

Sexual Interest: A discussion of the clinical utility of penile plethysmography and visual reaction time

By Karl M. Williams, Ph.D., DABFE, DABFM



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Abstract

For many years penile plethysmography (PPG) has been the technique of choice in the evaluation of sexual interest. Within the past few years another method of assessing sexual interest, the Abel Assessment for Sexual Interest™ (AASI) has experienced increasingly widespread clinical recognition and use. The AASI utilizes visual reaction time as the dependent variable, whereas the PPG measures relative levels of penile tumescence. In the present article a brief discussion of the two assessment techniques is provided, with a focus upon their clinical utility. It is noted that although both the AASI and the PPG have been the subject of scientific analysis and criticism, the AASI apparently represents a clinically useful alternative to the PPG.

Assessment, sexual interest, sexual preference

The objective assessment of sexual preference is of particular interest to clinicians who are involved in the evaluation and treatment of sexual offenders. In past decades efforts to undertake such objective assessment typically have utilized penile plethysmography (PPG). However, in recent years the Abel Assessment for Sexual Interest™ (AASI) has enjoyed relatively widespread use and acceptance. In the present article, a brief description of the comparative clinical utility of the PPG and the AASI will be provided. This information is intended to furnish the reader with some understanding of the applicability, utility and validity of the two objective measures. Although neither the PPG nor the AASI currently represents a perfect measure of sexual interest, in the clinical arena the effective assessment and treatment of sexual offenders typically calls for something more objective than offender self-report and clinical inference. The information furnished by the PPG and the AASI can enable the clinician to provide significantly more informed statements about offense etiology and recidivistic risk.

PENILE PLETHYSMOGRAPHY

Penile plethysmography (PPG) has been employed clinically for close to 50 years. The PPG procedure utilizes a strain gauge, a transducer and associated converting, amplifying and recording apparatus to appraise changes in penile circumference and thus in penile tumescence. Circumference measures are taken while the client is exposed to various forms of sexually explicit auditory or visual stimuli. Following the calibration of the recording equipment, a baseline measurement of penile tumescence is taken. Subsequent measurements of penile circumference then are made as the client views or listens to sexually evocative material. The hypothesis underlying the PPG application is that penile tumescence is correlated positively with, and is a consequence of, sexual arousal. As such, by analyzing relative levels of penile tumescence during exposure to arousal stimuli, recorded data predict the propensity of sexual inhibition or attraction to those stimuli.

Considerable research has been devoted to the investigation of the validity and reliability of penile plethysmography. Briefly, proponents of PPG have touted its efficacy (e.g. Avery-Clark & Laws, 1984; Quinsey & Laws, 1990), whereas opponents have criticized the psychometric properties of plethysmography (e.g. Hall, Proctor & Nelson, 1988). Still other researchers have investigated various aspects of PPG methodology and utility, including – with mixed and often limited success – its capacity to distinguish certain subcategories of offenders such as pedophiles and rapists (e.g. Quinsey & Chaplin, 1984). For a variety of reasons, including research design and methodology, the results of PPG research have been contradictory.

Criticisms of penile plethysmography have been leveled along practical, ethical and psychometric lines. On a practical level, the intrusive, lengthy and rather unpleasant characteristics of the PPG have been noted, as have concerns that it increases the potential for the communication of sexually transmitted diseases. Ethical criticisms have focused primarily on the fact that the PPG procedure utilizes graphic sexual stimuli such as child pornography – the possession of which can be illegal as well as morally questionable; for example, the use of such stimuli with adolescent clients is particularly dubious.

Also presenting serious challenges to the usefulness of the PPG are clients who fail to exhibit significant erection responses to any of the stimuli ('flatliners') or, less frequently, those who are overly responsive to the stimulus material. It also is quite conceivable that the PPG responses of clients who are on medication (e.g. antiandrogens and antipsychotics) will differ from those who are not on such medication. In such instances, an interpretation of responses and relative sexual interest can be difficult, if not impossible. In addition, some individuals who are required to undergo PPG evaluation can dissimulate by controlling their responses to the test stimuli (Lalumière & Quinsey, 1994). In such a case, for example, the subject might seek to minimize his responsiveness to deviant stimuli and to maximize his responsiveness to appropriate stimuli. Deliberate faking, therefore, represents another potential limitation of the PPG procedure. Based on their appraisal of the extant PPG literature, Konopasky and Konopasky (2000) opined that variables such as the selection of PPG stimuli and faking by the client render the PPG relatively poor in predicting future criminal behavior.

Moreover, plethysmography has been criticized for having relatively modest levels of sensitivity (that is, the percentage of group members who are correctly identified as such) and specificity (that is, the percentage of non-members of a group who are correctly identified as such). Instrumentally recording limitations might preclude distinctions between clients who possess an abnormal sexual interest and those who do not possess a deviant sexual preference.

Notwithstanding such debate, a majority of those who employ the PPG do so with the implicit assumption that the technique possesses acceptable levels of reliability and validity for use with sex offenders. Its widespread usage certainly would appear to attest to its face validity and clinical applicability. Moreover, an asset of the PPG – and a potential advantage over alternative measures of sexual interest – is that it enables the assessor to obtain quantitative measures of penile tumescence. At least in theory such measurements can be utilized to undertake intra-subject comparisons across time; that is, for example, to quantify differences in the subject's erection response between baseline or pre-treatment and post-treatment.

ABEL ASSESSMENT

FOR SEXUAL INTEREST

By contrast, the Abel Assessment for Sexual Interest™ (AASI) can be administered in a rapid and uncomplicated fashion. In taking the AASI, the client views standardized visual stimuli in the form of slides that depict 22 categories of age, gender and deviant sexual behavior. The client views each series of slides twice, retaining control over the time that each slide remains on display. As one component of the AASI procedure, the client uses a dedicated computer to rate his or her subjective levels of arousal to the stimuli. The client is alone in the room while undergoing the procedure and has nothing attached to his or her body. The objective test protocol can be completed in less than 30 minutes. As the client views the various categories of slides, the computer covertly records the time that he or she spends viewing the stimuli. At the conclusion of testing, the data are transmitted by modem to Abel Screening, Inc. in Atlanta, where computerized scoring and preliminary analysis are undertaken. The results then are faxed back to the clinician.

Whereas plethysmography can be utilized with female clients only with substantial modification (as in the vaginal photoplethysmographic technique that was discussed by Hoon, Murphy, Laughter & Abel, 1984) the AASI is readily applicable without variation to both male and female subjects. Moreover, a comprehensive sex offender-specific questionnaire that is administered, together with the objective component of the AASI, furnishes detailed supplementary information. Besides being relatively easy to employ, potential advantages of the AASI over the PPG include the use of clothed (legal) models, who are depicted against a standardized background, and an absence of flatliners.

Also, in a majority of cases the client lacks a complete awareness as to what exactly is being measured by the AASI. This renders the procedure less vulnerable to deliberate efforts at dissimulation. Typically, the client believes that his or her numerical rating of the stimuli is the primary measurement, whereas, in reality, the primary dependent variable is visual

reaction time (VRT). The computer records VRT in microseconds while the client views a particular stimulus. Furthermore, the AASI allows for a comparison of the client's own numerical rating of the stimuli with his or her objectively recorded VRT to those same stimuli. This provides information concerning the client's level of insight and candor. At present, the developers of the AASI continue with their active research program, producing potentially useful refinements such as 'Probability Values', which provide information concerning the likelihood that the client's responses will match those of known molesters of girls and/or boys or of known molesters who deny being molesters.

Like its PPG counterpart, over the past half century visual reaction time has been the subject of extensive investigation (Rosenzweig, 1942). To date, the research on the AASI holds promising but mixed results. Initial investigations (e.g. Abel, 1998; Abel, Huffman, Warberg, & Holland, 1998) suggested that the AASI possessed relatively high levels of sensitivity and specificity comparable to those of penile plethysmography. Moreover, in a study that was conducted by Gray (1999), in which subjects were assessed with both the AASI and the PPG, the AASI was slightly superior in identifying known pedophiles.

However, more recently, some investigators (Fischer, 2000; Fischer & Smith, 1999; Smith & Fischer, 1999) have argued that in certain cases the AASI lacks sufficient statistical adequacy, reliability and validity. For example, discussion has centered on the appropriateness and limitations of the AASI's use of ipsative scores (that is, scores that express a client's sexual interest not in absolute terms, but in relation to the strength of the client's other sexual interests) – which make inter-client comparisons inappropriate. Although Abel (2000) provided a compelling rejoinder to the Fischer and Smith research, pending the outcome of ongoing research, it is fair to say that AASI statistical and scoring issues warrant more research. Another feature of the AASI scoring system is that although 22 categories of sexual stimuli are presented to the client, at present, only 18 of those categories can be interpreted formally. Currently, the AASI cannot provide definitive predictive data between visual reaction time and sexual disorders such as exhibitionism, voyeurism, frotteurism or fetishism.

With respect to dissimulation on the AASI, research that has been conducted to date by Abel and his associates (Judges Product Information, 1998) has suggested that even when the subject is aware that what is being measured is visual reaction time, and is instructed to try to falsify or distort his or her patterns of sexual interest, faking the AASI results is difficult. Nevertheless, the results of a study by Gray (1999) were noteworthy in that they indicated that although the AASI was highly accurate in identifying diagnosed pedophiles when the subjects followed the AASI test protocol, the AASI's ability to identify pedophiles dropped significantly among a small percentage of subjects who deviated from the test protocol by responding as rapidly as possible (reflexively) as the stimuli were presented. The latter group might have succeeded in dissimulating by generating false negative results, albeit in recognizable response patterns that took the form of a relatively consistent flattening of the results bar graph.

Notwithstanding any possible shortcomings, the AASI has passed the Daubert standard for admissibility in court (U.S. District Court, State of Louisiana, 2000; State of New Mexico, 2001). This indicates that, at least in some states, the AASI has been deemed to possess sufficient scientific credibility to be utilized as an objective measure in a forensic setting.

CASE EXAMPLE

To illustrate the relative utility of the PPG and the AASI, let us consider the hypothetical case of Mr. D., a 34 year-old Caucasian male who has offended sexually against two female children. Assessment questions pertained to whether Mr. D. was a pedophile or whether, for example, his offenses reflected regressive or substitutive anomalous sexual misconduct in a man whose sexual orientation was adult heterosexual.

At baseline (post-sentencing, pre-treatment) examination with the AASI, Mr. D. reported that he was sexually attracted only to adult females. However, visual reaction time objective results indicated that he had a significant sexual interest in grade school females as well as in adolescent and adult females. Confrontation with these data elicited Mr. D's admission that in fact he was sexually interested in pre-pubescent girls; this formed the basis of both clinical intervention and appropriate protective measures.

For its part, baseline PPG testing of Mr. D. revealed significant penile tumescence in response to grade school, adolescent and adult female stimuli. In addition, result analysis indicated that some penile tumescence was present in reaction to pictures of pre-school girls and boys. On the basis of an examination of Mr. D's relative patterns of penile responsiveness, it was concluded that under-aged children aroused him more than did adolescent and adult females. However, due to his tendency to respond to a variety of stimuli (in this case girls, boys, adolescent and adult females), it was unclear whether his sexual arousal to deviant stimuli was an artifact of his over-responsiveness or whether his response patterns represented an accurate depiction of his sexual preferences.

Mr. D. did not particularly want to receive treatment, especially because the court had ordered him to finance his own therapy. This provided him with an incentive to demonstrate clinical improvement as quickly as possible in the form of normalized patterns of sexual interest. Moreover, during the course of his treatment, Mr. D's wife divorced him and

expressed her opposition to his having any further involvement with their three pre-pubescent children. Inasmuch as Mr. D. wished to continue to have access to his children, this afforded him an additional incentive to demonstrate his sexual normalcy.

As such, Mr. D. started to make the assertion that his patterns of sexual interest had normalized and that he no longer needed to be in treatment or to be restricted in terms of his contact with children. In the interim, on the basis of his initial AASI test results and the information that he had derived from his contact with other clients who were in treatment, Mr. D. learned that the AASI measured visual reaction time and was not simply a record of his expressed sexual preferences. Equipped with this knowledge, on re-testing with the AASI six months into treatment, he attempted to falsify his results by spending relatively more time examining the photographs of adult females and devoting as little time as possible to looking at the pictures of children. Notwithstanding these efforts, the rank order of Mr. D's sexual interest patterns remained unchanged and at six months the AASI results continued to reflect his significant sexual interest in pre-pubescent females.

Meanwhile, in his attempts to appear normal while undergoing six-month re-examination with the PPG, Mr. D. became highly anxious and, as a result, he remained flaccid or physically unresponsive to all of the test stimuli. This generated flatline data that could not be interpreted, but that nonetheless were suggestive of dissimulation. On the basis of these data, sex offender therapy was continued, albeit with some lack of precision as to treatment focus.

At one-year re-testing with the AASI, Mr. D. modified the technique by which he sought to demonstrate his sexual normality by not even looking at any of the slides but by simply responding as quickly as he could (reflexively) to all of the test stimuli. By doing so, he generated a floor effect that produced an overall flattening or uniformity of the different sexual interest categories. Although the AASI results were rendered inconclusive as a result of this dissimulation strategy, they were highly suggestive of faking, which warranted further investigation within the context of ongoing therapy.

Meanwhile, during PPG re-testing at the one-year stage Mr. D's intense anxiety again resulted in him being unresponsive to any of the stimuli, producing additional flatline data. Although therapy was continued, it was done so on the premise that Mr. D. had a sexual interest in children of both sexes.

Summary

Fischer (2000) encapsulated the current status of the objective assessment of sexual interest when he opined that, although both the PPG and the AASI were imperfect measures of sexual interest, and might require further refinement, they represent the best mechanisms that currently are available to clinicians and researchers. Both assessment methods provide considerable information and utility, and at least in a majority of cases they offer the possibility of a superior evaluation over the traditional clinical interview. In the absence of plethysmographic or visual reaction time data, the clinician relies solely upon variables such as offense dynamics, collateral information, the history and statements of the offender or simply clinical judgment. In most cases, objective assessment of sexual interest can be an invaluable supplement to other facets of clinical investigation. Such data can be employed, for example, within the context of a comprehensive psychological/psychiatric evaluation. The data also can be utilized to assist in predicting an offender's risk of recidivistic sexual criminal acts. Further, objective measurements of sexual interest can be very useful in challenging denial and in tracking therapeutic progress.

On a practical level, the AASI is the more convenient of the two objective measures. It is relatively brief and non-aversive for both clinician and client, and it lends itself readily to the private practice domain. On the other hand, the PPG can be demanding for both clinician and client and its psychometric properties, although better established than those of the AASI, remain controversial. Given the fairly inexpensive, fast and user-friendly nature of the AASI protocol – and given its possession of relative merits that at least rival those of the PPG – the AASI assessment might enhance the ability of forensic clinicians to provide accurate and relevant sex offender evaluations.

About the Author:

Dr. Karl Williams is a clinical and forensic psychologist in independent practice in Vancouver, British Columbia, Canada. He also is a Clinical Associate at Simon Fraser University in Burnaby, BC. He serves frequently as a consultant to defense and prosecuting attorneys. Currently, Dr. Williams is retained as a consulting psychologist to various agencies of government, including the BC Ministry of Public Safety and Solicitor General and the Canadian Department of Justice. Upon numerous occasions he has provided expert testimony, and a large component of his practice pertains to the assessment and management of sexual offenders. Dr. Williams is a Diplomate of the American Board of Forensic Examiners and the American Board of Forensic Medicine. He also is a member of the American Psychological Association and the Canadian Psychological Association.

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