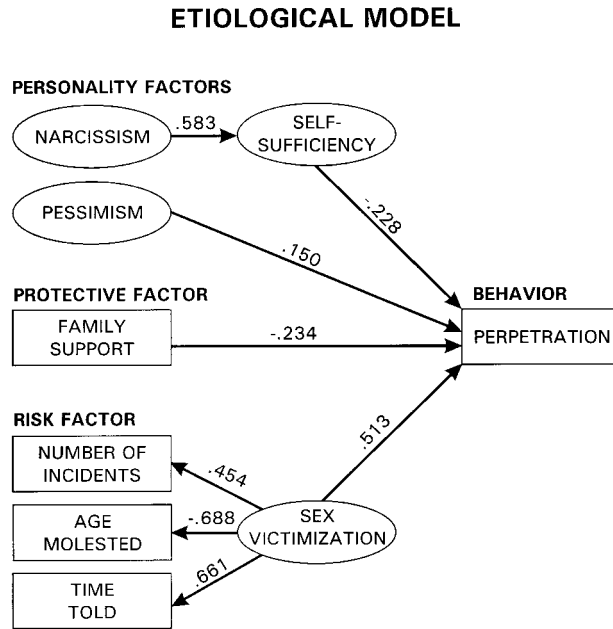


Figure 1. Prediction of perpetrator classification as a function of personality, sexual victimization, and family support characteristics.

(CFI, NFI, and NNFI) for the model were also highly acceptable. The CFI was .998, the NFI was .964, and the NNFI was .998. As in the measurement model, indices of fit exceeding .90 are considered acceptable for all practical purposes (Bentler & Bonnett, 1980). Results of the structural model are summarized in Figure 1. The structural path coefficients are expressed as standardized regression weights. Again, an asterisk after a path coefficient indicates a statistically significant model parameter ($p < .05$).

Two of the significant effects on perpetrator classification (Perpetration) are common to both the molested and unmolested subsamples. These two are a positive effect (+.150) of the Pessimism factor and a negative effect (−.228) of the Self-Sufficiency subscale of Narcissism. Because of the paradoxically negative correlation between the Narcissism factor and Perpetration, this effect was successfully modeled as completely mediated by the Self-Sufficiency subscale of

Narcissism. Thus, Narcissism had an indirect effect on Perpetration exclusively through its positive effect (+.583) on Self-Sufficiency. This means that the more pessimistic or hopeless and the less self-sufficient the individual, the more likely that individual was to perpetrate a sexual molestation. A high degree of self-sufficiency might also indicate a greater tendency toward Narcissism, but this did not otherwise appear to have any direct influence on the perpetration of sexual molestation.

The other two significant effects on Perpetration are unique to the molested subsample. These two are a negative effect (−.234) of Family Support and a positive effect (+.513) of Victimization. This latter construct is a common factor indicated by three measures unique to the molested subsample: Number of Incidents (+.454), Age Molested (−.688), and Time Told (+.661). This means that the higher the number of sexual molestations perpetrated on an individual, the younger the age at which those molestations are experienced, and the greater the subsequent delay in reporting those molestations, the more likely that individual was to perpetrate a sexual molestation in the future. However, the greater the family support experienced by an individual on reporting the said molestations, the less likely that individual was to perpetrate a sexual molestation. The Victimization coefficient is by far the largest effect in the model. Jointly, all predictors taken together account for a little more than 39% of the variance in perpetrator classification (Perpetration) in this sample.

DISCUSSION

Consistent with hypotheses, adolescent child molesters were found to have more deficits in self-confidence, independence, assertiveness, and self-satisfaction than nonperpetrating youths and to be more pessimistic and apt to self-blame in their explanations of the negative events that occur in their lives. Contrary to predictions, empirical support was not obtained for the hypotheses that these youths are more sexually maladjusted per se, psychosocially immature, or narcissistically entitled and exploitive. Furthermore, they were not found to be

less likely than other adolescents to have internal, stable, and global attributions for the positive events that occur in their lives.

The above findings appear to be consistent with a conceptualization of juvenile sex offenders as youths who are lacking in social competencies and who are perhaps competitively disadvantaged relative to their peers. Thus, the sexual acting-out of these juveniles may be more reflective of compensatory behavior than psychopathy and arrested sexual development and paraphiliac interest. These data suggest that juvenile sex offenders, unlike their adult counterparts, may not as a group be distinguishable based on their sexual characteristics.

The findings of this study that relate to a history of sexual victimization appear to be consistent with both the victimization impact literature and basic developmental theory. It appears reasonable to assume that the younger the child at the time of the experienced sexual trauma and the more often he or she was abused, the more detrimental is its effect on his or her subsequent psychosocial and psychosexual development. Consistent with previous findings, these results also suggest that a younger age at onset of the abuse may be related to delayed reporting and detection.

The findings of this study are consistent with an emerging literature (Goodman et al., 1994; Waterman, 1994) on the role of family support in attenuating the effects of trauma on children. Youths in this study who perceived their families as having been less supportive of them after revelation of the abuse were those who were more likely to have later sexually perpetrated against younger children. It can be speculated that increased family support is conducive to restoration of self-esteem and affirmation of self-worth and may help prevent the emergence of disengagement coping strategies (e.g., social withdrawal, problem avoidance, self-denigration), which had been found to be predictive of post-traumatic stress disorder in adult trauma victims (Foa, Rothbaum, & Steketee, 1993; Foa, Steketee, & Rothbaum, 1989; Kemp, Green, Hovanitz, & Rawlings, 1995).

IMPLICATIONS FOR PRACTICE AND DIRECTIONS FOR FUTURE RESEARCH

The study's results argue for the creation of clinical programming for juvenile child molesters that has as its cornerstone addressing defi-

cits in social competency and restoring self-esteem. It may be through the attainment of social competency and the achievement of peer relationship success that juvenile child molesters become better socialized and ultimately cease engaging in sexually maladaptive behaviors. These results therefore support the appropriateness of cognitive-behavioral approaches to heterosocial-sexual skill enhancement, social problem solving, and assertiveness training with this population. As long-term outcome may be more closely associated with mastery and internalization of prosocial skills and values than reduction of paraphilic interest per se, it would appear prudent for practitioners to attend to new research in this area. Potentially promising is the application of clinical research findings related to enhancement of social skill learning and generalization through natural environment training, exposure to multiple stimulus and response exemplars, and peer-mediated intervention (Christopher, Nangle, & Hansen, 1993).

Results of this study also point to the importance of clinically targeting parental attitudes and behaviors in recovery programs for child maltreatment victims. Altering of negative parenting styles and the enhancement of positive parent-child interactions may prove pivotal to maltreated children achieving emotional and social restoration following trauma experiences. As suggested by recent clinical studies, cognitive-behavioral methodologies may be particularly effective in achieving desired attitudinal and behavioral shifts in this area (Haskett, Myers, Pirrello, & Dombalis, 1995; Stauffer & Deblinger, 1996).

The role of the family in creating a support system for the child appears to be a particularly fruitful area for future research. Although results of this study revealed a correlation between victim perceptions of familial support and outcome, causality cannot be assumed. It is possible that the juvenile's perception of his or her own abuse experiences may have been affected by events associated with his or her subsequent perpetration.

The authors would like to comment on the importance of conducting prospective studies on sexually victimized children to more accurately assess familial and other variables associated with long-term outcome and risk of subsequent perpetration. To date, the preponderance of studies on this subject has retrospectively examined the rate of sexual victimization in identified populations of sex offenders, as opposed to prospectively tracking victims to determine how many

eventually become sexual perpetrators. Inflated correlations between potential causative agents and outcomes are a statistical artifact of this type of research. It is important for future research studies to assess the validity of etiological models using a prospective research design. It is only through the conducting of such a prospective research study that the true risk of sexual victimization leading to sexual perpetration can be ascertained.

By design, the conducted study was restricted to the study of juvenile child molesters. It is not known whether the identified personality and victimization variables would also have predictive utility in identifying juveniles who raped or committed other sexual offenses. Future studies should compare juvenile child molesters with other juvenile sex offender populations and further assess the influence of personality and victimization characteristics in juvenile sexual offending by using these variables to not only predict perpetrator classification but also characteristics of the offending behavior (e.g., number of victims, age of onset, level of force, etc.).

REFERENCES

- Abel, G. G., Becker, J. V., Cunningham-Rathner, J., Mittelman, M. S., Murphy, W. D., & Rouleau, J. L. (1987). Self-reported sex crimes of nonincarcerated paraphiliacs. *Journal of Interpersonal Violence, 2*, 3-25.
- Becker, J. V., Harris, C. D., & Sales, B. D. (1993). Juveniles who commit sexual offenses: A critical review of research. In G. C. N. Hall, R. Hirschman, J. Graham, & M. Zaragoza (Eds.), *Sexual aggression: Issues in etiology and assessment, treatment, and policy*. Washington, DC: Taylor and Francis.
- Becker, J. V., & Kaplan, M. (1985). *Adolescent cognition scale*. Unpublished manuscript, University of Arizona.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*(2), 155-162.
- Bentler, P. M. (1989). *EQS: Structural equations program manual*. Los Angeles, CA: BMDP Statistical Software.
- Bentler, P. M., & Bonnett, D. G. (1980). Significance tests and goodness-of-fit in the analysis of covariance structures. *Psychological Bulletin, 88*, 588-606.
- Berry, W. D., & Feldman, S. (1985). Multiple regression in practice. In M. S. Lewis-Beck (Ed.), *Quantitative applications in the social sciences*. Sage University Paper Series 50. Newbury Park, CA: Sage.
- Brems, C., & Johnson, M. E. (1990). Re-examination of the Bem Sex-Role Inventory: The interpersonal BSRI. *Journal of Personality Assessment, 55*(3, 4), 484-498.
- Brown, F., Flanagan, T., & McLeod, M. (Eds.). (1984). *Sourcebook of criminal justice statistics*. Washington, DC: Bureau of Justice Statistics.

- Chlopan, B. E., McCain, M. L., Carbonell, J. L., & Hagen, R. L. (1985). Empathy: Review of available measures. *Journal of Personality and Social Psychology, 48*(3), 635-653.
- Christopher, J., Nangle, D. W., & Hansen, D. J. (1993). Social-skills interventions with adolescents: Current issues and procedures. *Behavior Modification, 17*(3), 314-338.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Erlbaum.
- Davis, G. E., & Leitenberg, H. (1987). Adolescent sex offenders. *Psychological Bulletin, 101*(3), 417-427.
- Emmons, R. A. (1987). Narcissism: Theory and measurement. *Journal of Personality and Social Psychology, 52*(1), 11-17.
- Fehrenbach, P. A., Smith, W., Monastersky, C., & Deishner, R. W. (1986). Adolescent sexual offenders: Offender and offense characteristics. *American Journal of Orthopsychiatry, 56*(2), 225-233.
- Ferketich, S., Figueredo, A. J., & Knapp, T. R. (1991). Focus on psychometrics: The multitrait-multimethod approach to construct validity. *Research in Nursing & Health, 14*, 315-320.
- Figueredo, A. J., Ferketich, S., & Knapp, T. R. (1991). More on MTMM: The role of confirmatory factor analysis. *Research in Nursing & Health, 14*, 387-391.
- Finkelhor, D. (1986). Initial and long-term effects: A review of the research. In D. Finkelhor (Ed.), *A sourcebook on child sexual abuse* (pp. 143-179). Beverly Hills, CA: Sage.
- Foa, E. B., Rothbaum, B. O., & Steketee, G. S. (1993). Treatment of rape victims. *Journal of Interpersonal Violence, 8*(2), 256-276.
- Foa, E. B., Steketee, G. S., & Rothbaum, B. O. (1989). Behavioral/cognitive conceptualizations of post-traumatic stress disorder. *Behavior Therapy, 20*, 155-176.
- Goodman, G. S., Taub, E. P., Jones, D. P. H., England, P., Port, L. K., Rudy, L., & Prado, L. (1994). *Emotional effects of criminal court testimony on child sexual assault victims*. Monographs of the Society for Research in Child Development. Chicago: University of Chicago.
- Gorsuch, R. L. (1983). *Factor analysis*. Hillsdale, NJ: Lawrence Erlbaum.
- Greenberger, E., & Sorensen, A. B. (1971, July). *Toward a concept of psychosocial maturity*. Center for Social Organization of Schools Report, Johns Hopkins University, No. 108 30.
- Haskett, M. E., Myers, L. W., Pirrello, V. E., & Dombalis, A. O. (1995). Parenting style as a mediating link between parental emotional health and adjustment of maltreated children. *Behavior Therapy (Child Abuse Special Series), 26*(4), 625-642.
- Hogan, R. (1969). Development of an empathy scale. *Journal of Consulting and Clinical Psychology, 33*, 307-316.
- Hunter, J. A., Becker, J. V., Kaplan, M., & Goodwin, D. W. (1991). The reliability and discriminative utility of the Adolescent Cognition Scale for juvenile sexual offenses. *Annals of Sex Research, 4*, 281-286.
- Hunter, J. A., Goodwin, D. W., & Becker, J. V. (1994). The relationship between phallometrically measured deviant sexual arousal and clinical characteristics in juvenile sexual offenders. *Behaviour Research and Therapy, 32*(5), 533-538.
- James, L. R., Mulaik, S. A., & Brett, J. M. (1982). *Causal analysis: Assumptions, models, and data*. Beverly Hills, CA: Sage.
- Kemp, A., Green, B. L., Hovanitz, C., & Rawlings, E. I. (1995). Incidence and correlates of post-traumatic stress disorder in battered women: Shelter and community samples. *Journal of Interpersonal Violence, 10*(1), 43-55.
- Kendall-Tackett, K. A. (1991). Characteristics of abuse influence when adults molested as children seek treatment. *Journal of Interpersonal Violence, 6*, 486-493.
- Kendall-Tackett, K. A., Williams, L. M., & Finkelhor, D. (1993). Impact of sexual abuse on children: A review of synthesis of recent empirical studies. *Psychological Bulletin, 113*(1), 164-180.

- Kline, D. F. (1987). *Long-term impact of child maltreatment on the victims as reflected in further contact with the Utah Juvenile Court and the Utah Department of Adult Corrections*. Logan, UT: Utah State University Press.
- Knight, R. A., & Prentky, R. A. (1993). Exploring characteristics for classifying juvenile sex offenders. In H. E. Barbaree, W. L. Marshall, & S. M. Hudson (Eds.), *The juvenile sex offender* (pp. 45-83). New York: Guilford.
- Mehrabian, A., & Epstein, N. (1972). A measure of emotional empathy. *Journal of Personality*, *40*, 525-543.
- Miller, P. A., & Eisenberg, N. (1988). The relation of empathy to aggressive and externalizing/antisocial behavior. *Psychological Bulletin*, *103*(3), 324-344.
- Nichols, H. R., & Molinder, M. A. (1984). *Multiphasic sex inventory manual*. (Available from H. R. Nichols & M. A. Molinder, 437 Bowes Drive, Tacoma, WA 98466)
- Pedhazur, E. J. (1982). *Multiple regression in behavioral research: Explanation and prediction*. New York: Holt, Rinehart, & Winston.
- Peterson, C., Semmel, A., von Baeyer, C., Abramson, L. Y., Metalsky, G. I., & Seligman, M.E.P. (1982). The attributional style questionnaire. *Cognitive Therapies Research*, *6*, 287-300.
- Raskin, R., & Hall, C. S. (1979). A narcissistic personality inventory. *Psychological Reports*, *45*, 590.
- Rosenthal, D. A., Gurney, R. M., & Moore, S. M. (1981). From trust to intimacy: A new inventory for examining Erikson's stages of psychosocial development. *Journal of Youth and Adolescence*, *10*(6), 525-537.
- SAS Institute, Inc. (1989). *SAS Language and Procedures: Usage* (Version 6, 1st ed.). Cary, NC: SAS Institute.
- Seligman, M.E.P., Abramson, L. Y., Semmel, A., & von Baeyer, C. (1979). Depressive attributional style. *Journal of Abnormal Psychology*, *88*, 242-247.
- Stauffer, L. B., & Deblinger, E. (1996). Cognitive behavioral groups for nonoffending mothers and their young sexually abused children: A preliminary treatment outcome study. *Child Maltreatment: Journal of the American Professional Society on the Abuse of Children*, *1*(1), 65-76.
- Waterman, J. (1994). Mediators of effects on children: What enhances optimal functioning and promotes healing? In J. Waterman, R. J. Kelly, J. McCord, & M. K. Oliveri (Eds.), *Behind the playground walls: Sexual abuse in preschools*. New York: Guilford.

John A. Hunter, Jr., Ph.D., is vice president and executive director of Research and Outcomes for Alternative Behavioral Services of First Hospital Corporation. He is also a research associate professor in the Department of Psychology at the University of Arizona. He has published extensively on the etiology, assessment, and treatment of juvenile sexual offending and is a member of the board of directors for the Association for the Treatment of Sexual Abusers. He also serves on the editorial boards of the Journal of Family Violence, Aggression and Violent Behavior, and Sexual Abuse: A Journal of Research and Treatment.

Aurelio José Figueredo, Ph.D., is an associate professor in the Department of Psychology at the University of Arizona.