Commentary: Sildenafil in Phallometric Testing—An Evidence-Based Assessment of Sexual Offenders

John M. W. Bradford, MB, ChB, DPM, Drew Kingston, PhD, A. G. Ahmed, MB, BS, LLM, MSc, MRCPsy, and J. Paul Fedoroff, MD

The field of medicine has moved toward best practices based on evidence. There is pressure on all medical disciplines, including forensic psychiatry, to adopt this approach. Some areas of forensic psychiatry have a stronger scientific basis that clearly fits the definition of evidence-based medicine than do other areas. One of these areas is the assessment and treatment of sexual offenders, which has a strong scientific basis and meets the definition of evidence-based medicine, as defined by Sackett et al. in 2007. Phallometric testing is an objective, physiological indicator of deviant sexual preferences that support the diagnosis of paraphilias and the assessment of sexual offenders. The current article by Kolla et al. is an effort to improve the reliability of phallometric testing related to diagnosis by pharmacologic stimulation.

Sex is a basic biological drive. Animal and human sexual research has provided considerable information about the neurobiological and neurohormonal basis of sexual drive, arousal, and performance. As well, there are evidence-based studies on the neuropharmacology of sexual behavior, summarized in a recent review by Bradford and a recent chapter on the neurobiology of the paraphilias. In 2010, the World Federation of Societies of Biological Psychiatry published guidelines for the biological treatment of the paraphilias that clearly documented evidence-based pharmacologic treatment of these conditions.

All major explanations of sexual offending suggest that the paraphilias contribute significantly to sexual aggression. The current diagnostic criteria for the paraphilias are based on Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR). Several criticisms have been directed toward the use of nosologic criteria related to the paraphilias, specifically as they are used in high-profile legal proceedings. Problems associated with subjective judgment in making reliable and valid diagnosis suggest that objective measures might resolve this problem.

The study of sexual offenders within an evidence-based paradigm includes the assessment of individuals in an attempt to diagnose the type of their paraphilia, their risk of sexual offense recidivism, whether the risk of future sexual violence can be moderated by treatment, what treatments are available, and their impact on recidivism. All of these areas have been the subjects of considerable research and fit the definition of evidence-based medicine.

The broadest and most generic phrase used in forensic psychiatric practice to classify sexual violence would be “any sexual behavior against a nonconsenting partner” (Ref. 14, p 527). Sexual offenders are a heterogeneous group of individuals, most of whom have a sexual deviation or a paraphilia, in DSM-
IV-TR terms. There is considerable comorbidity between the paraphilias, with a crossover in any given individual between hands-on and hands-off paraphilias. The phenomenon of comorbidity in the paraphilias emphasizes the need for a careful diagnostic evaluation, based on the pathognomonic feature of all paraphilias or sexual deviations, which is deviant sexual arousal. This evaluation then forms the basis for the objective measure of sexual arousal, which in turn enables an objective diagnosis of the paraphilia or sexual deviation.

The objective measurement of sexual arousal is made possible by the measurement of penile tumescence in a laboratory setting. Although there is not yet a completely standardized approach to the evaluation of sexual offenders, in specialized centers a typical approach is a forensic psychiatric diagnostic and evaluative clinical examination with a detailed psychiatric history, a mental status examination to diagnose associated psychiatric conditions, and an examination for general medical conditions. The specific assessment for deviant sexual behavior consists of a sex hormone profile, a variety of sexual behavior questionnaires, and objective measures of sexual interest by penile tumescence testing or visual reaction time. The sex hormone profile consists of free and total testosterone (freeT and totalT), follicle-stimulating hormone (FSH), luteinizing hormone (LH), estradiol, prolactin, and progesterone. The sex hormone profile is important in forming the basis of the diagnosis of conditions affecting sexual endocrinology that may be associated with paraphilias, such as Klinefelter’s syndrome. It also provides a baseline for subsequent pharmacologic intervention. The sexual behavior questionnaires are usually self-reported information measuring overall sexual performance, drug and alcohol usage, sexual drive measures, general measures of impulsivity, measures of aggression, quantitative and qualitative measures of sexual fantasy, a detailed sexual behavior inventory, some measure of deception, and measurement of cognitive distortions. Physiological measures of sexual preference (phallometry) complete the overall comprehensive assessment.

Sexual offense recidivism risk is calculated through a risk-assessment instrument, such as the Static 99, and psychopathy is often measured with the Hare Psychopathy Checklist. The importance of sexual arousal testing is emphasized by a finding of deviant sexual preference, which is considered to be among the strongest predictors of sexual offense recidivism.

**Physiological Measures of Sexual Arousal**

Phallometric testing (penile plethysmography; PPG) is an objective, physiological indicator of deviant sexual behavior that provides reliable evidence of sexual preference in the absence of an accurate diagnosis. Several studies have shown that PPG results are associated with sexual and violent recidivism. Further, PPG assessment of deviant sexual preference helps to corroborate or challenge self-report data. Despite the obvious advantages of an objective physiological measure of sexual deviance, the utility and overall psychometric properties of this tool have been questioned. One such criticism has been the extent to which the tool can detect sexual preference in the absence of an adequate erectile response. Approximately 10 percent of males undergoing PPG testing exhibit insignificant erectile responses to audio, visual, and video depictions of gender and age categories of stimuli. A low erectile response correlates with age and may be the result of a variety of factors, including vascular, neurological, and psychogenic factors. Some investigators have found that inclusion of low responders did not affect the sensitivity of the assessment, but others have found that including participants with low response profiles can significantly distort the data, particularly when utilizing z-score transformations. More recent data have shown poor discriminate classification of deviant and nondeviant sexual preference when the overall output index is low.

Kolla et al. have completed a pilot study examining the effect of prescribing 50 mg sildenafil to mitigate the problem of low responses in phallometric studies. Sildenafil is a pharmacologic agent that increases the blood flow in small vessels and therefore enhances penile tumescence. In this study, sildenafil was used in a nonforensic population to evaluate its effect on penile tumescence and phallometric responses. The results indicated that the pretest administration of sildenafil increased peak penile response to audiotape narratives and slides of nude models representing different age categories by 28 percent, when compared with testing without the administration of the pharmacological agent. In a follow-up investigation, Kolla et al. completed a double-blind, placebo-controlled trial that examined the effect of a higher dose of 100 mg sildenafil on penile...
tumescence and phallometric responding in a larger nonforensic sample (n = 22). Sildenafil produced a 50 percent increase in responding relative to the untreated condition (versus a 28 percent response in the pilot study) thereby confirming a dose-dependent relationship between sildenafil and penile tumescence and rigidity reported in other studies.31,32

The results were also separately examined in individuals with either a consistent or inconsistent phallometric profile, based on an examination of the congruence between the physiological results and self-reported sexual preference. Significantly, the results showed that participants responded with similar relative magnitude responses to stimulus categories, both with and without the administration of sildenafil. The findings can be interpreted as showing that the administration of sildenafil did not distort the classification of the individuals into the subcategories of pedophile, hebephile, or no deviant preference. This result is important, as one potential concern related to the use of sildenafil to enhance penile tumescence is that it might increase the rate of false positive responses. Finally, the results revealed that peak responding increased significantly under the drug administration state for consistent responders to adult women, suggesting that the administration of sildenafil as a pretest agent to enhance penile tumescence may be best suited for men who prefer adults but are prone to low response.

The study supports the use of sildenafil as a pretreatment enhancement for phallometric testing to overcome the problem of low responders. This study shows that men who have a sexual preference for adult females (heterosexual and teleiophilic) are likely to benefit the most from pretest enhancement with sildenafil. The data also show that individuals with something to conceal (pedophiles) may be more likely to attempt to resist testing on sildenafil. This theory could be further explored in studies on faking responses during phallometric testing.

Kolla et al.28 are among the first to test sexual preference scientifically in a pharmacologic enhancement paradigm. In the current study, they examined nonforensic participants. Whether pharmacologic enhancement is ethically permissible or clinically justified in outpatient sex offenders remains to be determined.

In conclusion, this study expands the field of phallometric testing in the diagnosis of the paraphilias and in the overall evaluation of sexual offenders.

References


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