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The Utility of the Diagnosis of Pedophilia: A Comparison of Various Classification Procedures

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Abstract This study examined the utility of the diagnosis of pedophilia in a sample of extra-familial child molesters assessed at a university teaching hospital between 1982 and 1992. Pedophilia was defined in one of four ways: (1) DSM diagnosis made by a psychiatrist; (2) deviant phallometric profile; (3) DSM diagnosis and a deviant phallometric profile; and, (4) high scores based on the Screening Scale for Pedophilic Interest (Seto & Lalumière, 2001). Demographic data, psychological tests, and offence history were obtained and group differences were analyzed along with the ability of certain variables to contribute uniquely to the classification of pedophilia. Results indicated that few significant differences existed on psychological measures between pedophilic and nonpedophilic extra-familial child molesters regardless of the classification system employed. Finally, results indicated that the procedures used to define pedophilia were not significantly related to one another. Results are discussed in terms of the utility of the diagnosis of pedophilia.

Keywords Sex offender · DSM · Pedophilia · Child molesters · Phallometric assessment

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Introduction

Issues of classification have significant implications for the assessment and treatment of sexual offenders. Previous research has suggested that sexual offenders are a heterogeneous group, such that those who offend against adults vs. children differ on important dimensions, such as criminal history and risk to re-offend (Hanson & Bussière, 1998). With regard to child molesters, it is evident that there are additional differences with respect to victim selection (i.e., intra-familial or incest vs. extra-familial) (Hanson & Bussière, 1998; Quinsey, Lalumière, Rice, & Harris, 1995) and victim gender (Barbaree & Seto, 1997; Walsh, 1994). However, most research on child molesters has neglected to differentiate this group based on the presence or absence of a diagnosis of pedophilia (Barbaree & Seto, 1997; Seto, 2004), despite the fact that such a diagnosis implies a deviant sexual interest, and differential consequences for the prediction of recidivism.

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR; American Psychiatric Association [APA], 2000) specifies three criteria that must be met to apply a diagnosis of pedophilia. Criterion A requires that the individual has experienced recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving sexual activity with a prepubescent child or children (generally aged 13 years or younger) over a period of at least 6 months. Criterion B states that the person must have acted on these sexual urges, or the sexual urges or fantasies cause marked distress or interpersonal difficulty. Lastly, Criterion C requires that the individual being assessed is at least 16 years old and at least 5 years older than the child or children in Criterion A. The DSM-IV-TR further qualifies the diagnosis with specifiers indicating an attraction to males, females, or

both, limited to incest, exclusive type (i.e., attracted only to children), or nonexclusive type.

The purpose of nosological diagnosis is to categorize individuals into homogeneous subgroups, which is intended to promote accurate prognosis and effective treatment. Despite this, the diagnosis of pedophilia is often ignored by clinicians and is rarely addressed by researchers who work with sexual offenders (Marshall, 1997). As a result, the terms "pedophile" and "child molester" have been used interchangeably, which can create conceptual confusion (Barbaree & Seto, 1997). In the literature on sexual offending, a child molester is described as an individual who has engaged in a sexually motivated act against a prepubescent child, without an indication of preference, whereas a pedophile is described as an individual who has displayed a preference for sexual behavior against a child (O'Donohue, Regev, & Hagstrom, 2000). This distinction is important, as not all child molesters are pedophiles, and some pedophiles may not have committed a sexual offence against a child (Konopasky & Konopasky, 2000).

Concerns regarding the reliability and validity of the paraphilias have been raised (Levenson, 2004; McConaghy, 1999; Moser, 2002). Issues surrounding the psychometric integrity of the diagnosis of pedophilia have been recognized, and researchers have questioned the value added by the use of such a label (Marshall, 1997; O'Donohue et al., 2000). For example, specific concerns include the ambiguous nature of the terms "recurrent" and "intense" within Criterion A, and this possibly contributes to reduced reliability (Levenson, 2004). Another concern is the requirement that the behavior/urges/fantasy cause distress or impairment. Given that clinical judgment has often performed poorly in evaluative circumstances (Meehl, 1996), these inferences may adversely affect the reliability and validity of this diagnosis. In fact, one study (Levenson, 2004) evaluated the reliability of various diagnoses in a sample of 295 adult incarcerated sexual offenders. The results revealed that the paraphilias were not reliably diagnosed between raters ($\kappa = .47$) and that the diagnosis of pedophilia was only slightly better, but clearly below acceptable standards ($\kappa = .65$).

Other concerns with the diagnosis of pedophilia include the fact that child molesters are frequently reluctant to admit that they have deviant sexual fantasies and that they often minimize their deviant sexual interests, which makes it difficult to gather accurate information for diagnostic purposes (Marshall, 1997; Ward, Hudson, Johnston, & Marshall, 1997).

Similar concerns were identified regarding the diagnosis of sadism in a forensic population. Marshall, Kennedy, and Yates (2002) compared sadists and non-sadists (as delineated in the DSM-III-R and DSM-IV) on a variety of offence features (e.g., use of threats), self-report (e.g., sexually violent fantasies), and phallometric data. Results indicated that the designation of sadism was not based on diagnostic criteria and that the sadists and non-sadists were not reliably differentiated on the features assumed to be characteristic of sadistic sexual offenders (e.g., deviant arousal to rape). Moreover, the results demonstrated that those individuals defined as non-sadists were, in fact, more deviant on numerous variables (e.g., use of torture in the offence) than those diagnosed with sadism, calling into question the validity and utility of the diagnosis and raising concerns about the implications for an offender diagnosed with sadism.

Due to the apparent difficulties with the DSM criteria indicated above, it has been suggested that phallometric testing may provide reliable evidence of pedophilia in the absence of an accurate diagnosis (Freund & Blanchard, 1989; Freund & Watson, 1991) or, at least, contribute to the diagnostic process (Eccles & Marshall, 1993). Moreover, phallometric testing allows for the assessment of deviant sexual preference, while attempting to overcome deliberate impression management, which may undermine self-report information in forensic populations (Nugent & Kroner, 1996). In an examination of the diagnostic utility of the phallometric test for pedophilia, Freund and Watson (1991) found adequate sensitivity, such that only 3.1% of the sexual offenders against adult victims demonstrated sexual preference to children, whereas 78.2% of the child molesters with female victims and 88.6% of the child molesters against male victims demonstrated deviant sexual arousal to children. More recently, Blanchard, Klassen, Dickey, Kuban, and Blak (2001) examined the specificity and sensitivity of phallometric testing for pedophilia. Results indicated that rapists having the greatest number of adult victims had the lowest probability of being diagnosed with pedophilia according to phallometric assessment (specificity = 96%). In contrast, the phallometric results for those men having the greatest number of child victims revealed a 61% sensitivity rate. These studies lend support to the hypothesis that phallometric assessment may serve as a useful screening device to indicate pedophilic interest.

Although phallometric testing should provide evidence as to the degree of pedophilic interest, there are limitations when relying on this approach. For example, numerous studies have demonstrated that a significant proportion of offenders are able to suppress penile responses (Howes, 1998; Kalmus & Beech, 2005; Marshall & Fernandez, 2000). Furthermore, the interpretation of arousal is difficult, as some offenders may not be aroused to a certain stimulus, while others may be aroused to deviant stimuli but are not known to be sexual offenders (Bahroo, 2003). Therefore, the problems with low responding (O'Donohue & Letourneau, 1992), along with the lack of reliability (Barbaree, Baxter, & Marshall, 1989) and validity (Hall, Proctor, & Nelson, 1988), have led some researchers to question the utility of this procedure with sexual offenders (Marshall & Fernandez, 2000).

Despite the concerns about phallometric assessment, relative sexual interest in children remains an excellent predictor of sexual recidivism (Hanson & Bussière, 1998). However, practical limitations, such as limited access to phallometric laboratories, may preclude the ability to assess offenders phallometrically. For this reason, Seto and Lalumière (2001) developed the *Screening Scale for Pedophilic Interest* (SSPI) to identify those individuals most likely to display sexual interest in children. Research to date using the SSPI has suggested that scores were significantly related to deviant phallometric responding, and identified pedophilic interest better than chance. The SSPI was also related to both sexual and violent recidivism in child molesters and made a significant contribution to the prediction of sexual offending, beyond that of phallometric testing alone (Seto, Harris, Rice, & Barbaree, 2004).

Currently, what is known about risk to re-offend, general psychological attributes, and recidivism in pedophiles is largely extrapolated from studies on intra- and extra-familial child molesters, who may or may not meet diagnostic criteria for pedophilia. As such, little is known regarding the psychological constructs specific to pedophilia and which differentiate pedophiles from nonpedophiles. For this reason, the present study was an empirical investigation of methods commonly used in the forensic assessment of extra-familial child molesters. One purpose of the present study was to establish the typical profile of pedophiles compared to nonpedophiles, so as to provide a point of comparison for future research.

While prior studies have examined the construct validity of the diagnosis (Barbaree & Seto, 1997; Moser, 2002), the current investigation examined the utility of the diagnosis of pedophilia in a sample of extra-familial child molesters in a forensic psychiatric setting. It should be acknowledged that this study was not theoretically driven. That is, the variables utilized were not chosen based on their perceived relationship with pedophilia. The variables were part of the standard assessment battery introduced at the clinic in 1982 and they are currently used with a variety of sexual offenders.

There was limited research comparing strictly defined pedophiles vs. nonpedophiles. However, research has suggested that pedophiles exhibit low levels of sexual aggressiveness and are not motivated by general aggressive tendencies (Cohen et al., 2002; Eher, Grunhut, Frunhwald, & Hobl, 2001; Greenberg, Bradford, & Curry, 1996). In a review of the pedophilic literature, Seto (2004) indicated that the majority of pedophiles demonstrated more distorted attitudes regarding sex with children, that they preferred male victims, and that they exhibited problematic levels of sexual functioning compared to nonpedophiles. Based on the literature mentioned previously, we were able to make predictions about many of the variables included in our study. No hypotheses were made for the variables that had no substantial research base with this population (i.e., age, educational attainment, prior violent and criminal charges and/or convictions), or where prior research has been unable to detect differences between pedophiles and nonpedophiles (i.e., alcohol abuse, psychopathy; see Seto, 2004; Seto et al., 2004). Our hypotheses were as follows:

1. Pedophiles would be less likely to have ever been married compared to the nonpedophiles.
2. Pedophiles would have a greater number of victims than the nonpedophiles.
3. Pedophiles would be more likely to have offended against male victims compared to nonpedophiles.
4. Pedophiles would demonstrate lower levels of sexual and nonsexual violence in the offence compared to nonpedophiles.
5. Pedophiles would demonstrate greater levels of deviant sexual arousal than nonpedophiles.
6. Pedophiles would report more cognitive distortions regarding sexual activity with children than nonpedophiles
7. Pedophiles would report poorer levels of sexual functioning than the nonpedophiles.
8. Pedophiles would exhibit lower levels of hostility than the nonpedophiles.
9. Pedophiles would have more prior sexual charges and/or convictions than the nonpedophiles.
10. There would be a significant relationship between the various classification procedures. For example, an offender classified as pedophilic according to one method (e.g., DSM) would also meet criteria for pedophilia according to other methods (e.g., SSPI).

Method

Participants

All 206 participants were adult men who had been convicted of a hands-on sexual offence against an unrelated male or female child (extra-familial child molester) who was under the age of 16 at the time of the offence. The participants were assessed at a university teaching hospital in a large Canadian city between 1982 and 1992. If police records indicated that a participant had ever offended against an adult or against a family member, he was excluded from the analysis.

The sample was divided into four categories based on different definitions or methods of determining pedophilia. Each pedophilic group was compared to a group of men determined to be nonpedophilic based on the same method of classification. The first comparison included men who had been diagnosed with pedophilia based on DSM criteria (DSM, $n = 85$). This group was compared to those individuals not diagnosed with pedophilia based on DSM criteria

($n = 79$). The second comparison studied men defined as pedophilic based on a deviant phallometric index score (i.e., ≥ 1) on either the Pedophile Index and/or the Pedophile Assault Index (PD, $n = 110$) and compared them to men determined to be nonpedophilic based on a phallometric score of < 1 ($n = 45$). The third comparison distinguished between those offenders classified as pedophiles when they received a diagnosis of pedophilia in addition to receiving a deviant phallometric index score (i.e., ≥ 1) on either of the indices mentioned above (DSM + PD, $n = 49$). Again, this group was compared to those offenders who were not given a diagnosis of pedophilia and received a phallometric score <1 (i.e., non-deviant, $n = 43$). The last set of comparisons included men described as pedophilic based on the SSPI (Seto & Lalumière, 2001). Those men with a score of 3–5 were defined as pedophilic (SSPI, $n = 103$). Those with scores below 3 were considered nonpedophilic ($n = 103$). SSPI scores were calculated by the authors based on file material. Each participant was not necessarily assessed with both methods (DSM and PD) for determining pedophilia, and thus, participant numbers in each group will not sum to 206. The reasons for missing data may have included the lack of information (file or self-report) for diagnosis or the inability to adequately assess deviant sexual arousal because of technological problems or refusal to participate.

Procedure

The standard procedure in the Sexual Behaviors Clinic was that each patient was first interviewed by a psychiatrist who, after a couple of sessions, provided a DSM diagnosis (if suitable), in addition to filling out demographic information (e.g., age, education, marital status). The psychiatrist would have access to previous medical charts and police reports which would have included diagnostic history, previous psychological assessment, psychosocial history, and criminal history. These diagnoses were made by experienced psychiatrists whose major clinical work was with sexual offenders. Subsequently, participants would then be assessed in the phallometric laboratory and complete various questionnaires, including the psychological tests. The assessment battery administered at the hospital was part of the clinical assessment used with all men charged and/or convicted of sexual offending. All participants signed an informed consent form at the time of their assessment. This form allowed the use of information obtained from the assessment for research purposes.

The specific version of the DSM used in the determination of the diagnoses varied depending on the year of assessment. The progression of the DSM has resulted in more specific and comprehensive criteria. Since all participants were seen between 1982 and 1992 only DSM-III ($n = 56$) and DSM-III-R ($n = 108$) criteria were used. The criteria have become more stringent over the various versions. While the DSM-III briefly mentions behavior in Criterion A, no such indication is given in the next version. Therefore, diagnoses should not be applied to those individuals who molested a child and did not suffer from deviant urges or fantasies. Moreover, the DSM-III-R is noticeably more comprehensive with respect to age specifications and length required for urges/fantasies than the DSM-III. Subsequently, the DSM-IV added "behavior" to the criteria but the requirement for distress remained. Note that this latter element was changed with the most recent edition of the DSM (DSM IV-TR), which was not used in this study. The more stringent criteria of the DSM-III-R, compared to the DSM-III, might have resulted in fewer diagnoses for that group. Given that the participants were assessed using the earlier versions of the DSM, they were not classified with the "behavior" criterion described above. However, as Marshall (1997) noted, many diagnosticians ignored these statements and did not apply the criteria exactly as defined in order to treat those individuals who were clearly engaging in deviant sexual thoughts or behavior, regardless of their reported lack of distress and self-reported behavior.

Measures

Michigan Alcoholism Screening Test

The Michigan Alcoholism Screening Test (MAST) is a 24-item self-report inventory used to identify behaviors that are suggestive of alcohol abuse (Seltzer, 1971; Seltzer, Vinokur, & van Rooijen, 1975). The degree of problems associated with alcoholism is reflected in the total number of "yes" responses. Scores of 5 or 6 are indicative of alcohol problems and scores of 7 or more are suggestive of alcohol abuse (Allnutt, Bradford, Greenberg, & Curry, 1996). The MAST has been utilized in many studies involving sexual offenders (e.g., Allnutt et al., 1996; Firestone, Bradford, Greenberg, Larose, & Curry, 1998; Firestone, Bradford, McCoy, et al., 1998; Hucker, Langevin, & Bain, 1988; Rada, 1975; Rada, Laws, & Kellner, 1976). The internal consistency is good, with an overall alpha coefficient of .87, a validity coefficient of $r = .79$, and is relatively unaffected by age of respondent or socially desirable responding (Magruder-Habib, Durand, & Frey, 1991; Magruder-Habib, Stevens, & Alling, 1993).

Derogatis Sexual Functioning Inventory

The Derogatis Sexual Functioning Inventory (DSFI) consists of 10 subscales and assesses dimensions of sexual functioning (Derogatis & Melisaratos, 1979). The Sexual Functioning Index (SFI) is a global measure derived by summing the 10 subtest scores and provides an overall measure of an individual's level of sexual functioning, where higher scores represent healthy sexual functioning (Derogatis, 1980). The

DSFI has good validity and good internal consistency with correlations ranging from .56 to .97 for the 10 subscales, and test-retest reliability ranging from .42 to .96 for the 10 subscales. Although the DSFI has been used with large non-forensic samples, its use with sexual offenders is limited (see Firestone, Bradford, Greenberg, et al., 1998; Firestone, Bradford, McCoy, et al., 1998; Hanson, Cox, & Woszcsyna, 1991).

Buss-Durkee Hostility Inventory

The Buss-Durkee Hostility Inventory (BDHI; Buss & Durkee, 1957) contains 75 true-false statements which provide a measure of general hostility, where higher scores are suggestive of higher levels of hostility. A total score of 38 or greater is consistent with high levels of hostility. The BDHI consists of 7 subscales: Assault, Indirect Aggression, Irritability, Negativism, Verbal Aggression, Resentment, and Suspicion. Among rapists, BDHI scores have been consistently higher than non-offending controls (Firestone, Bradford, Greenberg et al., 1998; Rada et al., 1976), in addition to other types of sexual offenders (Firestone, Nunes, Moulden, Broom, & Bradford, 2005).

Psychopathy Checklist-Revised

The Psychopathy Checklist-Revised (PCL-R; Hare, 1991) consists of 20 items designed to assess behaviors and personality characteristics considered fundamental to psychopathy. Factor analyses have consistently yielded two distinct and stable factors representing (1) the degree of personality, interpersonal, and affective traits deemed relevant to the construct of psychopathy, and (2) the degree of antisocial behavior, instability, and corrupted lifestyle (Hare, 1991; Hare et al., 1990). Scores of 30 and above are generally considered indicative of psychopathy. The psychometric properties of this instrument are well established. The reported alpha coefficient, aggregated across seven samples of incarcerated males from Canada, the United States, and England was .87 (Hare, Forth, & Strachan, 1992). Using five prison samples and three forensic samples, Hare et al. (1990) found the correlation between the two factors averaged $r = .48$. The PCL-R is currently widely used in sexual offender research (Firestone, Bradford, Greenberg, & Serran, 2000; Serin & Amos, 1995; Serin, Malcolm, Khanna, & Barbaree, 1994), and is consistently identified as an important predictor of violent and sexual recidivism (Quinsey et al., 1995).

In the present investigation, research assistants completed PCL-R assessments retrospectively from descriptive material contained in medical files. A random sample of clinic files was independently rated by each researcher, resulting in satisfactory interrater reliability correlation, $r = .85$. Valid PCL-R ratings can be achieved through quality archival information (Harris, Rice, & Quinsey, 1994; Wong, 1988).

Cognition Scale

The Cognition Scale, which was designed for use with adult child molesters, is composed of 29 statements which reflect values regarding sexual contact with children. Factor analysis has indicated that the scale is one-dimensional (Abel et al., 1989; Hanson, Gizzarelli, & Scott, 1994). Scores range from 1 to 5, where lower scores are indicative of a greater degree of acceptance towards adult sexual contact with children. This scale has demonstrated good discriminant validity, in that child molesters have been distinguished from non-offending controls (Hanson et al., 1994; Stermac & Segal, 1989). Reliability is good, with an alpha coefficient of .92 for internal consistency (Hanson et al., 1994). A Pearson product-moment coefficient of .76 indicated good test-retest reliability (Abel et al., 1989).

Screening Scale for Pedophilic Interests

The SSPI (Seto & Lalumière, 2001) is a brief screening instrument based on historical/static offence variables. The scale includes four items: (1) presence of a male victim; (2) more than one victim; (3) victim is 11 years-old or younger; and (4) unrelated victim. The SSPI has been shown to be highly correlated with measures of pedophilic interest based on phallometric assessment (pedophilic index), and to identify pedophilic interest in child molesters significantly better than chance (Seto & Lalumière, 2001). Although this measure was not designed with a cutoff score, we chose to dichotomize our participant group based on high vs. low scores for the purpose of comparing this non-intrusive and relatively simple measure to the more traditional methods of determining pedophilic interest (e.g., DSM).

Measurement of sexual arousal

Changes in penile circumference in response to audio stimuli were measured by means of an Indium-Gallium strain gauge and processed on an IBM compatible computer for storage and printout. Given that this methodology utilized an audio presentation of stimuli, comparisons between the following results and findings published with video stimuli should be interpreted with caution.

Stimuli presentation. The order of the stimuli presentation, held constant for all participants, was computer-controlled. Participants were presented with one or more of three series of audiotapes. The audiotape battery consisted of vignettes of approximately two minute duration describing sexual activity between two people varying with respect to age, sex, and

degree of consent, coercion, and violence portrayed (Abel, Blanchard, & Barlow, 1981). Each participant was presented with a full set containing one vignette from each category following instructions to allow normal arousal to occur. The female child series consisted of descriptions of sexual activity with a female partner/victim for eight categories. The male child series consisted of eight corresponding vignettes involving a male partner/victim but also included one scenario involving an adult female partner. For each of the female child and male child series, two equivalent scenarios for each category were included. Categories were as follows: (a) child initiates, (b) child mutual, (c) non-physical coercion of child, (d) physical coercion of child, (e) violent sex with child, (f) nonsexual assault of child, (g) consenting sex with female adult, and (h) sex with female child relative (incest).

Scoring. The Pedophile Index was calculated by dividing the participant's highest response to a child initiates or child mutual stimulus by the highest response to an adult-consenting stimulus. The Pedophile Assault Index was calculated by dividing the highest response to an assault stimulus involving a child victim (non-physical coercion of child, physical coercion of child, sadistic sex with child, or nonsexual assault of child) by the highest response of the child initiates or child mutual stimulus.

Criminal offence histories

Offence information was gathered from the Canadian Police Information Center (CPIC). This information was based on a national database of criminal arrests and convictions, including INTERPOL reports from the Royal Canadian Mounted Police. CPIC records contain the individual's criminal history and include details such as the dates of charges and convictions, the nature of the offenses, the disposition of the incident (e.g., convicted, charges withdrawn, etc.) and the sentence/penalty imposed in cases of convictions.

Offence characteristics

Offence characteristics included a measure of the violence of the sexual offence and the intrusiveness of the sexual act. The level of violence and the intrusiveness of the sexual act were rated by the interviewing psychiatrist. The level of violence used a 10-point scale indicative of increasing levels of force and violence. The specific descriptors along with their corresponding scores were as follows: no force or violence (0), threat of assault with no weapon (1), threat of assault with weapon (2), minor injury with no weapon (3), minor injury with weapon (4), severe beating with no weapon (5), severe beating with weapon (6), potential homicide (7), homicide (8), and homicide with post-death mutilation (9). The intrusiveness of the sexual act was scored based on a 6-point scale with higher scores representing increasing levels of sexual intrusion. The specific descriptors along with their corresponding scores were as follows: no sexual intrusiveness (0), verbal threat (1), attempt (2), touching (3), penetration (4), and sexual assault with excessive violence (5).

Statistical analyses

Prior to performing statistical tests, the data were screened to ensure that assumptions underlying the tests were not violated. Outlying cases were detected using a criterion of plus or minus three *SD* from the mean or by visual inspection of normal probability plots. Values of outlying cases were adjusted upward or downward according to the direction of the problem so that these scores were replaced by the next most extreme value (Howell, 2002).

The groups (pedophilic vs. nonpedophilic) were compared within each labeling category: DSM, PD, DSM + PD, and SSPI. Each set of analyses of variance compared the two groups within each category across a number of variables: demographic (e.g., age, education), offence (e.g., number of victims, level of violence), psychological (e.g., alcohol abuse, sexual functioning), and offence history (e.g., prior convictions) variables. Chi-square analyses were performed to examine differences regarding the dichotomous variables: marital status, and sex of the victim. Logistic regression analyses were performed to determine which variables made significant and unique contributions in the prediction of the various pedophilic determinations. Finally, chi-square analyses were conducted to examine the relationship between the different classification procedures and odds ratios were calculated to show the strength of the relationship within each comparison. The procedure to calculate the odds ratio for categorical data is described by Field (2005).

Results

Table 1 shows the mean scores and comparisons across the predictor variables for the two groups of child molesters as a function of the DSM criteria. Of the 18 variables examined, 2 were statistically significant. The use of violence in the offence was significantly different, where those diagnosed as nonpedophiles were more violent in the commission of the offence compared to those diagnosed as pedophiles. Additionally, the Pedophile Index was significantly different, indicating those diagnosed as pedophiles displayed greater deviant phallometric arousal compared to those not diagnosed as pedophiles. It is interesting to note that both groups, on average, scored in the deviant range of sexual arousal.

Table 1 Demographic, offence, psychological, and criminal offence history data for pedophilic and non-pedophilic sexual offenders based on DSM diagnoses

Variable	DSM diagnosis								
	Pedophile			Non-pedophile					
	M/%	*SD*	*n*	*M*/%	*SD*	*n*	*F* or χ^2	*df*	*p*
Age (in years)	37.40	12.48	85	37.22	12.25	79	.01	162	*ns*
Education (in years)	11.08	4.44	84	10.54	3.38	69	.71	151	*ns*
Ever married	28.6	—	24	40.3	—	31	2.44	1	*ns*
Number of victims	3.27	5.18	78	2.23	1.53	70	2.45	146	*ns*
Victim gender							1.17	2	*ns*
Male only	45.9	—	39	46.9	—	37			
Female only	44.7	—	38	48.1	—	38			
Both male and female	9.4	—	8	5.1	—	4			
Violence of offence	.28	.99	81	.77	1.29	64	6.45	143	.012
Intrusiveness of sexual assault	3.56	.78	85	3.51	.86	71	.19	154	*ns*
MAST	7.38	10.18	71	9.68	12.96	22	.75	91	*ns*
BDHI	29.54	14.35	81	26.53	12.99	72	1.84	151	*ns*
DSFI(SFI)	29.54	11.09	79	32.09	11.50	69	1.89	146	*ns*
PCL-R	18.02	8.24	78	18.14	7.48	72	.008	148	*ns*
ABEL	4.30	.60	75	4.11	.77	35	2.01	108	*ns*
Pedophile index	1.68	1.64	82	1.12	1.35	75	5.48	155	.021
Pedophile assault index	.83	.65	81	.83	.73	74	.004	153	*ns*
Prior charges/convictions sexual	.98	3.19	85	1.46	4.68	79	.60	162	*ns*
Violent	1.29	3.35	85	2.05	4.88	79	1.36	162	*ns*
Criminal	3.77	8.42	85	4.32	7.39	79	.19	162	*ns*

Note: MAST; Michigan Alcoholism Screening Test, BDHI; Buss Durkee Hostility Inventory; DSFI; Derogatis Sexual Functioning Inventory; PCL-R; Psychopathy Checklist Revised, ABEL; Abel Cognitions Scale. Percentages reported indicated the proportion who had been married and who had offended against a specific gender.

To assess the predictive accuracy of the violence of the offence and the Pedophile Index on the diagnosis of pedophilia, a logistic regression analysis was performed. A test of the full model against a constant-only model was statistically significant, χ^2 (2, $N = 139$) = 10.87, $p < .01$, suggesting that the predictor variables reliably distinguished between pedophilic and nonpedophilic sexual offenders as determined by a DSM diagnosis. The variance in pedophilic diagnosis accounted for was medium, with a Nagelkerke adjusted $R^2 = .10$, indicating that 10% of the variability in pedophilic and non-pedophilic sexual offenders was accounted for by the violence of the offence and the Pedophile Index. Specifically, 24.6% of the nonpedophiles and 91% of the pedophiles were predicted, for an overall success rate of 61.9%. According to the Wald criterion, the Pedophile Index reliably predicted pedophilic sexual offenders according to the DSM diagnosis. The odds ratio indicated that for every unit increase in the Pedophile Index, the predicted odds of a diagnosis of pedophilia increased by 32%.

Table 2 shows the mean scores and comparisons across the predictor variables for the two groups of child molesters as a function of the PD criteria. Of the 18 variables examined, 5 were statistically significant. The phallometric results were used to determine group membership and, as such, the scores for pedophiles and nonpedophiles were included in the table for descriptive purposes only. The pedophilic group was more hostile as indicated by scores on the BDHI, demonstrated poorer sexual functioning on the DSFI, and was rated more psychopathic on the PCL-R, compared to the nonpedophilic group.

The logistic regression for the PD group was statistically significant, χ^2 (3, $N = 133$) = 30.90, $p < .001$. The overall variance accounted for in pedophilic designation was large, with a Nagelkerke adjusted $R^2 = .30$, indicating that 30% of the variability in pedophilic and non-pedophilic designation was predicted by the variables BDHI, DSFI, and PCL-R. Prediction analysis revealed that 44.7% of the nonpedophiles and 92.6% of the pedophiles were correctly classified, for an overall success rate of 78.9%. According to the Wald criterion, sexual functioning predicted pedophilic sexual offenders according to PD criteria. The odds ratio indicated that for every unit increase in the Sexual Functioning Index, the predicted odds of a diagnosis of pedophilia decreased by 9%.

Table 3 shows the mean scores and comparisons across the predictor variables for the two groups of child molesters as a function of the DSM + PD criteria. Of the 18 variables examined, 4 were statistically significant. Again, a deviant or

Table 2 Demographics, offence, psychological, and criminal offence history data for pedophilic and non-pedophilic sexual offenders based on phallometric results

	Phallometric results								
	Pedophile			Non-pedophile					
Variable	*M*/%	*SD*	*n*	*M*/%	*SD*	*n*	*F* or χ^2	*df*	*p*
Age (in years)	37.19	12.85	110	38.04	10.89	45	.15	153	*ns*
Education (in years)	10.61	4	103	11.67	4	43	2.15	144	*ns*
Ever married	33.3	—	36	36.4	—	16	.13	1	*ns*
Number of victims	3.41	4.62	99	2.21	1.95	42	1.57	139	*ns*
Victim gender							2.71	2	ns
Male only	44.5	—	49	48.9	—	22			
Female only	45.5	—	50	48.9	—	22			
Both male and female	10.0	—	11	2.2	—	1			
Violence of offence	.52	1.23	96	.44	1.03	41	.14	135	*ns*
Intrusiveness of sexual assault	3.53	.84	107	3.60	.77	42	.18	147	*ns*
MAST	7.33	10.70	64	9.19	11.59	27	.54	89	*ns*
BDHI	30.22	13.80	106	22.48	12.41	42	10.00	146	.002
DSFI	27.88	9.70	103	37.98	12.39	40	26.55	141	.001
PCL-R	18.90	7.80	100	15.48	7.79	43	5.79	141	.017
ABEL	4.19	.69	74	4.42	.51	33	3.09	105	*ns*
Pedophile index	1.90	1.57	110	.21	.32	45	51.22	153	.001
Pedophile assault index	1.11	.61	110	.16	.27	45	100.27	153	.001
Prior charges/convictions sexual	1.43	4.69	110	.79	1.87	45	.81	153	*ns*
Violent	1.85	4.78	110	1.11	2.24	45	.97	153	*ns*
Criminal	4.36	8.81	110	3.10	5.53	45	.81	153	*ns*

Note: MAST; Michigan Alcoholism Screening Test, BDHI; Buss Durkee Hostility Inventory; DSFI; Derogatis Sexual Functioning Inventory; PCL-R; Psychopathy Checklist Revised, ABEL; Abel Cognitions Scale. Percentages reported indicated the proportion who had been married and who had offended against a specific gender.

non-deviant phallometric profile contributed to the determination of group membership and, as such, the phallometric scores for pedophiles and nonpedophiles were included in the table for descriptive purposes only. The pedophilic group demonstrated less violence in their offences, scored higher on the BDHI, and demonstrated poorer sexual functioning on the DSFI compared to the nonpedophilic group.

Logistic regression was used to test the ability of these variables to predict pedophilia for the DSM + PD group. A test of the full model with all three predictors (violence of offence, BDHI, DSFI) against a constant-only model was statistically significant, χ^2 (3, $N = 74$) = 26.33, $p < .001$, which suggested that the predictors, as a set, reliably distinguished between pedophilic and nonpedophilic sexual offenders based on DSM + PD criteria. The overall variance accounted for in pedophilic designation was large, with a Nagelkerke adjusted $R^2 = .40$, indicating that 40% of the variability in pedophilic and non-pedophilic designation was predicted by these variables. Prediction success was adequate, with 60% of the nonpedophiles and 79.5% of the pedophiles correctly classified, for an overall success rate of 71.6%. According to the Wald criterion, the violence of the offence and sexual functioning reliably predicted pedophilic sexual offenders according to DSM + PD criteria. The odds ratio indicated that for every unit increase in the Violence of the Offence, the predicted odds of a diagnosis of pedophilia decreased by 68%. Moreover, for every unit increase in the Sexual Functioning Index, the predicted odds of a diagnosis of pedophilia decreased by 6%.

Table 4 shows the mean scores and comparisons across the predictor variables for the two groups of child molesters as a function of the SSPI criteria. Of the 18 variables examined, 4 were statistically significant. The number and gender of the victims were used to determine group membership and, as such, the scores for pedophiles and nonpedophiles on these items were included in the table for descriptive purposes only. Results indicated that the pedophiles had a greater number of victims, offended against more males and fewer females, were less intrusive in their sexual offence, and had significantly more prior sexual charges and/or convictions, than the nonpedophilic group.

The logistic regression was statistically significant, χ^2 (2, $N = 198$) = 20.98, $p < .001$. The overall variance accounted for in pedophilic designation was medium, with a Nagelkerke adjusted $R^2 = .13$, indicating that 13% of the variability in pedophilic and non-pedophilic designation was accounted for by sexual intrusiveness and prior sexual charges and/or convictions. Note that the number and gender of victims were not used in this regression as they were items used in the dependent measure. Prediction

Table 3 Demographic, offence, psychological, and criminal offence history data for pedophilic and non-pedophilic sexual offenders based on DSM and phallometric criteria

	DSM diagnosis and phallometric results								
	Pedophile			Non-pedophile					
Variable	*M*/%	*SD*	*n*	*M*/%	*SD*	*n*	*F* or χ^2	*df*	*p*
Age (in years)	35.41	12.05	49	38.65	12.31	43	1.63	90	*ns*
Education (in years)	10.91	4.59	49	10.78	3.56	40	.02	87	*ns*
Ever married	20.4	—	10	37.2	—	16	3.19	1	*ns*
Number of victims	4.22	6.51	45	2.49	1.79	39	2.60	82	*ns*
Victim gender							4.71	2	*ns*
Male only	40.0	—	19	48.8	—	21			
Female only	44.4	—	23	48.8	—	21			
Both male and female	15.6	—	7	2.3	—	1			
Violence of offence	.13	.45	47	.89	1.35	36	13.15	81	.001
Intrusiveness of sexual assault	3.61	.70	49	3.58	.86	38	.04	85	*ns*
MAST	6.83	10.50	40	11.87	13.51	15	2.15	53	*ns*
BDHI	32	13.20	47	24.97	12.90	39	6.16	81	.015
DSFI	26.83	9.13	46	35.12	11.94	37	12.87	81	.001
PCL-R	19.57	7.92	45	17.10	7.56	40	2.16	83	*ns*
ABEL	4.26	.64	42	4.26	.54	23	.00	63	*ns*
Pedophile index	2.62	1.50	49	.26	.35	43	101.33	90	.001
Pedophile assault index	.87	.47	48	.70	.76	43	1.60	89	*ns*
Prior charges/convictions sexual	1.31	3.92	49	1.19	3.09	43	.03	90	*ns*
Violent	1.55	3.98	49	1.63	3.31	43	.01	90	*ns*
Criminal	4.78	10.24	49	3.47	5.73	43	.55	90	*ns*

Note: MAST; Michigan Alcoholism Screening Test, BDHI; Buss Durkee Hostility Inventory; DSFI; Derogatis Sexual Functioning Inventory; PCL-R; Psychopathy Checklist Revised, ABEL; Abel Cognitions Scale. Percentages reported indicated the proportion who had been married and who had offended against a specific gender.

analysis revealed that 50.5% of the nonpedophiles and 74.3% of the pedophiles were correctly classified, for an overall success rate of 62.6%. According to the Wald criterion, the number of prior sexual charges and/or convictions and the intrusiveness of the sexual assault predicted pedophilic sexual offenders according to the SSPI. The odds ratio indicated that for every unit increase in the number of prior sexual offences (charges and/or convictions), the predicted odds of a diagnosis of pedophilia increased by 29%. Moreover, for every unit increase in the intrusiveness of the sexual assault, the predicted odds of a diagnosis of pedophilia decreased by 44%.

Logistic regression analyses, including, regression coefficients, Wald statistics, odds ratios, and 95 per cent C.I. for odds ratios can be found in Table 5.

Chi-square analyses were conducted to test the hypotheses that significant relationships would exist between various classification procedures. This was followed by an odds ratio calculation to determine the strength of the relationship.

There was no significant relationship between individual's diagnosed as pedophilic according to the DSM criteria and individuals classified as pedophilic according to PD, χ^2 (1, $N = 155$) = .80. The odds of a diagnosis of pedophilia (DSM) increased by 36% for offenders with a pedophilic profile according to PD criteria.

Furthermore, no significant relationship existed between individual's diagnosed as pedophilic according to the DSM criteria and individuals classified as pedophilic according to the SSPI criteria, χ^2 (1, $N = 164$) = .04. The odds of a diagnosis of pedophilia (DSM) decreased by 6% for offenders with a pedophilic profile according to SSPI criteria.

Again, no significant relationship was apparent between a diagnosis of pedophilia according to the PD criteria and being diagnosed as a pedophile according to the SSPI criteria, χ^2 (1, $N = 155$) = .07. The odds of a pedophilic profile (PD criteria) increased by 10% for offenders with a pedophilic profile according to SSPI criteria.

Finally, no relationship existed between those individuals diagnosed as pedophilic according to the DSM + PD criteria and those individuals classified as pedophilic according to the SSPI criteria, χ^2 (1, $N = 88$) = 1.77. The odds of a pedophilic profile (DSM + PD) increased by 80% for offenders with a pedophilic profile according to the SSPI criteria.

Table 4 Demographic, offence, psychological, and criminal offence history data for pedophilic and non-pedophilic sexual offenders based on SSPI criteria

	SSPI criteria								
	Pedophile			Non-pedophile					
Variable	*M*/%	*SD*	*N*	*M*/%	*SD*	*n*	*F* or χ^2	*df*	*p*
Age (in years)	37.23	12.66	103	38.16	12.59	103	.28	204	*ns*
Education (in years)	10.63	3.75	101	11.34	3.99	93	1.64	192	*ns*
Ever married	40	—	40	29.2	—	28	2.54	1	*ns*
Number of victims	3.47	4.49	102	1.67	1.59	87	12.71	187	.001
Victim gender							14.08	2	.001
Male only	49.2	—	30	44.7	—	46			
Female only	34.4	—	21	53.4	—	55			
Both male and female	16.4	—	10	1.9	—	2			
Violence of offence	.28	.80	98	.55	1.25	88	3.15	184	*ns*
Intrusiveness of sexual assault	3.25	.94	101	3.58	.78	97	7.20	196	.008
MAST	7.08	10.19	74	8.23	11.27	61	.39	133	*ns*
BDHI	26.93	13.20	100	26.62	13.62	95	.03	193	*ns*
DSFI	30.32	11.34	99	31.99	11.59	91	1.00	188	*ns*
PCL-R	18.77	7.90	61	17.61	7.84	89	.78	148	*ns*
ABEL	4.39	.61	84	4.31	.61	68	.62	150	*ns*
Pedophile index	1.68	1.53	61	1.25	1.51	84	2.97	155	*ns*
Pedophile assault index	.80	.65	61	.85	.71	94	.20	153	*ns*
Prior charges/convictions sexual	1.96	4.98	103	.58	1.34	103	7.37	204	.007
Violent	2.21	5.03	103	1.17	2.10	103	3.74	204	*ns*
Criminal	4.14	7.20	103	3.85	8.09	103	.07	204	*ns*

Note: MAST; Michigan Alcoholism Screening Test, BDHI; Buss Durkee Hostility Inventory; DSFI; Derogatis Sexual Functioning Inventory; PCL-R; Psychopathy Checklist Revised, ABEL; Abel Cognitions Scale. Percentages reported indicated the proportion who had been married and who had offended against a specific gender.

Discussion

This study examined factors that putatively differentiated between pedophiles and nonpedophiles based on four different definitions. While there were some statistically significant differences between the groups on the dependent variables, few clinically meaningful distinctions were found. This finding is consistent with previous research questioning the utility of the DSM diagnoses of the paraphilias (Levenson, 2004; Marshall, 1997; Marshall, Kennedy, & Yates, 2002; O'Donohue et al., 2000).

Pedophiles and nonpedophiles were not differentiated on age, education, and alcohol abuse. However, contrary to our expectations, the two groups did not differ in their

Table 5 Logistic regression analyses of pedophilic classification as a function of demographic, offence, psychological, and criminal offence history data

				95% CI for odds ratio	
Diagnostic category	*B*	Wald test (*Z*-ratio)	Odds ratio	Upper	Lower
DSM Only					
Level of violence	−.32	3.56	.73	1.01	.52
Pedophile index	.28	4.60*	1.32	1.69	1.02
Phallometric only					
BDHI	.02	1.25	1.02	1.06	.99
DSFI	−.09	17.18***	.91	.95	.87
PCL-R	.06	3.33	1.06	1.13	1.00
DSM and phallometric assessment					
Level of violence	−1.13	9.71**	.32	.66	.16
BDHI	.04	2.66	1.04	1.09	.99
DSFI	−.06	4.99*	.94	.99	.89
SSPI					
Prior sexual offences	.26	7.73**	1.29	1.55	1.08
Sexual intrusiveness	−.58	8.62**	.56	.82	.38

Note. BDHI; Buss Durkee Hostility Inventory; DSFI; Derogatis Sexual Functioning Inventory; PCL-R; Psychopathy Checklist Revised.

*$p < .05$, **$p < .01$, ***$p < .001$.

likelihood of ever being married. There were some variables that significantly differentiated between pedophiles and nonpedophiles based on the various definitions but not in a systematic manner. The degree of violence used in the commission of the offence reliably differed between pedophiles and nonpedophiles based on the DSM and on the DSM + PD criteria but the means were not clinically significant. Sexual intrusiveness was also significantly different between the groups in the SSPI category. Consistent with our hypothesis, analyses revealed that nonpedophiles were significantly more violent as a group. Once again, the means indicated that the differences were not clinically meaningful. Hostility and sexual functioning were also differentiating factors in the PD and the DSM + PD groups. In both cases, pedophilic men demonstrated more hostility and extremely poor levels of sexual functioning (less than the 4th percentile). It is of interest to note that in our lab, rapists and incest offenders have also scored at the same low level of sexual functioning as the child molesters in the present investigation (Firestone, Bradford, McCoy, et al., 1998; Firestone et al., 1999).

Higher levels of hostility in pedophiles was contrary to our hypothesis, but is consistent with some other research suggesting that problematic levels of hostility and sexual functioning differentiated pedophiles from other types of sexual offenders (Lee, Pattison, Jackson, & Ward, 2001). Surprisingly, victim gender and cognitive distortions did not differ between pedophiles and nonpedophiles, except where by design (SSPI). This was also true for the number of victims, where the only significant difference between groups was for those distinguished using the SSPI. Given the evidence that pedophiles prefer male victims (see Seto, 2004) and the suggestion that victim preference is an indication of greater deviance, it is perplexing why gender did not differentiate the groups. One explanation is that the methods of classifying pedophiles are inadequate and, as such, do not truly identify pedophilia. Alternatively, perhaps male victim preference is not unique to pedophiles, and instead represents a risk factor across child molesters. With respect to cognitive distortions, the lack of significant differences between pedophiles and nonpedophiles may be a consequence of the transparency of the measure (Vanhouche & Vertommen, 1999). However, it may also reflect a true effect, such that both groups of child molesters engaged in distorted thoughts about sex with children.

Deviant phallometric profiles distinguished between the pedophiles and the nonpedophiles when using the DSM criteria, but not when using the SSPI. It is important to note that two of the groups were defined by deviant sexual responding based on phallometric assessment, so these results were included for descriptive purposes only. When summarizing results for the DSM and SSPI groups, despite a small significant effect for the Pedophile Index within the DSM group, overall no clinically meaningful differences were found. The hypothesis that pedophiles would have more prior sexual charges and convictions was only supported in the SSPI category. No other significant differences were observed between pedophiles and nonpedophiles with respect to criminal history. Only when distinguished using PD criteria, did pedophiles have higher psychopathy scores than nonpedophiles. However, psychopathy differences were not observed in any other classification method.

Despite some statistically significant differences between pedophilic and nonpedophilic groups, specific variables made limited contributions in predicting a pedophilic designation. As such, we felt that this indicated little clinical meaningfulness and utility in the determination of pedophilia.

Our final hypothesis was that the classification procedures would be significantly related to one another. In other words, individuals classified as pedophilic using one diagnostic method should be classified as pedophilic under other methods. The literature is extremely varied with respect to the criteria used to classify a child molester as a pedophile (Seto, 2004). If being classified as pedophilic under one type of procedure was related to a classification under another type, this heterogeneity would be less concerning. However, there were no significant relationships between the procedures used to define pedophilia in this study and with the exception of the relationship between the DSM + PD and SSPI groups, odds ratios suggested a weak relationship amongst the categories. This finding adds to the literature demonstrating the difficulty with the DSM classifications for the paraphilias (Levenson, 2004). As such, clear definitions and criteria must be delineated when describing a population of child molesters as pedophilic in order to allow comparisons across studies and to be clear on the type of population under examination.

Certain limitations should be considered when interpreting these findings. A limitation consistently identified in forensic research involves self-report and response bias (Nugent & Kroner, 1996). Both issues exist in the two main forms of categorization of pedophilia (interviews for DSM diagnosis, and phallometric assessment). Given the social undesirability of sexual interest and contact with children, most individuals are reluctant to acknowledge and admit to such thoughts and behaviors. Some individuals included in the nonpedophilic groups may have denied experiences consistent with the DSM criteria or may have suppressed responding on the phallometric assessment. Additionally, the use of categorical groups (i.e., PD and SSPI) may have resulted in decreased power and inadequate identification of group membership. However, as indicated above, we chose this method to promote comparisons across categories.

This study utilized either the DSM III or the DSM III-R to diagnose pedophilia, depending on the year of assessment. The two versions differed with respect to specificity in their criteria. That is, the DSM III-R provided more stringent

criteria regarding the requirement for age (for both victim and perpetrator) and it was more specific regarding the requirement for length of urges/fantasies. This change in criteria may have contributed to the lack of statistically significant results in the present study. Future research should conduct a similar evaluation using the DSM-IV and DSM-IV-TR to see if the results would differ appreciably from the present findings.

Another potential problem might be that the psychiatrists making the diagnoses in the present investigation were not aware that the utility of their diagnoses was going to be studied. Furthermore, these psychiatrists were not trained to criterion to make such a diagnosis for research purposes. However, they were senior forensic psychiatrists working in a highly recognized academically oriented forensic ward specializing in sexual behaviors, often called upon to provide assessments for medical-legal purposes. In our view, these findings are not a criticism of these individuals. In fact, one might argue that the present process assured ecological validity to the utility of the diagnosis of pedophilia.

Psychometrically, much controversy surrounds the reliability and validity of both the diagnosis of pedophilia (O'Donohue et al., 2000) and phallometric assessment (Marshall & Fernandez, 2000). This is problematic given that both were used to define pedophilic groups. Nevertheless, this decision was based on the fact that these are the two most commonly used procedures to make such a categorization in the field. Clearly, these methodological issues might impact on the integrity of these results. However, given that they remain the standard of practice, the practicality and generalizability of these results argued for the use of these tools and, once again, also increased the ecological validity of this investigation.

A diagnosis of pedophilia in clinical or judicial procedures can be particularly onerous, imputing certain levels of dangerousness, and may affect the sentencing and disposition of a case. Furthermore, it may bear on required programming of an individual while incarcerated or on community release. Given that a diagnosis, especially pedophilia, is designed to convey clinical information about an individual and address prognosis, the finding that there were few meaningful differences associated with such a designation in the present investigation is concerning. Additionally, the inability of the diagnostic process to correlate with other methodologies used in the literature is troublesome.

It is our contention that a diagnosis of pedophilia holds limited utility for practitioners involved in the assessment and treatment of this population. Given the importance of deviant arousal in managing sexual offenders for child molesters in particular (Hanson & Bussière, 1998), emphasis should be placed on this indicator of preference. Until there is evidence that the diagnosis of pedophilia, according to DSM criteria, offers some demonstrable utility regarding such aspects as group differentiation and recidivism (for the relationship with recidivism see, Moulden, Firestone, Kingston, & Bradford, 2006; Wilson, Abracen, Picheca, Malcolm, & Prinzo, 2003), various treatment and management strategies should be guided by purely behavioral and/or physiological indicators of preference.

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