Pedophilia

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Key Words

paraphilias, sexual preferences, sexual offending, risk assessment, intervention

Abstract

Pedophilia is defined as a sexual interest in prepubescent children. It is empirically linked with sexual offending against children: Child pornography offenders and sex offenders with child victims are more likely to be pedophiles based on self-report or objective measures of sexual interests. At the same time, some pedophiles have not had any known sexual contact with children, and perhaps half of sex offenders against children would not meet diagnostic criteria for pedophilia. Pedophilia can be diagnosed using a variety of methods and is an important factor to consider in the assessment of sex offenders because pedophilic offenders are more likely to sexually reoffend and require different interventions. There is no evidence to suggest that pedophilia can be changed. Instead, interventions are designed to increase voluntary control over sexual arousal, reduce sex drive, or teach self-management skills to individuals who are motivated to avoid acting upon their sexual interests.

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INTRODUCTION

Pedophilia is defined as a persistent sexual interest in prepubescent children, as reflected by one's sexual fantasies, urges, thoughts, arousal, or behavior. In its clearest expression, the individual sexually prefers children and has no sexual interest in adults. In other cases, the individual is sexually attracted to children but also has sexual fantasies, urges, etcetera, regarding adults.

Pedophilia: a sexual interest in prepubescent children, reflected in thoughts, fantasies, urges, arousal, or behavior

Child pornography: sexually explicit or suggestive depictions of legal minors

The prevalence of pedophilia in the general population is unknown because large-scale epidemiological surveys have not yet been conducted. Much smaller surveys of convenience samples suggest that the upper limit for the prevalence of pedophilia is around 5%, as almost all of these surveys have shown that 3% to 9% of male respondents acknowledge sexual fantasies or sexual contact involving prepubescent children (e.g., Briere & Runtz 1989, Fromuth et al. 1991, Templeman & Stinnett 1991). Only some of these respondents might meet the diagnostic criteria for pedophilia, however, as these surveys have not asked questions regarding the intensity or persistence of sexual fantasies or behavior.

Pedophilia appears to be much more common among males than among females. The large majority of identified sex offenders against children are male (Greenfeld 1996, Motiuk & Vuong 2002). Retrospective surveys of adult men suggest that female perpetrators of sexual offenses against children represent a higher proportion than criminal justice data would suggest, but they still represent a minority (see Denov 2003 for a review). Clinical case studies and descriptive studies do indicate that female pedophiles exist; for example, Chow & Choy (2002) reported the case of a woman who performed oral sex on two 4-year-old girls she babysat at different times in her life. She admitted to regularly having sexual fantasies about girls around that age and admitted that she was sexually aroused when bathing the girls. She also acknowledged masturbating to orgasm while thinking about the sexual acts she had committed involving the second girl.

Pedophilia is often considered to be synonymous with sexual offending against children, on the intuitive assumptions that (*a*) anyone who is sexually interested in children would act upon that interest when an opportunity becomes available, and (*b*) no individuals would have sexual contact with a child unless they were sexually attracted to children. Yet even after thorough police and child welfare investigations, some pedophiles are found to have no history of sexual contacts with children. For example, Riegel (2004) conducted an anonymous Internet survey of 290 self-identified boy-preferring pedophiles. The majority (78.6%) reported no history of legal involvement as a result of any allegation they had sexual contact with a boy. Similarly, Seto et al. (2006) identified a sample of men who were likely to be pedophilic as a result of their child pornography offending, and 57% did not have any known

history of sexual contact with a child, based on self-report, criminal records, and any other collateral information available (e.g., from child protection services).

In addition, approximately 40% to 50% of sex offenders with child victims are not pedophiles based on their sexual arousal or behavior. Seto & Lalumière (2001) found that 40% of a sample of 1113 sex offenders showed equal or greater sexual arousal to stimuli depicting children compared with stimuli depicting adults. Maletzky & Steinhauser (2002) reported that 43% of the 5223 sex offenders in their sample were diagnosed as pedophiles on the basis of their sexual offense histories. Motivations or explanations for nonpedophilic sex offenders include a lack of more preferred sexual opportunities, hypersexuality, indiscriminate sexual interests, or disinhibition as a result of substance use or other factors (for a review, see Seto 2008).

Most of what we know about pedophilia has come from studies conducted over the past few decades of clinical or correctional samples of men who have committed sexual offenses against children. Much less is known about pedophiles outside of clinical or correctional settings, especially pedophiles who have no history of sexual contacts with children. Such research is difficult to conduct, particularly in today's political and social environment and because of the fear and outrage that pedophilia elicits, but this work is needed if we are to fully understand the etiology and course of pedophilia and to develop strategies to prevent sexual offenses against children.

In the following review, I focus on the diagnosis, assessment, and intervention for pedophilia. More detailed coverage of these topics, as well as discussion of historical, cross-cultural, etiological, and theoretical work, is presented in Seto (2008). The research I cite here relies primarily on samples of sex offenders against children, but when possible, I highlight findings about pedophilia from other sources. In each of the following sections, I briefly review relevant research and highlight major debates in the field. I end the review by making some recommendations for clinical practices.

DIAGNOSIS

Criteria

The two most well known diagnostic schemes in psychology and psychiatry are the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, text revision (DSM-IV-TR; Am. Psychiatr. Assoc. 2000) and the *International Classification of Diseases and Related Health Problems*, 10th revision (ICD-10; World Health Org. 2007). In both schemes, pedophilia can be inferred from information regarding a person's sexual thoughts, fantasies, urges, arousal, or behavior. Sexual behavior involving children is not required to make the diagnosis if one has sufficient information about the other aspects, just as one can recognize someone's heterosexual or homosexual orientation even if that person has been celibate his or her entire life.

Hebephilia: a sexual interest in pubescent children, reflected in thoughts, fantasies, urges, arousal, or behavior

Though the terms "pedophilia" or "pedophile" are often used in media stories and public discussion of sexual contacts with minors, regardless of the minor's age, the critical feature of both clinical definitions is that the interest is in prepubescent children (see Seto 2002). Being sexually interested in older minors, such as a physically mature-looking 15-year-old, is not evidence of pedophilia, although it may violate a jurisdiction's laws if the age of consent for sex is 16, as it is currently in Canada and in many of the American states (age of consent reviewed at **http://www.avert.org/aofconsent.htm**; retrieved on July 4, 2008).

Pediatric data suggest that the average age of onset for puberty for Caucasian girls is around 12, meaning some girls at this age will show signs of secondary sexual development such as breast budding and the emergence of axillary and pubic hair; the average age of onset is even lower for African American girls (Herman-Giddens et al. 1997, Thomas et al. 2001). Chronological age is an imprecise indicator, however, of pubertal status; a more reliable method, described by Tanner (1978), involves an assessment of the myriad physical changes arising from puberty.

Some clinicians and researchers have distinguished between pedophilia and hebephilia,

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with the latter representing a sexual interest in pubescent children who show some signs of secondary sexual development but who are not yet sexually mature. Recent evidence suggests that hebephilia is a distinct paraphilia, as individuals who report being most attracted to pubescent children show different sexual arousal patterns than do individuals who report being most attracted to prepubescent children, with larger responses to the preferred age group (Blanchard et al. 2009). However, the DSM-IV-TR does not list hebephilia as a specific diagnosis, and the ICD-10 incorporates hebephilia in its definition of pedophilia: "A sexual preference for children, boys or girls or both, usually of prepubertal or early pubertal age." (Code F65.4; World Health Org. 2007). More research is needed to determine whether pedophilia and hebephilia represent different disorders. Of particular interest is whether pedophiles and hebephiles, if distinct groups, differ in their prevalence or prognosis.

Concerns About Diagnostic Reliability

O'Donohue and colleagues (2000) and Marshall (2006) have pointed out problems with the current DSM diagnostic criteria for pedophilia, including the absence of data on interrater and test-retest reliability. These same criticisms would apply to the ICD criteria. Levenson (2004) reported on the diagnostic reliability of paraphilias in a sample of adult male sex offenders, three-quarters of whom had committed sexual offenses against minors, and found that the interrater reliability for a diagnosis of pedophilia was "fair" with a kappa of 0.65 across 277 men. This reliability is not impressive, but it is similar to the average interrater reliability of DSM diagnoses (Meyer 2002).

The validity of a diagnosis of pedophilia would likely be higher if its reliability were improved, given the psychometric principle that reliability of a measure constrains its validity. For example, the ability of an accurate diagnosis of pedophilia to predict sexual recidivism would likely be even greater if the reliability of the diagnosis were improved (see Risk Assessment section).

Hillard & Spitzer (2002) have pointed out that DSM-IV-TR, the most recent version of the standard diagnostic manual used in Canada and the United States, amended a change made in the DSM-IV that pedophilia could only be diagnosed if the person was subjectively distressed or socially, occupationally, or otherwise impaired by his or her sexual interest. In other words, in the DSM-IV, an individual who was sexually attracted to children and who acted on that attraction would still not meet the diagnostic criteria if he or she were not concerned about the attraction to children and had not suffered any problems in daily life as a result. This differed from the previous edition, DSM-III-R, which did not require subjective distress or impairment as a criterion. This was changed in DSM-IV-TR, so subjective distress or impairment were again not required to make the diagnosis.

ASSESSMENT METHODS

Self-Report

Pedophilia can be assessed using a variety of methods. Perhaps the simplest is self-report in the form of a clinical interview or questionnaire. This is the most direct method for assessing someone's sexual thoughts, fantasies, and urges. An obvious problem with self-report, however, is that a person may deny having pedophilic interests for very good reason in light of the social sanctions that pedophiles face (Jenkins 1998). The limitations of self-report are not unique to pedophilia, as questions about sexual history are sensitive, and many interviewees may minimize or deny their sexual interests or behaviors, even those that are legal and considered socially acceptable. Anecdotally, self-report can be improved when the interviewer maintains a nonjudgmental tone, questions are asked after less-sensitive topics have been covered and some rapport has been established, and questions are phrased in a manner that may reduce denial (e.g., "How often do you masturbate

in a typical week?" instead of "Do you masturbate?").

Sexual Behavior History

Because of the limitations of self-report, clinicians and researchers have also turned to other methods in the assessment of pedophilia. Pedophilia can be diagnosed on the basis of sexual behavior history. Decades of research have demonstrated that certain child victim characteristics are reliably associated with pedophilia among sex offenders. In particular, sex offenders who have boy victims, multiple child victims, younger victims, or unrelated victims are more likely to be pedophiles than are offenders who have only girl victims, a single child victim, older victims, or only related victims. This information has typically been combined in a subjective and unstructured fashion. In response, we developed a simple four-item scale, the Screening Scale for Pedophilic Interests (SSPI), to summarize an offender's sexual child victim history and to serve as a proxy for psychophysiological assessments of sexual arousal (Seto & Lalumière 2001). Information is obtained from all available sources about all child victims, including those reported by the offender but otherwise unknown to the police or other authorities.

Total SSPI scores range from 0 to 5 and are monotonically and positively related to pedophilic responding in the laboratory. Approximately 20% of sex offenders with a score of 0 (offenders with a single, related female victim over the age of 11) showed greater sexual arousal to children than to adults when assessed phallometrically, whereas almost 75% of sex offenders with a score of 5 (offenders with multiple child victims, at least one of them male, at least one of them 11 years old or younger, and at least one of them unrelated to him) showed this pattern of sexual arousal. Relatedness was defined as familiality at the level of first cousin or closer, and included stable step-, foster, or adoptive relationships.

A subsequent study replicated this finding in two samples of adult sex offenders; offenders with higher scores on the SSPI were more likely to show greater sexual arousal to children than to adults (Seto et al. 2004). Seto et al. also found that SSPI scores significantly predicted serious recidivism when these adult sex offenders were released to the community. Seto and colleagues (2003) found that the SSPI was associated with sexual arousal patterns among adolescent male sex offenders, although the relationship was weaker than that found among adult sex offenders.

Another relevant behavioral indicator is whether someone is known to have used child pornography. Riegel (2004) conducted an anonymous survey of self-identified pedophiles and found that the large majority had used child pornography. Conversely, Seto et al. (2006) studied a group of men known to have used child pornography; that is, a group of men who had been charged for possession of child pornography by police. Sixty-one of the 100 child pornography offenders showed greater penile responses to stimuli depicting children compared with adults when assessed in the laboratory; this was a greater proportion than found among a comparison group of offenders who had sexual contact with children. Our interpretation of this unexpected finding was that men tend to seek pornography that corresponds to their sexual interests, whereas some men have sexual contact with children even though their sexual preference is for adults. In other words, pornography use may be a clearer indicator of sexual interests than sexual contact. Buschman (2007) found that all of the 43 child pornography offenders he assessed admitted that they masturbated while viewing images of child pornography, and 84% admitted that they also masturbated to fantasies about having sex with children.

Lastly, Blanchard et al. (2001) showed that pedophilic men reported fewer adult sexual partners than nonpedophilic men, suggesting that an individual's entire history of sexual contacts, not just his history involving children, is relevant when considering diagnosis. Other factors that may be relevant include the person's adult romantic relationship history and

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Viewing time: an unobtrusive laboratory measure for assessing sexual interests, including sexual interests in prepubescent or pubescent children

social comfort with peers. Anecdotally, adult pedophiles have fewer romantic relationships with peers, and those relationships they do have tend to be less emotionally and sexually satisfying. Consistent with this idea, Lang and colleagues (1990) found that incest offenders reported less communication with their partner, felt more lonely, and were less satisfied with their partner than were members of a comparison group of nonoffending men. With regard to social functioning, Dreznick (2003) reviewed 14 studies (all involving adults except for one study that involved adolescents) and found that sex offenders scored significantly lower on both self-report and performance measures (e.g., role-play) of social skills than did offenders who had committed only nonsexual crimes.

A potential limitation of diagnosis on the basis of sexual history is that many sexual offenses are not detected by authorities; offenders may be unwilling to admit to undetected sexual offenses they have committed. In addition, a great deal of information about sexual history is typically obtained through self-report, by either interview or questionnaire, and thus recapitulates the problem of self-report.

Though likely to be incomplete, information from current or former sexual partners about the individual's sexual interests and activities can be a helpful collateral source of information. Also, because more and more pornography use involves digital text, images, or video, a forensic computer analysis of pornographic content can shed light on the computer user's sexual interests. Someone who possesses child pornography is more likely to be pedophilic than is someone who does not possess child pornography. More research is needed, however, to determine if other parameters of child pornography content are informative, including total amounts of pornography, proportion of child to adult images, and the predominant ages and genders of the depicted children. We have hypothesized that child pornography offenders with more child pornography images, a higher ratio of child to adult images, and images depicting younger children and both boys and girls are more likely to be pedophilic and thus are more likely to seek sexual contacts with children.

Viewing Time

Unobtrusively recorded viewing time is correlated with self-reported sexual interests and phallometrically measured sexual arousal to children in samples of nonoffending male volunteers recruited from the community (e.g., Quinsey et al. 1996). In the assessment of pedophilia, the viewing-time procedure typically requires showing a series of pictures depicting girls, boys, women, or men, either clothed or unclothed. Participants might also be asked to answer questions about each picture, such as how attractive or interesting the depicted person is. Participants are instructed to proceed to the next picture at their own pace and should be unaware that the key dependent measure is the amount of time they spend looking at each picture.

A number of studies have shown that adult male sex offenders with child victims can be distinguished from other men by the amount of time they spend looking at pictures of children relative to pictures of adults (Harris et al. 1996) or by a combination of viewing time and self-reported sexual interests, sexual arousal, and behavior (Abel et al. 2001). No published studies have yet demonstrated that scores on viewing time measures, whether alone or in combination with self-reports, predict recidivism among sex offenders, and it is unclear what impact there is on validity if a participant is aware that his or her viewing time is being recorded.

Phallometry

Phallometry involves the measurement of penile responses to stimuli that systematically vary on the dimensions of interest, such as the age and sex of persons in a series of pictures depicting female children, adolescents, and adults, and male children, adolescents, and adults. Phallometry was developed as an assessment method by Kurt Freund, who first showed that it could reliably discriminate between

homosexual and heterosexual men (Freund 1963) and then showed it could distinguish between sex offenders against children and other men, including sex offenders with adult victims, nonsexual offenders, and nonoffenders (Freund 1967). The most commonly used phallometric procedures measure changes in penile circumference.

Phallometric responses correlate positively and significantly with self-report and viewing time among nonoffenders (Harris et al. 1996) and with a measure of sexual interest based on a combination of viewing time and self-report among sex offenders (Letourneau 2002). Several decades of research has consistently demonstrated that phallometric indices of responding to child stimuli distinguish sex offenders with child victims from other men, and distinguish men who admit to a sexual interest in prepubescent children from men who report preferences for other ages (Blanchard et al. 2001). Most importantly, meta-analytic reviews reveal that phallometric responding to child stimuli is a strong predictor of sexual recidivism among sex offenders, thus providing important information for the purpose of sex offender risk assessment (Hanson & Morton-Bourgon 2005).

In assessing pedophilia, phallometric data are optimally reported as the penile response to depictions of prepubescent children relative to penile response to pictures of adults; thus, larger scores indicate relatively greater sexual arousal to children. Relative responses are more informative than are absolute penile responses (such as mm of change in penile circumference to child stimuli) because they represent relative preferences. Validity is also improved by methods that take individual differences in responsivity into account (Harris et al. 1992). Individual responsivity can vary for a variety of reasons, including the man's age, health, and the amount of time that has elapsed since he last ejaculated.

Like all assessment methods, phallometry has its limitations. It can be vulnerable to attempts to suppress sexual arousal, though there are counter-measures to detect such attempts (Freund et al. 1988, Quinsey & Chaplin 1988). Some men produce only small penile responses in the laboratory, which are considered by many clinicians to be difficult to interpret, even though low responses do not affect the discriminative validity of phallometric testing (Harris et al. 1992). Laboratories vary greatly in their procedures and stimulus sets, although only a small number of procedures and stimulus sets have been properly validated. Fortunately, there is empirical work to guide how phallometric assessments should be conducted. Lalumière & Harris (1998) summarize the evidence about the numbers and kinds of sexual stimuli to use, optimal transformations of data for interpretation, and stimulus presentation.

Phallometric testing: a psychophysiological measure of male sexual arousal that is used to assess sexual preferences, including pedophilia and hebephilia

Disagreement Between Assessment Methods

Kingston and colleagues (2007) found that psychiatric diagnoses of pedophilia, phallometrically assessed arousal to children, and scores on the SSPI were not significantly related to each other. Possible explanations for this lack of agreement across methods are poor reliability of the psychiatric diagnosis or scoring of the SSPI; the fact that cases spanned the years from 1982 to 1992 and thus involved two versions of the DSM scheme; and the use of dichotomized rather than continuous variables in the statistical analyses, which reduced statistical power. Nonetheless, this study raises the concern that different assessment methods identify modestly overlapping groups of individuals as pedophiles, making synthesis of different studies and comparisons of clinical diagnoses challenging.

In an unpublished multiple regression analysis of the data reported by Seto et al. (2006), we found that self-report, sexual offense history, and a charge for child pornography possession all independently contributed to the prediction of phallometrically assessed sexual arousal to children, again suggesting that each source of information contributes something unique to the assessment of pedophilia and that relying on one source would identify different, though overlapping, groups of individuals.

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RISK ASSESSMENT

The accurate assessment and diagnosis of pedophilia is important because variables associated with pedophilia are important risk factors in the prediction of recidivism among sex offenders (Hanson & Morton-Bourgon 2005). Quantitative reviews have shown that self-reported interest in children, sexual victim characteristics such as having a boy victim or having an unrelated victim, and phallometrically assessed sexual arousal to children are among the strongest predictors of future sexual offenses. In other words, pedophilic sex offenders are more likely to sexually reoffend than are nonpedophilic sex offenders.

It is not known, however, what risk is posed by pedophiles with no known history of sexual contacts with children. As mentioned above, studies of self-identified pedophiles are rare, and none have followed a sample of self-identified pedophiles over time to see how many offend sexually. Some surveys have examined the proportion of pedophiles who have had sexual contact with a child in the past (e.g., Bernard 1985), but this does not directly address the question of who will sexually offend in the future.

Seto & Eke (2005) followed a sample of child pornography offenders for an average of 2.5 years. The majority of these offenders would likely be diagnosed as pedophiles (Seto et al. 2006). A small proportion (4%) committed a contact sexual offense during this time period. This suggests that having a sexual interest in children is not a sufficient factor to explain sexual offending against children. In Seto & Eke's (2005) study, child pornography offenders with any kind of prior criminal history were more likely to commit a contact sexual offense, or an offense of any kind, during the follow-up period. This finding suggests that it is the pedophiles who are more likely to engage in antisocial or criminal behavior of any kind—which would include individuals who are impulsive, callous, and willing to take risks; individuals who become disinhibited as a result of substance misuse; and individuals who endorse antisocial attitudes and beliefs such as a disregard for social norms or the laws—who pose the greatest risk of acting upon their sexual interest in children (Seto 2008). In contrast, one would predict that pedophiles who are reflective, sensitive to the feelings of others, averse to risk, abstain from alcohol or drug use, and endorse attitudes and beliefs supportive of norms and the laws would be unlikely to commit contact sexual offenses against children. Several follow-up studies suggest that there is an interaction of pedophilia and criminal propensity, such that antisocial pedophiles are the most likely to sexually offend again (e.g., Harris et al. 2003, Seto et al. 2004).

INTERVENTION

Across the following interventions, the underlying assumption is that pedophilia is a stable sexual preference that is unlikely to change, just as there is little, if any, evidence that heterosexual or homosexual orientation can be changed. Recent etiological research on neurodevelopmental correlates of pedophilia—including cognitive functioning, non-right-handedness, and structural volume differences—suggests that pedophilia is influenced by prenatal factors and thus is unlikely to respond to interventions delivered when the individual is an adult (e.g., Cantor et al. 2008). Instead, the goals of treatment are to reduce pedophilic sexual arousal or increase the person's ability to manage sexual urges and arousal and refrain from acting upon sexual interest in children.

Behavioral Treatments

Behavioral techniques aim to teach pedophilic individuals how to control their sexual arousal. For example, aversive conditioning techniques are used to teach suppression of sexual arousal to children by repeatedly pairing noxious stimuli such as an unpleasant smell (ammonia) with sexual stimuli depicting children. Recent reviews of the history of behavioral treatment for pedophilia are provided in Laws & Marshall (2003) and Marshall & Laws (2003). These

reviews suggest that behavioral techniques have an effect on sexual arousal patterns by increasing voluntary control of sexual arousal to children (e.g., Lalumière & Earls 1992). There is less evidence that sexual arousal to adults can be increased through positive reinforcement, however.

It is not clear how long changes in sexual arousal patterns can be maintained, and it is also unclear if booster sessions can help maintain changes. This issue has not been studied among pedophilic men, but there are some relevant studies of attempts to use behavioral conditioning to alter sexual arousal patterns in other populations. For example, Tanner (1975) compared gay men assigned to booster or no-booster conditions (men in the booster condition received an additional five sessions in the subsequent year) after 20 sessions of aversive conditioning of their sexual response to stimuli depicting males and found no significant difference in one-year change scores in subjective or penile response after one year. On the other hand, Maletzky (1977) used a modified A-B-A design and found that, as a group, exhibitionists showed a decrease in exposing behavior with aversive conditioning, a partial return after one year without treatment, and then a return to post-treatment levels after booster sessions. The author noted that the partial return was true only for 4 of the 12 exhibitionists, suggesting the others were able to maintain behavioral changes without booster sessions.

Cognitive-Behavioral Treatments

Cognitive-behavioral treatments target attitudes, beliefs, and behaviors that are believed to increase the likelihood of acting upon one's sexual interest in children. Cognitive-behavioral treatments can vary widely in their content, depending on which factors the therapists believe are the most important to address. The common theme is that cognitive-behavioral techniques are used to teach the individual how to recognize risky situations and how to effectively respond to these situations.

The most popular form of cognitive-behavioral therapy currently used with sex offenders is the relapse prevention approach, originally adapted from the addictions field (McGrath et al. 2003). The relapse prevention approach involves (*a*) identifying situations in which the individual is at high risk for reoffending; (*b*) identifying lapses, that is, behaviors that do not constitute full-fledged relapses but that may be a precursor to a relapse (e.g., masturbating to sexual fantasies about sex with a child); (*c*) developing strategies for avoiding high-risk situations such as spending time alone with a child; (*d*) developing coping strategies that can be used in high-risk situations that cannot be avoided; and (*e*) responding effectively to lapses that do occur.

Relapse prevention: a cognitive-behavioral approach for developing self-management skills in sex offenders

Marques and her colleagues reported the results of the only randomized clinical trial that evaluated the impact of a cognitive-behavioral program incorporating relapse prevention principles on the recidivism of sex offenders against adults or against children (Marques et al. 2005). The final evaluation, completed after an average of eight years of follow-up, found no significant differences overall in the recidivism of treated sex offenders, volunteer controls (offenders who volunteered but who were randomly assigned to the control condition), and nonvolunteer controls who had refused treatment when it was offered to them. There was a nonsignificant trend for those who sexually offended against children to be more likely to reoffend after treatment (21.9% for treated offenders and 17.2% for volunteer controls); the opposite trend was found for sex offenders with adult victims.

Reporting on outcomes other than recidivism, Anderson-Varney (1992) randomly assigned 60 sex offenders against children to cognitive-behavioral therapy or no-treatment conditions; the outcome measures were sexual attitudes, knowledge, and self-reported behavior, social avoidance, and empathy. There was no difference between the treated and control groups. The Cochrane Collaboration meta-analytic review authored by Kenworthy et al. (2004) reviewed nine random assignment

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Antiandrogens: a class of hormonal agents that reduce endogenous testosterone activity in men and thereby reduce sex drive

studies and concluded that there was no evidence of a significant impact of treatment on the identified proximal targets, excluding reoffending. Marques et al. (2005) did find an impact of a relapse prevention program on the proximal treatment targets but did not find an impact on recidivism, suggesting that other treatment targets are more critical to the ultimate outcomes.

More methodologically rigorous treatment outcome evaluations are needed because there is a great deal of vociferous debate in the sex offender treatment field about how to interpret nonrandomized studies. Hanson et al. (2002) and Lösel & Schmucker (2005) included such studies in their meta-analytic reviews, and as a consequence concluded that sex offender treatment significantly reduced recidivism. However, in both meta-analyses, studies involving random assignment or matching of treated and comparison groups on known risk factors revealed no difference.

Rice & Harris (2003) have pointed out the problems with nonrandomized designs that exclude treatment refusers or dropouts from the treated group but are unable to exclude offenders in the comparison group who would have refused or dropped out if treatment had been offered to them. The problem is that, among sex offenders, refusing or dropping out of treatment is associated with greater risk of recidivism (Hanson & Morton-Bourgon 2004, 2005). Thus, these nonrandomized designs create an a priori bias whereby the treated group is less likely to offend than the comparison group. Matching the two groups on risk factors reduces this bias but does not necessarily eliminate it. Seto et al. (2008) have discussed in more detail the ethical and scientific rationales for conducting more randomized evaluations of sex offender treatment; for a different view, see Marshall & Marshall (2007, 2008).

The results of randomized evaluations such as those reported by Marques et al. (2005) and Anderson-Varney (1992) do not support the use of cognitive-behavioral treatments as they have been delivered so far to sex offenders. It is unknown what impact cognitive-behavioral treatments have on pedophiles who have not sexually offended against children, as no evaluations have been published. It will be very interesting to see the evaluation results of programs such as the Berlin Prevention Project Dunkelfeld, which used an extensive mass media campaign to recruit self-identified pedophiles and hebephiles living in the community who were interested in participating in treatment to teach them skills to refrain from acting upon their sexual interests. Only men who were not facing legal charges for child pornography or contact sexual offenses were eligible for the program; approximately half of the men reported that they had never had sexual contact with a child.

Drug Treatments

Medical interventions are similar to behavioral treatments in focusing on reducing sexual arousal to children and thereby attempting to reduce sexual behavior involving children. Medical interventions attempt to do this by targeting the hormones or neurotransmitters underlying sexual drive, arousal, and behavior.

There is some support for the efficacy of antiandrogens in reducing the frequency or intensity of sexual drive, but there have not been many larger, better-controlled evaluation studies. Gijs & Gooren (1996) reviewed the literature evaluating the effects of cyproterone acetate (trade name Androcur), which blocks testosterone uptake, and medroxyprogesterone acetate (trade name Provera), which reduces gonadotropin release. Gijs & Gooren (1996) focused on methodologically stronger studies that included a double-blind procedure, a placebo condition, and random assignment of participants and identified four controlled studies of cyproterone acetate and six controlled studies of medroxyprogesterone acetate. All four studies of cyproterone acetate reported that treated men had a significant reduction in sexual response, whereas only one of the six medroxyprogesterone acetate studies showed an effect.

Other investigators have examined the effects of other drugs, including gonadotropin-releasing hormone agonists such as leuprolide

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acetate (trade name Lupron) that inhibit the production of testosterone by overriding pituitary regulation, and selective serotonergic agents that reduce sex drive. The research regarding these drugs is methodologically weak, consisting mostly of open trials or case studies. For example, Greenberg and colleagues (1996) reported on a retrospective analysis of 58 paraphilic men (74% of them were pedophiles) treated with selective serotonin reuptake inhibitors. They excluded men who had previously been treated or who dropped out of treatment; as previously mentioned, excluding dropouts can create a selection bias that makes treatment look more positive than it really is. The remaining men reported a significant decrease in paraphilic fantasies over the three-month follow-up.

Taken together, the outcome research suggests that antiandrogen treatment using cyproterone acetate does have the desired impact on sexual response, but the results are less clear for other drugs. An important issue in drug treatment is noncompliance, as some participants will discontinue the medication, especially if there is no legal pressure to continue (Hucker et al. 1988). Also, all of the drugs mentioned in this section can have problematic side effects, including weight gain, breast development, osteoporosis, and liver damage.

Surgical Castration

Surgical castration has the same rationale as the use of antiandrogens to reduce sexual response. Removal of the testes almost completely eliminates endogenous production of androgens (the adrenal glands produce a small amount) and thus can lead to the same sex-drive-reducing effects as antiandrogens, but in a more permanent form.

Though controversial, surgical castration has been performed on hundreds of convicted sex offenders in the Netherlands and in Germany, and it continues to take place in other European countries and in the United States. Since 1996, nine American states have passed laws that require some sex offenders against children who want to be paroled to undergo antiandrogen treatment or surgical castration (Scott & Holmberg 2003).

Wille & Beier (1989) reviewed cases of men who had undergone castration from 1970 to 1980 and concluded that castration was effective because 3% of the 99 men in the castrated group (70% were pedophiles) reported they had reoffended within an average of 11 years of follow-up, compared with 46% of a comparison group of 35 men who initially applied for castration during the same period but did not have the surgery because their applications were rejected by a selection committee or because they changed their minds. Because there was no random assignment to conditions, there may have been important differences in risk between those who were sufficiently motivated to be castrated and those who were not willing to undergo the surgery.

SUMMARY AND CONCLUSIONS

Diagnosis and Assessment

Pedophilia is a diagnosis that applies to individuals who are sexually interested in prepubescent children. It does not require sexual behavior involving children: Individuals who report recurrent sexual thoughts, fantasies, or urges about sex with children, or who exhibit greater sexual arousal to children than to adults, could meet the diagnostic criteria without ever acting upon their sexual interest. At the same time, it is possible for someone to have engaged in sexual behavior with a child, or to report having had a sexual thought, fantasy, urge, or arousal regarding a child, without qualifying for the DSM-IV-TR diagnosis (which requires the sexual interest to be recurrent and intense).

Because assessment methods do not agree in who is identified as a pedophile, assessors should specify which methods they used in arriving at the diagnosis of pedophilia. The label should be applied conservatively because of the social stigma associated with the diagnosis of pedophilia. Research is needed on how to

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optimally combine information obtained through different assessment methods.

In the meantime, one could argue that the most valuable assessment method is phallometric testing. It has consistently discriminated pedophilic men from nonpedophilic men, multiple studies have shown that it is a good predictor of sexual recidivism among identified sex offenders, and it is positively (though not strongly) correlated with sexual offense history, viewing time, and self-report. Because it is likely that pedophiles will attempt to present themselves as sexually aroused more by adults than by children during assessment, whereas it is highly unlikely that a nonpedophile would attempt to present themselves as more sexually aroused by children than by adults, phallometric results are interpreted asymmetrically: Someone who exhibits a pedophilic sexual arousal pattern is likely to be a pedophile, but someone who shows a preference for adults when assessed phallometrically is either not a pedophile or has successfully manipulated his responses during testing. If phallometric data are unavailable, either because the individual refuses phallometric testing or a laboratory is too far away or too expensive, then the SSPI is useful for individuals with a known sexual offense history because it is associated with phallometric responding and predicts recidivism among identified sex offenders.

Intervention

In my opinion, the effectiveness of psychological treatments to reduce sex offender recidivism has not been scientifically demonstrated. There is support for the use of aversive conditioning techniques in decreasing sexual arousal to children, but the long-term maintenance of such changes is unknown. Offenders can learn to voluntarily control their sexual arousal, but the underlying sexual preference for prepubescent children may remain unchanged. Nonetheless, learning to control their sexual arousal to children may help motivated individuals to refrain from sexually offending.

Despite the intuitive appeal of antiandrogen treatment or surgical castration to reduce sexual drive—and thus to reduce the likelihood of sexual contacts with children by pedophilic sex offenders—the empirical support for the efficacy of such interventions in reducing sexual recidivism is not strong. Compliance can be a major problem in antiandrogen treatment, with high refusal and noncompliance rates. Some men who undergo surgical castration retain the ability to have erections and engage in intercourse, and many sexual offenses do not involve the penis; the majority of sexual offenses against children involve fondling, masturbation of the child, or oral sex performed on the child. Sex drive reduction might not affect men who are romantically attracted to children and who fulfill their relationship needs by engaging in ongoing contacts with children.

Cognitive-behavioral techniques to teach self-regulation skills have not been shown to be effective. The impact of psychological treatments is likely to depend on the motivation of individuals to refrain from acting upon their sexual interest in children. Thus, a motivational enhancement component may be an important adjunct for pedophilic individuals who are not sufficiently motivated. There is some research to suggest that motivational enhancement efforts can increase treatment retention and participation (Miller & Rollnick 2002).

Primary and Secondary Prevention

If pedophilia cannot be cured using available treatments, investing in efforts to prevent pedophilia or to prevent sexual offenses against children by pedophilic individuals seems warranted. Primary prevention requires an understanding of the etiology of pedophilia; the research on this important topic is still in its early stages. Several lines of evidence point to a role of neurodevelopmental problems that affect sexual development, as indicated by a higher incidence of non-right-handedness, head injuries before the age of 13, lower intelligence and memory functioning, and differences in

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brain structure volume (e.g., Cantor et al. 2008). There is also evidence from two meta-analyses to suggest that pedophilic sex offenders are more likely to have experienced sexual abuse in childhood (Jespersen et al. 2009; M.C. Seto & M.L. Lalumière, manuscript submitted). The causes of these neurodevelopmental perturbations have not been identified, but the finding does suggest that better prenatal and maternal care could, among the many other benefits it provides, decrease the incidence of pedophilia.

Primary prevention efforts can also focus on children and their parents in the form of school-based sexual abuse prevention programs that teach all children about the difference between acceptable and unacceptable touching and how to disclose to a trusted adult if sexual touching occurs. Rispens and colleagues (1997) conducted a meta-analytic review and concluded that school-based programs increase knowledge about sexual abuse and protection strategies, both at post-test and upon follow-up. Gibson & Leitenberg (2000) found that young women who participated in a school-based sexual abuse prevention program were less likely to report experiencing sexual abuse. Though participants and nonparticipants were not randomly assigned to program versus control conditions, the prevention programs were implemented on a school-wide basis, and there is no a priori reason to believe that children at some schools differed in risk of sexual abuse from children at other schools.

Secondary prevention programs focus on at-risk individuals, which could include persons who are likely to develop pedophilia or pedophiles who have not yet had sexual contact with children. One example of a secondary prevention effort is the education campaigns conducted by STOP IT NOW!, an American nonprofit organization that uses social marketing strategies to reach individuals who are at risk of committing sexual offenses against children and convince them to seek treatment, and to encourage nonoffending adults to intervene if they suspect child sexual abuse may be occurring or might occur. Another innovative example of secondary prevention is the Berlin Prevention Project Dunkelfeld, which attempts to recruit pedophilic men, approximately half of whom had committed sexual offenses against children unknown to the authorities, to participate in treatment designed to help them refrain from engaging in sexual behavior involving children. The Berlin project involved a one-year cognitive-behavioral program and sex-drive-reducing medication for some treatment clients, and it is currently undergoing an initial evaluation (Beier et al. 2006).

Both primary and secondary prevention programs might benefit from research on the tactics used by men to initiate sexual contact with children; secondary prevention programs could also benefit from research on the factors that make some children more vulnerable than others. Because of the potential consequences for pedophiles who act upon their sexual attractions by seeking sexual contact with children and concerns about the impact of such contacts on the children involved, methodologically rigorous evaluations of interventions, including primary and secondary prevention efforts, are needed.

SUMMARY POINTS

1. Pedophilia is not synonymous with sexual offending against children.
2. Pedophilia can be diagnosed in the absence of sexual behavior involving children.
3. Diagnostic methods identify overlapping but different groups of individuals as pedophiles.
4. Pedophilia is an important risk factor for recidivism in the assessment of sex offenders.

5. There is no evidence that pedophilia can be changed; interventions are intended to reduce sexual response to children or to increase self-management skills.

DISCLOSURE STATEMENT

The author is not aware of any biases that might be perceived as affecting the objectivity of this review.

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