Validity and Ethics of Penile Circumference Measures of Sexual Arousal: A Critical Review

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Wheeler and Rubin (1987) advanced evidence that penile volume responses (PVRs) were no more sensitive than penile circumference responses (PCRs) in measuring erection which the authors incorrectly identified with sexual arousal. Knowledge of the literature would have led them to question that identification and the methodology of their study. PVRs have repeatedly been demonstrated to assess validly not erection but the sexual orientation of individuals, when derived from the early stage of erectile response to brief stimuli that were from their onset of moderate erotic strength. PCR assessment has been of the degree of erection to stimuli of 2–10 min duration. No success has been reported using PCR measures of erection to classify subjects individually as to their sexual orientation. Classification of groups of 30 but not 6 homosexuals was successful using their PCRs to nudes. Attempts to identify rapists and pedophiles from normals, and aggressive from nonaggressive rapists and pedophiles by PCRs have failed to be replicated. In comparing PVRs and PCRs, Wheeler and Rubin used as stimuli three 10-min presentations of a film which apparently did not immediately introduce erotic material. This procedure would not elicit meaningful PVRs. Though never validated as a measure of individuals' sexual arousal, PCR measures of erection are currently widely recommended for assessment and determining treatment of individual sex offenders. If these assessments could affect or are believed by the offenders to affect the outcome of the legal processes in which they are involved, the procedure is not only scientifically unsupported, it is unethical.

KEY WORDS: penile volume responses; penile strain gauge; sexual arousal; sexual orientation; assessment.

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INTRODUCTION

Wheeler and Rubin (1987) reported a comparison of penile volume and circumference measures of penile erection, which they incorrectly identified with sexual arousal. They concluded that the volumetric device was not more sensitive. The methodology of their study was inappropriate, revealing a lack of awareness of the type of stimuli traditionally employed to produce valid measures of sexual arousal using the volumetric measure. They made no reference to the numerous validation studies, knowledge of which would have led them to question their conclusion and the methodology of the study on which it was based. They did not provide a critical analysis of the extensive research studies concerning measurement of sexual arousal in the male. This review is intended to initiate such an analysis.

The use of penile plethysmography to assess subjects' sexual arousal to male and female adult and child stimuli as a measure of their sexual orientation and pedophilic interest was introduced by Freund (1963). Using a complex transducer, he continuously recorded subjects' penile volume responses (PVRs) to still pictures of male and female nudes, ranging in age from 4 to 30 years. Pictures were exposed for 13 sec, with interval of 19 sec between exposures, or longer if the tracing had not returned to near the original level. As the measure of response, the greatest positive or negative deflection from the level of stimulus onset was used initially. Subsequently he used the difference in level between the tracing at stimulus onset and termination (Freund and Costell, 1970). McConaghy (1967) described a simpler transducer to record subjects' PVRs to a moving travelogue film containing at minute intervals 20 × 10 sec segments of moving pictures, alternatively 10 of a nude woman and 10 of a nude man. Responses were measured by the difference in height of the PVR tracing at stimulus onset and termination.

PVRs do not provide an absolute measure of erection, but a relative measure of the degree of immediate penile reactivity to different stimuli. To quantify this measure and provide an index of the subject's sexual orientation, McConaghy employed the Mann-Whitney U test to determine the significance of the difference in the subject's 10 PVRs to women and the 10 to men. Each subject's PVRs thus produced a U score ranging from 0 to 100. Scores >50 indicated a heterosexual and <50 a homosexual orientation. Scores <23 and >77 indicated the difference in the subject's PVRs to women from those to men was statistically significant (p < 0.05, two tailed).

VALIDITY OF PVR MEASURES OF SEXUAL ORIENTATION

The concept of sexual orientation used in this review is the awareness by a subject of the degree to which he or she experiences feelings of sexual interest or attraction to members of the opposite as compared to members