PENILE PLETHYSMOGRAPHY: VALIDATION WITH A

JUVENILE SEX OFFENDING POPULATION

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Traditionally, juvenile sex offenders have been ignored in the literature. More recently the research has expanded particularly in the area of assessment and treatment. This study focused on the assessment of sexual arousal to deviant stimuli using the penile plethysmography (PPG) since it likely plays a significant role in juvenile sex offending behaviors. The goal of this study assessed its validity and reliability using Becker et al.’s set of PPG scenarios with a population of juvenile sex offenders. Significant differences were found between groups of (a) admitters versus partial admitters and (b) offenders with and without male victims. This study also examined the latent structure of the PPG results and found three dimensions: arousal to male stimuli, arousal to females and paraphilias, and arousal to non-sexual acts. These findings provide important implications for assessment of juvenile sex offenders and add to the clinical utility of PPG assessments.
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CHAPTER 1
INTRODUCTION

Penile Plethysmography: Validation with a Juvenile Sex Offending Population

Clinical researchers have traditionally overlooked juvenile sex offenders, despite their widespread prevalence and far-reaching consequences to society (Becker, 1988). Veneziano and Veneziano (2002) found that the original conceptualization of adolescent sex offenders was benign, construing their actions as comparatively non-violent and engaging in “experimentation.” Groth, Longo and McFadin (1982) considered their actions from a developmental perspective that adolescent sexual offenses were in a phase and would desist with maturity. Contrary to this view, researchers discovered that many adolescent sex offenders both commit violent offenses and develop lifelong patterns of deviant sexual behavior. This is evidenced in the finding that about 50% of adult sex offenders reported committing their first sexual offense as juveniles (Groth & Loredo, 1981). Although what is known about the arousal preferences of juveniles is sparse, these investigations also revealed that deviant arousal plays a significant role in adolescent offending (Abel, Becker, Cunningham-Rathner, 1984; Murphy, DiLillo, Haynes, & Steere, 2001; Stermac & Segal, 1989; Veneziano & Veneziano, 2002).

Mcguire, Carlisle, and Young (1965) proposed that a direct connection exists between sexual arousal to deviant stimuli and deviant sexual behavior. This idea was developed into the “sexual preference hypothesis” that indicates that persons engage in sexually deviant behavior because they have a greater preference for sexual deviance than for socially acceptable sexual behavior (Lalumiere & Quinsey, 1994). Based on this hypothesis, the need to assess the deviant sexual preferences of juvenile sex offenders
is essential for clinical determinations and treatment interventions. Assessment methods fall into one of three categories: (a) self-report measures, (b) attentional measures, and (c) physiological measures. Although research has indicated the usefulness of both the self-report and attentional measures, the assessment method that appears to demonstrate the most clinical utility are the physiological measures, particularly the penile plethysmography (PPG; Becker, Kaplan, and Tenke, 1992).

This study examines the sexual arousal to deviant stimuli patterns using the PPG in a population of juvenile sex offenders. According to Hunter, Becker, Kaplan, Goodwin, and Martinez (1993) although much research has been done on the reliability and validity of the penile plethysmography with adults, its validation with juvenile offenders is very limited. Therefore, the validity and reliability of the penile plethysmography with a juvenile sex offender population is studied in order to assess its usefulness with this population and potentially provide indicators for specific risks.

This introduction describes the issues surrounding juvenile sex offending and presents literature on assessment methods used to analyze sexual arousal to deviant stimuli particularly the use of PPG. It begins with a detailed account of the prevalence of juvenile sex offenses. It continues with different models of juvenile sex offenders. Etiological bases for these sex-offending behaviors are then examined. Subsequently, the relationship of sexual arousal to deviant stimuli to juvenile sexual offending behavior is discussed. The introduction concludes with a description of the methodological issues and limitations of sex offender evaluations as well as the assessment methods commonly used with juvenile sex offenders.
Prevalence of Adolescent Sexual Offending

Veneziano and Veneziano (2002) found that 20% of rapes as well as 30-50% of sexual assaults against children were committed by juveniles. FBI (1997) statistics indicate that 355,300 women over the age of 12 years were the victims of an attempted or completed sexual assault. However, only 31% of these assaults were reported. The low rates of reporting are believed to be due to reasons such as the victim’s embarrassment, self-blame, shame, and a fear of not being believed. Several studies have estimated that the number of reported rapes that result in conviction is anywhere from 2.5% (Rhode, 1989) to 19.9% (Greenfield, 1997). Sinclair and Bourne (1998) believe that most rapes in the United States go unpunished and most authorities agree that the conviction rate for forcible rape is far below that of other violent crimes. Given these estimates, it also is likely that sexual assaults committed by juveniles are grossly underestimated. On this point, Groth and Loredo (1981) suggest that the juvenile statistics may be less accurate than adults because proportionally fewer juvenile sexual offenses are reported.

Groth and Loredo’s (1981) hypothesized that society may continue to excuse adolescent sexual behavior simply because they are juveniles (see also Davis & Leitenberg, 1987). The public may continue to excuse their criminal behavior as “experimentation” resulting from immaturity. Groth and Loredo (1981) also theorized that victims tend to know the adolescent offenders. Rather than report the offenses, these victims may engage in self-blame and respond to negative reactions from family and friends. In summary, the rate of adolescent sexual offenses is a very serious concern, especially in light of the unreported sexual assaults.
Conceptualizations of Juvenile Sex Offenders

The behaviors of juvenile sex offenders must be conceptualized according to their characteristics and the context. Research has shown, however, that adolescent sex offenders are a heterogeneous population with very diverse clinical characteristics (Becker et al., 1992; Hunter & Becker, 1994; Ryan & Lane, 1997). This heterogeneity can make identifying typologies quite difficult. As a result, many classifications of adolescent sex offenders have emerged based on the different motivations for deviant behavior and common characteristics. Traditionally, sexual offenders are categorized into two groups, assaultive juvenile offenders (rapists) and pedophilic juvenile offenders. Righthand and Welch (2001) included a third category of mixed offenders who perpetrated in both classes.

More complex classification systems have emerged as the research on juvenile sex offenders has evolved. Knight and his colleagues (Knight, Carter, & Prentky, 1989; Knight & Prentky, 1990; Prentky, Knight, Rosenberg, & Lee, 1989) refined the typical classification system of rapist and child molesters through subtypes. Child molesters were classified by degree of pedophilic interest and amount of contact with children. Rapists were classified by motivation for the offense: opportunistic, pervasively angry, sexual, and vindictive. In contrast O'Brien and Bera (1986) developed a seven-category classification system. Three of the categories include naïve or undersocialized individuals without malicious intent. The remaining four categories include exploitive, aggressive, and impulsive individuals. Finally, Worling (2001) developed four personality-based groups using the California Psychological Inventory. These four groups are antisocial/impulsive, confident/aggressive, overcontrolled/reserved, and
These three classification systems share some commonalities for motivation but used different groupings for their categorizations. Knight’s classification specifies motivation differently for child molestation and rape. In contrast, O’Brien and Bera (1986) and Worling (2001) combine both offense types and examine motivation generally without specification based on the age of the victim.

The most widely used classification remains the traditional model, based on type of offense: peer/adult offense, child molestation, and mixed offenses. Contrasting rapists and child molesters, Hunter, Figueredo, Malamuth and Becker (2003) compared adolescent child molesters and adolescent rapists from both correctional and noncorrectional facilities. Adolescent child molesters exhibited greater psychosocial deficits and were less aggressive than their rapist counterparts; they were also more likely to offend against a relative. These deficits in psychosocial functioning correspond to previous findings (Bourke & Donohue, 1996; Fehrenbach, Smith, Monastersky, & Deisher, 1986, Kahn & Lafond, 1988) that indicate that child molesters lack of self-esteem and social confidence. A possible motivation for their sexual misconduct is a preference for the company of younger children, combined with a fear and avoidance of adults because they fear ridicule and rejection.

Adolescent rapists differ from adolescent child molesters by exhibiting higher levels of anger and aggression toward women (Davis & Leitenberg, 1987). Possibly fueling this anger are perceptions of women as opportunist and manipulative (Berenson, 1988). Unlike the adult literature, adolescent offenders did not show the expected levels of hostile masculinity or egoistical/antagonistic masculinity.
Abuse History and Offender Typology

Many researchers (i.e., Hunter & Becker, 1994; Marshall & Mazzucco, 1995; O’Brien & Bera, 1986; Knight & Prentky, 1993; Righthand & Welch, 2001) have attempted to identify offender typologies. The majority of these typologies have included the experience of victim abuse as linked to subsequent sex offending behavior (Araji & Finkelhor, 1986; Ryan, 1999). Araji and Finkelhor (1986) suggest theories such as modeling, conditioning of deviant arousal and identifying with the perpetrator, explain the link between childhood maltreatment and the development of deviant sexual behavior. Murphy, Haynes, and Page (1992) have found that the abuse history research has produced mixed and conflicting results. Additionally, although as Cooper, Murphy, and Haynes (1996) suggest, it is intuitively appealing to believe that victimization is a causal factor; empirical research has not supported this belief to the extent expected. The research on the connections between physical and sexual abuse and deviant sexual behavior are discussed in the following paragraphs.

History of Sexual Abuse

Researchers have found that children who display problems with sexual behavior usually have a history sexual abuse (Burton, 1999; Burton, Nesmith & Badten, 1997; Johnson, 1988). Theories, such as the sexual learning theory (Bandura & Walters, 1969) and the intergenerational hypothesis (Davis & Leitenberg, 1987; Freeman-Longo, 1986; Smith, 1988), propose that juvenile sex offenders were victimized sexually and so are repeating these behaviors. As summarized in the next paragraph, studies have yielded inconsistent findings.
In reviewing the literature, Cooper et al. (1996) found reported rates of sexual abuse histories among perpetrators ranging from 17% to 47%. On the other hand, Hunter et al. (2003) indicated that sexual abuse was very common (75%) among sex offenders. Veneziano and Veneziano’s (2002) review of the literature also showed somewhat higher levels of reported abuse. They indicate rates ranging from 40% to 80%. They also found that rates of reported abuse increased after treatment began when individuals apparently felt more comfortable to disclose. This increase suggests that the original numbers may be under-representations of actual abuse histories. In contrast, other studies have found overinflated numbers of childhood sexual abuse reports from sexual offenders. For example, McCormack, Rokous, Hazlewood, and Burgess (1992) found that 76% of rapists reported a history of childhood sexual abuse. Through a review of the research, Burke (2001) found that offenders are likely to exaggerate the prevalence of childhood abuse in order to gain sympathy from the justice system. For instance, Hindman (1988) interviewed individuals convicted of sexual offenses regarding history of childhood sexual abuse while they were connected to a polygraph and found that less than half continued to report sexual abuse history (29% vs. 67%).

**History of Physical Abuse**

Veneziano and Veneziano (2002) found that any form of childhood abuse, including physical abuse, is a risk factor for sexual offending. Cooper et al. (1996) indicate through a review of the literature that 13% to 40% of juvenile sex offenders studied have histories of physical abuse. However, Hunter et al. (2003) found a
significantly higher rate of 63% of their sample reporting physical abuse. As with sexual abuse, the findings for histories of physical abuse are inconsistent across juvenile sex offenders. Veneziano and Veneziano (2002) suggest that the exposure to violence, masochism, and criminal activity, rather than sexual abuse per se, predisposes an individual to become a sex offender.

**Witnessing Violence**

Witnessing of domestic violence has been linked to adolescent sex offending (Veneziano & Veneziano, 2002). Lewis, Shanok and Pincus (1981) found that 76% of juvenile sex offenders reportedly witnessed domestic violence as compared to 20% of nonviolent offenders. Hunter et al. (2003) also examined the abuse histories of juvenile sex offenders. Of the sample, 53% to more than 75% had been exposed to some type of violence toward females. Most were exposed to antisocial behavior by male perpetrators. Likewise, Caputo, Frick, and Brodsky (1999) found that juvenile sexual offenders and juvenile violent offenders reported domestic violence at higher rates than their non-violent counterparts. Although the reported rates of childhood maltreatment of juvenile sex offenders vary greatly, most of the research indicated that these offenders are victimized at a greater rate than the general population (Finkelhor, 1990; Peters, Wyatt, & Finkelhor, 1986). The etiological theories described in the following section also help to explain the parts that childhood maltreatment and witnessing violence play in the development of sexual offending behavior.
Etiology of Sex Offending

Two theories (Becker & Kaplan, 1988; Marshall & Barbaree, 1990) attempt to explain the etiological bases of adolescent sex offending. These theories currently lack systematic data but attempt to elucidate the initiation and maintenance of adolescent sexual offending. They postulate an interactive approach to the development of sexual offending behavior. The following paragraphs outline each approach with a critical analysis of their strengths and limitations.

Marshall and Barbaree's (1990) theory of sex offending explains the etiology of the sexual behavior as an integration of environmental factors and biology. They believe that biological drives, such as sex and aggression, are shaped and expressed based on environmental influences, such as exposure to pornography and violence. Marshall and Barbaree (1990) postulate that adolescent exposure to inappropriate environmental influences during puberty, a crucial time of development, may fuse the biological drives of sex and aggression so that they are inextricably linked.

Becker and Kaplan's (1988) theory of sexual offending posits predisposing factors, including individual characteristics, family variables, and social environment that interact to initiate sexual offending. The individual traits are characterized by experiences, thoughts, and beliefs of the individual; they include deviant sexual fantasies, sexual arousal to deviant stimuli, cognitive distortions (e.g., rape myth beliefs), history of victimization, and personality traits. The individual's exposure to negative experiences in the family include factors, such as poor parenting, violence within the family, and family members' criminal behavior. Finally, the social environment is comprised of non-familial influences, such as inappropriate role models and bonding.
with similar peers. These factors are believed to combine and influence the individual’s choices, decisions, and rationalizations for behaviors. Specific combinations of these factors are possible precursors to the commission of sexual offending behavior.

The two theories propose that a combination of internal and external factors lead to sexual offenses. Marshall and Barbaree’s (1990) theory is based on a belief in a biological integration of between sex and aggression, which are both mediated by the same section of the brain and activated by hormones. According to Marshall and Barbaree (1990), environmental factors do not play an important role until puberty. At puberty, the environmental factors shape the expression of both sexual and aggressive drives. In contrast, the Becker and Kaplan (1988) model is based on the interaction of environmental factors and innate personality characteristics. The Marshall and Barbaree (1990) model, based on biological drives, is partially influenced by psychophysiological research. In contrast, the Becker and Kaplan (1988) model is entirely theory-driven, based on extensive literature regarding the cognitive behavioral model. Recently, researchers have applied cognitive behavioral theory to the etiology of sex offenses (Abel et al., 1984; Kendall, 2002; Stermac & Segal, 1989). An advantage of the Becker and Kaplan (1988) model is that it takes into account the impact of deviant sexual fantasies and arousal (Ward, Hudson, Johnston, & Marshall, 1997). Additionally, the Becker and Kaplan model allows for an explanation of sexually deviant behaviors conducted by adolescents whom have not yet reached puberty.

The research on the etiology of sexual offending behavior is beginning to emerge. The current theories also do not support a simple downward extension of adult research to juveniles. Some researchers have begun to look at the development of
specific variables within these etiological explanations. They include the development of
cognitive distortions, deviant sexual fantasies, and sexual arousal to deviant stimuli.
Several explanations are linked to the theories posited by Becker and Kaplan and
Marshall and Barbaree.

Etiology of Sexual Arousal to Deviant Stimuli

This section focuses on specifically the etiological basis of sexual arousal to
deviant stimuli. Several theories have emerged providing possible explanations for the
development of sexual arousal to deviant stimuli. Sexual arousal to deviant stimuli
cannot be elucidated, however, without discussing the part that deviant sexual fantasies
play in sexual arousal to deviant stimuli, as both are a part of the erotic response
(Rempel & Serefini, 1995).

arousal” and “sexual desire.” They define sexual arousal as a wholly physical response
that encompasses an array of autonomic reactions. Conversely, they consider sexual
desire to be the psychological aspect of the erotic response. Sexual desire often
incorporates anticipation, motivation and imagery. Freund (1978) noted that sexual
arousal is guided by the erotic stimuli and erotic activity. Hence, sexual arousal is
affected by the level of attraction to or preference for the stimulus, and therefore sexual
desire. As identification of sexual preference is often based on a measurement of
certain aspects of the erotic response, this clarification is included (Kalmus & Beech,
2005; Rempel & Serefini, 1995).

According to the “sexual preference hypothesis” (McGuire et al., 1965), sexual
arousal to deviant stimuli plays an instrumental role in sexually offending behavior. To
expand theory, Groth and Birnbaum (1978) derived a dichotomous theory of deviant
sexual preference distinguishing between those with a preference for adults and those
with a preference for children. These two theories provide possible etiological bases for
the development of sexual arousal to deviant stimuli; they are explained and analyzed in
the following paragraphs.

McGuire et al.’s (1965) sexual preference hypothesis is based on the idea that
sexual arousal to deviant stimuli is a direct result of deviant sexual preference. This
hypothesis asserts that individuals who engage in deviant sexual behaviors do so
because they have preference for them rather than for socially accepted sexual
behaviors. McGuire et al. (1965) adopted a behaviorist perspective in explaining the
preference for sexual deviance. Simply put, they suggest it is a result of classical
conditioning. Through simultaneous experiences of deviant stimuli and physiological
sexual arousal, a psychological association is formed. This association is maintained
through operant conditioning. Masturbation to the deviant fantasies reinforces the
association while arousal to nondeviant stimuli is extinguished (Kalmus & Beech, 2005;
Lalumiere & Quinsey, 1994; McGuire et al., 1965).

Groth and Birnbaum (1978) posit a dichotomous theory that specific psychosocial
factors produce deviant sexual preferences. The dichotomous groups are “fixated” and
“regressed” offenders. Fixated offenders exhibit a persistent preference for children and
mainly offend against strangers and non-familial acquaintances. According to Groth and
Birnbaum, the fixated offender’s interest in children results from the halting of the
offender’s psychosocial development during adolescence. This psychosocial stunting is
said to be the product of “unresolved formative issues that persist and underlie the organization of subsequent phases of development” (Groth & Birnbaum, 1978, p. 176). Due to this psychosocial stunting, the fixated offender also experiences interpersonal isolating deficits in social, psychological and emotional areas (Crassati, 1998). In contrast, the regressed offenders have a sexual preference for adults rather than children, are typically incestuous, and are believed to have experienced normal psychosocial development. Gagnon (1977) suggests that the regressed offender’s sexual preference for adults is a result of a recent inability to obtain sexual fulfillment with an adult partner, a means of seeking comfort from familial stresses, or both (Groth, 1979).

McGuire et al.’s (1965) theory, however, posits a strictly behaviorist perspective where individual characteristics do not influence the development of sexually deviant preferences. They indicate that any individuals could develop a preference for sexually deviant stimuli if exposed to a specific scenario in which they could be conditioned. Groth and Birnbaum (1978) propose that certain psychosocial variables be present in order to develop a deviant sexual preference. Unlike McGuire et al. (1965), they also divided the offender groups into categories indicating that a different set of circumstances is needed to develop a sexual preference for children than to adults. Finally, Laws and Marshall (1990) concluded that, although the sexual preference hypothesis lacks empirical support, it is a prominent and highly influential approach to the etiology of deviant sexual preference and arousal.

These theories centering on deviant sexual preference, fantasies, and arousal, highlight the importance understanding these variables through gathering empirical
data. Research has supported aspects of both theories but neither in its entirety. Additionally, these theories were not based on a juvenile population, so once again clinicians are attempting to assess, treat and understand juvenile offenders based on models created for adults.

**Importance of Assessing Sexual Arousal to Deviant Stimuli**

Singer (1984) theorized a multistaged process of sexual arousal. Its three stages are independent but generally occur sequentially: the aesthetic response, the approach response, and the genital response. The aesthetic response is when someone or something attractive is noticed; this results in an increased attention toward the object of attraction. The approach response creates a bodily movement toward the object of interest. The final stage, the genital response, is when genital tumescence occurs as a result of attention and proximity.

Singer’s (1984) model indicates the relationship between sexual interest (Stages 1 and 2) and sexual arousal (Stage 3). Mcguire et al.’s. (1965) sexual preference hypothesis explains how Singer’s (1984) stages become deviant. Adolescent sex offenders in the first two stages of the sexual arousal revolve around deviant thoughts, fantasies or ideas: later the subsequent arousal also becomes deviant. Singer’s (1984) Stage 3 is measured with penile plethysmography for assessing sexual arousal to deviant stimuli (Smith & Fischer, 1999).

Due to the connection between “sexual arousal to deviant stimuli” and “deviant sexual interest” most researchers use these terms interchangeably. This interchangeability is due to the way in which we evaluated the sexual response cycle
(Gray & Plaud, 2005). Harris and Rice (1996) explained that plethysmography is a measure of the erectile response and that translates into the scientific measure of the sexual preferences of men. For this section, the role that deviant sexual preference/interest and sexual arousal to deviant stimuli play in adolescent sex offending behavior is discussed. These terms are also used interchangeably, as was indicated above, because when measuring one we are actually measuring the other as well.

The association between deviant sexual fantasies and deviant sexual behavior is acknowledged by many researchers (Gratzer & Bradford, 1995; MacCulloch, Snowden, Wood, Mills, 1983; Meloy, 2000; O’Donohue, Letourneau, & Dowling, 1997). However, Aylwin, Reddon, and Burke (2005) found that the research connecting fantasies and behaviors is lacking. The evidence used to support the connection has been largely anecdotal (i.e., sex offenders telling their therapists that deviant sexual fantasies precede their deviant behavior). Langevin, Lang and Curnoe (1998) are the only researchers to present evidence indicating that deviant sexual fantasies are not important. In contrast, Aylwin et al. (2005) found that adolescent sex offenders entered treatment with pervasive deviant sexual fantasies. They routinely masturbated to these deviant fantasies, which usually preceded their deviant behavior. The authors found that deviant sexual interest plays a substantial role in offending behavior and should continue to be assessed.

Most treatment programs for juvenile sex offenders target “decreasing sexual arousal to deviant stimuli” as a major treatment goal (Becker & Hunter, 1997; Hunter & Figueredo, 1999; National Adolescent Perpetrator Network, 1993). For initial evaluation
and treatment outcomes, sexual arousal to deviant stimuli must be assessed. Holland, Zolondek, Abel, Jordan, and Becker (2000) state that clinicians find it useful to discriminate individual patterns of sexual fantasies. According to Salter (1988) discovering the individual patterns of sexual fantasies exhibited by offenders helps develop treatment programs. After assessing and categorizing the arousal patterns, behavioral techniques can then be used to change the specific deviant fantasies.

Limitations in Assessments of Juvenile Sex Offenders

Methodological Issues

Methodological issues often arise when working with sex offenders and especially adolescents. Because juvenile offenders are a twice-protected population (i.e., juveniles and incarcerated), research options are limited due to ethical concerns and other methodological issues. For example, use of the PPG raises ethical concerns (e.g., the invasiveness of the tumescence measure and the presentation of sexually explicit stimuli) when used with juveniles. (Bourke & Donohue, 1996; Hunter, Hazelwood, & Slesinger, 2000.) According to Bourke and Donohue (1996) and Hunter et al. (2000) ethical concerns extend to psychometric measures and treatment methods when they involve sexually explicit questions, pictures, or techniques. These heavily debated ethical problems arise when juveniles, particularly under the age of 14 years, are exposed to sexually deviant stimuli. When conducting research on juvenile sex offenders, special care needs to be taken to ensure no further harm comes to these juveniles and that they are not exposed to any unnecessarily gratuitous or sexual stimuli.
Rogers and Dickey (1991) stated that cognitive distortions hamper the accurate evaluations of sex offenders’ paraphilic behaviors and ideas. Because of this, the research on the utility of self-report measures is likely complicated by cognitive distortions (Ward, Keenan, & Hudson, 2000). Despite these difficulties, Ward et al. (2000) found some research showing discernible cognitive distortions regarding paraphilic beliefs and behavior among sex offenders. With other research, it is unclear whether the lack of differences reflects cognitive distortions or accurate findings for specific beliefs.

*Patterns and Models of Denial and Minimization*

Rogers and Dickey (1991) described “defensiveness” as the pattern of minimization and denial observed in sex offenders. Several theories on defensiveness of sex offenders and its facets have emerged (Kennedy & Grubin, 1992; Langevin, 1988; Rogers & Dickey, 1991; Sewell & Salekin, 1997). These theories, explained in the subsequent paragraphs, provide a framework for understanding defensiveness in sex offenders.

In studying aspects of defensiveness, Kennedy and Grubin (1992) described four different patterns of denial or minimization that emerged among male sex offenders. Patterns 1 through 3 described men who admitted their offenses but either, (a) denied, minimized, or distorted the consequences or (b) blamed the behavior on others or external factors. Pattern 4 described men who completely denied their offenses. Sewell and Salekin (1997) found that the patterns described by Kennedy and Grubin (1992) corresponded with the “degrees of admission” found by Langevin (1988).
Sewell and Salekin (1997) noted that each pattern has implications for the recognition of defensiveness in sex offenders and its treatment. They also believed that these typologies indicate that sex offenders are defensive about not only acknowledging the offense but also regarding the causes of the offense and its consequences. They suggest that the finding of distinct groups with distinctive patterns of defensiveness highlight the need for assessment and treatment methods addressing this array of defensive patterns.

When applied to sex offenders, Rogers and Dickey’s (1991) models of defensiveness provide three separate but not exclusive motivations for defensiveness. Their pathogenic model predicted that defensiveness is an unconscious process that protects the sex offender from having to accept responsibility for the offense in order to minimize psychological distress (guilt, shame, and anxiety), which would occur as a result of accepting responsibility. In contrast, the criminological model attributes defensiveness to characteristically “bad” individuals with antisocial personality disorder (APD). This model suggests that their defensiveness is both contextual and characterological evidence of their “badness.” The adaptational model is based on a decision theory where the offender’s defensiveness is based on “expected utility.” Sex offenders perceive themselves in an adversarial setting (e.g., forensic evaluation) and see denial as an adaptive approach to their current circumstances.

Sewell and Salekin (1997) proposed a socioevaluative model as an addition to Rogers and Dickey’s (1991) three models. This model assumes that offenders dissimulate as an attempt to prohibit their “private world” from being examined and made public. Sewell and Salekin (1997) indicate that defensiveness is a learned
response as evaluations of these offenders have often led to failure, ostracism, stigmatization, and loss of freedom.

**Assessment of Juvenile Sex Offenders**

The heterogeneous nature of juvenile sex offenses makes it necessary for comprehensive assessments to be conducted with each offender. These evaluations serve several purposes in providing assessment and treatment data, and identifying juveniles at high risk for reoffending (Faniff & Becker, 2006; Nangle, Hecker, Grover, & Smith, 2003; Veneziano & Veneziano, 2002). Davis and Leitenberg (1987) and Veneziano and Veneziano (2002) indicate that the evaluation process begins by gathering demographic and descriptive information from the offenders including offense, maltreatment and drug histories. General assessment measures are then completed in order to evaluate areas such as psychopathology and personality characteristics. Nangle et al. (2003) found that the primary goals of assessment with juvenile sex offenders are to address cognitions, empathy, and sexual information. Specifically, cognitive distortions, general and victim-specific empathy, sexual arousal to deviant stimuli, denial and minimization, and recidivism risk are evaluated. Common assessment measures used with juvenile sex offenders are analyzed in the following sections.

*General Assessment of Juvenile Sex Offenders*

The following paragraphs address the general evaluative measures used with all juvenile offenders and some specific measures used in the assessment of juvenile sex offenders. This section is divided into subsections based on type of assessment.
measure (i.e., self-report, interview, and physiological). The most commonly used and validated measures are described.

**General Self-Report Measures**

Juvenile offenders usually receive a battery of test used to assess psychopathology, personality, and maltreatment history. The most common and valid measures used to evaluate psychopathology and personality characteristics in juveniles are the Minnesota Multiphasic Personality Inventory – Adolescent (MMPI-A; Butcher et al., 1992), the Jesness Inventory (JI; Jesness, 1966, 1991), and the Revised Behavior Problems Checklist (RBPC; Quay, 1977; Quay & Peterson, 1987). The MMPI-A is a personality inventory used to identify the patterns of psychopathology in juveniles. The research findings are inconsistent regarding the differentiation of juvenile sex offenders and nonsex offenders on the clinical scales (Hunter & Becker, 1994; Freeman, Dexter-Mazza, & Hoffman, 2005). The JI (Jesness, 1966, 1991) is a 155-item scale used to measure personality characteristics as well as asocial behavior, and conduct problems specifically with adolescent offenders. The JI is widely used with the juvenile offending population for the purposes of classification and treatment, although it has not been researched as much as the MMPI measures (Harris, 1980; Kraemer, Salisbury, & Spielman, 1998).

Another method for assessing child and adolescent psychopathology is through caregiver reports. The RBPC was created by Quay and associates (1977; 1987) to measure 4 dimensions of child psychopathology; anxiety-withdrawal, attention problems, conduct disorder, and socialized aggression. The RBPC allows for the
offender’s parent or guardian to indicate the extent of the offender’s anxiety and problematic behaviors. The RBPC is commonly used to aid in diagnosis and to classify juvenile offenders (Armistead, Wierson, Forehand, & Frame, 1992; Blaske, Bourduin, Henggeler, & Mann, 1989; Pierce & Pierce, 1987).

In order to assess maltreatment history as nonintrusively as possible the Childhood Trauma Questionnaire (CTQ) is often administered to juvenile offenders. The revised version of the CTQ (Bernstein & Fink, 1998; Bernstein et al., 2003) is a 28-item questionnaire containing 5 subscales with 5 items each and a three-item Minimization-Denial subscale to assess attempts to deny experiences of childhood abuse. The 5 subscales measure varying aspect of child maltreatment including abuse and neglect. In research conducted by Bernstein et al. (2003), CTQ scores correlated highly with therapists ratings of the participants’ maltreatment histories.

**Sex Offender Specific Self-Report Measures**

Evaluations of juvenile sex offenders often assess clinically relevant issues such as cognitive distortions, empathy, and defensiveness and minimization. The scales include the Adolescent Cognitions Scale and the Interpersonal Reactivity Index.

The Adolescent Cognitions Scale (ACS; Hunter, Becker, Kaplan, & Goodwin, 1991) is a research scale that measures deviant attitudes and cognitive distortions in juvenile sex offenders. This 32-item forced choice measure describes sexual attitudes, values, and behaviors that the respondent must either endorse (true) or reject (false). Behaviors, attitudes and beliefs are described that are deviant/inappropriate, or socially responsible/appropriate. The ACS is intended to discriminate adolescent sex offenders
from adolescent nonsex offenders. Although empirical data are sparse, it is still used in conjunction with other assessment tools because it is one of the only cognitive distortion measures for juvenile sex offenders.

The Interpersonal Reactivity Index (IRI) was developed by Davis (1983) to measure individual differences in dispositional empathy. This multidimensional measure has 4 subscales that assess the various distinct facets of empathy. The IRI subscales measure affective empathy and cognitive empathy. Pithers (1993) endorsed its clinical utility with a sex offending population.

*Interviews and Checklists*

Evaluations of adolescent sex offenders often address risk assessment. Conroy (2002) suggests that risk assessments are important for both sentencing decisions and determinations of effectiveness of treatment. The three measures that appear to be the most promising are the Psychopathy Checklist-Youth Version, the Juvenile Sex Offender Assessment Protocol-II, and the Estimate of Risk of Adolescent Sexual Offense Recidivism (Conroy, 2002; Fanniff & Becker, 2006).

The Psychopathy Checklist-Youth Version (PCL-YV) developed by Forth, Kosson, and Hare (2003) is based on 20 items similar to the Psychopathy Checklist-Revised (Hare, 2003). The PCL-YV is a standardized measure of psychopathy consisting of two factors: Factor 1 contains interpersonal/affective variables, and Factor 2 contains socially deviant lifestyle variables (Forth et al., 2003). On the adult measures, Conroy (2003) concluded that the PCL-R shows good predictive validity for sexual
recidivism, although less so when applied to child molesters. The PCL-YV has not been validated with a juvenile sex offending population.

Prentky and Righthand (2003) developed the Juvenile Sex Offender Assessment Protocol-II (JSOAP-II) as an actuarial measure used to identify risk factors associated with both sexual and criminal recidivism. Prentky, Harris, Frizzell, and Righthand (2000) found that juvenile sex offenders who recidivate had higher scores on the JSOAP-II. Although more research is necessary, these two studies are promising.

The Estimate of Risk of Adolescent Sexual Offense Recidivism scale (ERASOR; Worling & Curwen, 2001) is an empirically guided risk assessment evaluation using a list of relevant factors for clinicians to make clinical risk ratings (low, medium, or high). Using the 25 items/risk factors, Worling and Curwen (2000) found that the ERASOR was able to identify those juveniles who sexually reoffended.

Assessment of Sexual Arousal to Deviant Stimuli

A major area of interest in evaluating juvenile sex offenders is to identify deviant sexual interest, as defined by arousal to deviant stimuli (Fanniff & Becker, 2006). When evaluating sexual arousal to deviant stimuli, there are four major types of assessment methods: self-report measures, interviews, attentional measures, and physiological measures. Since this thesis focuses on understanding and evaluating sexual arousal to deviant stimuli, these methods are discussed in detail.

Self-Report Measures and Interviews

The most common assessment method of sexual arousal to deviant stimuli is
self-report inventories. Self-report inventories are often used because they are easy to administer and are not physically invasive (Hunter, Becker, & Kaplan, 1995). Additionally, clinicians (Abel, 1985; McConaghy, 1993; Quinsey & Earls, 1990) have indicated that it may be easier for offenders to admit to their deviant thoughts and behaviors on paper than directly to clinicians. However, Quinsey and Earls (1990) and Freund (1981) indicated that self-reports of arousal and sexual interest are easily minimized via denial and that they do not correlate highly with phallicometric assessments.

The Multiphasic Sex Inventory (MSI; Nichols & Molinder, 1984) is a self-report measure of sexual arousal to deviant stimuli in offender populations. The MSI is a forced choice inventory where offenders must either endorse (true) or deny (false) sexual characteristics. The MSI results are presented across 20 scales that represent sexually deviant acts and behaviors (e.g., rape and molest scales) and paraphilias (e.g., voyeurism, and fetish scales). The MSI-II (Nichols & Molinder, 2005) is the revised version of the MSI that was just recently published. A juvenile version of the MSI has also been developed but it has not yet been published and empirical data are not yet available. The MSI is one of the most commonly used self-report measure with adult sex offenders for treatment prognosis and outcome research (Beech, Fisher, & Becket, 1998; Geer, Becker, Gray & Krauss, 2001; Kalmus & Beech, 2005; Mental Measurements Yearbook; Nichols & Molinder, 2005; Simkins, Ward, Bowman, & Rinck, 1998).

The Clarke Sexual History Questionnaire (Paitich, Langevin, Freeman, Mann, & Handy, 1977) is a 225-item questionnaire regarding the frequency of enacting a range
of sexual behaviors and experiencing arousal to deviant sexual stimuli. Twenty-four scales were derived from the 225 items that the authors found were able to distinguish between offender groups and non-offenders. It is one of the few self-report measures available for evaluating sexual arousal to deviant stimuli; however, the only published research on the scale is by its authors. Based on the research from the authors it shows some promise for a clinical measure but more research is needed before its clinical utility can be established.

The Thorne Sex Inventory (TSI; Thorne, 1966) is an interview-based measure of sexual arousal to deviant stimuli. The 200-item true/false TSI was developed by Thorne (1966) as a structured interview to assess sexual behavior and self-perceptions. Haupt and Allen (1996) found that the scales related to offending behavior differentiate a range of offender and non-offender groups but not the total score. Additionally, they indicated that the TSI is highly vulnerable to denial and minimization. For these reasons, the TSI is not used for clinical purposes but can be used for gathering data and as a pool of questions for questionnaire development (Hanson, Cox, & Woszcsyna, 1991).

The Adolescent Sexual Interest Card Sort (ASIC) was developed by Becker and Kaplan (1988) as a self-report alternative to the penile plethysmography (PPG). The ASIC is based on the Sexual Interest Cardsort Questionnaire (SI) developed by Abel and Becker (1979) for use with adult sex offenders. As described by Hunter et al. (1995), the ASIC uses similar stimuli as the PPG. Instead of measuring erections, however, the ASIC asks the juvenile offenders to rate their level of arousal to the stimulus. The ASIC contains 64 vignettes whose scores are supposed to correspond with tumescence scores on the PPG. Although Hunter et al. (1995) established
adequate reliability, the ASIC evidences only a few correlations with PPG tumescence. Additionally, Fanniff and Becker (2006) acknowledged that there are no data comparing sex offending to non-sex offending groups in order to assess its discriminability and vulnerability to socially desirable responding. Because the ASIC is the only self-report measure with reliability data for a juvenile population, it is commonly used (Bourke & Donohue, 1996).

Self-report inventories and interview-based measures are often used because they are a more easily administered and are believed to be more cost effective assessment of sexual arousal to deviant stimuli. Nonetheless, they do not have the empirical data to support their clinical use with a juvenile sex offending population and are not cost effective if they do not work (Abel, Becker, Murphy, & Flanagan, 1981; Becker et al., 1992). As discussed previously, sexual offenders are highly skilled at deceptive techniques, such as minimization and denial, particularly when discussing their sexual motivations and interests. Therefore, evaluations based solely on self-report information have questionable data (Abel, 1985; Abel, Becker, Cunningham-Rathner, Mittelmann, & Rouleau, 1988; Conte & Schuerman, 1988; Launay, 1994; Rogers & Dickey, 1991; Salter, 1988; Sewell & Salekin, 1997; Stein, Golding, Siegel, Burnam & Sorenson, 1988). Alternatively, more objective assessments have developed in order to counteract the effects of social desirability on evaluating sexual arousal to deviant stimuli. One approach is an attentional measure.

**Attentional Measure**

Attentional methods for evaluation sexual arousal to deviant stimuli can be
divided into two groups; viewing-time and information-processing measures. These methods have been developed as objective and less physically intrusive alternatives to the PPG that does not face the same ethical limitations regarding the intrusiveness of the measure (Abel, Jordan, Hand, Holland, & Phipps, 2001; Laws, 2003; Marshall, 1996; Osborn, Abel & Warberg, 1995). Attentional measures are based on Singer’s (1984) theory of sexual arousal. In the response stage, Singer indicates that the objects that the individuals find “aesthetically” attractive will receive more attention. Viewing time measures assess the amount of time a participant views the stimuli in order to assess its level of “attractiveness” to the individual. In contrast, the information-processing method measures the effect that increased attention to a particular stimulus has on an information processing task (Kalmus & Beech, 2005). The only attentional measure used with juveniles is the Abel Assessment for Sexual Interest (AASI; Abel Screening Incorporated, 2001).

The AASI, developed by Abel Screening Incorporated (2001), measures sexual interest and therefore arousal through a combination of viewing time, sexual history, and self-report sexual interest measures. Twenty-two categories of sexually inappropriate stimuli are presented through 160 slides, and the participant is not aware that viewing time is being measured. The AASI produces statistics on the probability of having previously sexually offended. The participant’s response set is compared to offending models developed from the data of admitting offenders against girls, admitting offenders against boys, and denying participants “believed by therapist to be actual child molesters” (Abel et al., 2001, p. 712). Researchers (Krueger, Bradford & Glancy, 1998; Kalmus & Beech, 2005) noted that very high specificity reduces sensitivity to a
modest level (25%). When assessing juveniles, Abel et al. (2004) found that the AASI was able to differentiate between a child molester group and adolescents with no child victim offenses. Its ability to distinguish child molesters from other offenders against children has not been tested. The effects of minimization with and without coaching has also not been tested. Researchers have found mixed data when comparing AASI and PPG data (Letourneau, 2002).

Physiological Measures

This section reviews the physiological measures that are used as objective assessments of deviant sexual interest and arousal. Measures include the thermistor of penile and groin temperature, photoelectric surface blood volume measure, pupillometry measure, and electroencephalographic (EEG) measurement (which are not commonly used), and the measure with the most clinical utility, the PPG. The less commonly used measures are addressed briefly.

Several physiological measures have been proposed as alternatives to the PPG that reduce the ethical and invasiveness concerns. The thermistor measure correlated highly with PPG data when measuring penile and groin temperature. However, it was slow in detecting detumescence (Abramson, Perry, Seely, Seely, & Rothblatt, 1981; Beck, Barlow, & Sakheim, 1983; Rubinsky, Hoon, Eckerman, & Amberson, 1985; Webster & Hammer, 1983).

The surface blood volume measurement is based on the Masters and Johnson’s (1966) finding that increased blood flow to the penis during arousal also increased blood volume to the surface of the skin. Hinton, O’Neill, and Webster (1980) found that this
measure did not correlate very highly with PPG data for that majority of their participants.

The measure of pupillometry is the study of pupil dilation and constriction. Hess and Polt (1960) first demonstrated that participants’ pupils dilated when viewing arousing sexual stimuli and constricted when viewing unarousing sexual stimuli. Their research has been subsequently criticized because of large within-group variations and no demonstrable reliability in discerning preference (Garrett, Harrison, & Kelly, 1989; Peavler & McLaughlin, 1967).

Finally, the EEG measurement of contingent negative variation (CNV) assesses the neurological result of anticipation among offenders who are aware that they are about to be presented with sexually preferred stimuli (Kalmus & Beech, 2005). Howard, Longmore, Mason, and Martin (1994) used the EEG to correctly classify homosexual and heterosexual men and child molesters. No further EEG research for sexual arousal has been reported. In summary, the PPG is considered superior to other measures in assessing sexual arousal to deviant stimuli in both adult and adolescent offenders (Kalmus & Beech, 2005).

Launay (1994) described the PPG as a technique that is used with sex offenders to measure their erectile response to a set of sexually explicit stimuli. The PPG is commonly used to challenge sex offenders’ denials and minimizations and evaluate their treatment needs. Launay (1994) indicates that PPG data should not be used, however, as an establishment of guilt or a prediction of future sexually deviant behavior. The PPG is a transducer that measures changes in penile tumescence while a recorder makes a permanent record of these changes (Earls, & Marshall, 1983; Laws & Osborn,
1983; Rosen & Keefe, 1978). Two types of transducers have been used: volumetric and circumferential. Freund, Sedlacek, and Knob (1965) used the volumetric transducer to measure changes in volume of the entire penis. The volumetric transducer is rarely used because it is awkward to operate, although it can measure low levels of arousal better than the circumferential transducer. The circumferential transducer (Bancroft, Jones, & Pullen, 1966; Barlow, Becker, Leitenberg, & Agras, 1970) uses either a flexible lightweight stainless steel metal clip (i.e., the Barlow Gauge) or a silastic rubber tube filled with mercury or indium gallium. Laws (1977) found that both types of circumferential transducer produce similar results.

Launay (1994) explained that the PPG procedures and the stimuli are not standardized and vary greatly across settings. For the initial procedures, testers and researchers have established their own methods for helping subjects feel at ease in order to increase their arousability and decrease faking. According to Langevin and Martin (1975), some testers use relaxation instructions, reassurance about the apparatus, or relaxing music. Other testers choose to provide “warm up” procedures. Based on Earls, Quinsey, and Castonguay’s (1987) idea that once aroused the subject is more likely to become aroused again, some administrators show participants nondeviant pornographic material. As a more radical approach, Freund, Watson, and Rienzo (1988) gave participants testosterone injections or alcohol to stimulate sexual arousal.

Various research has looked at the ability to fake on the PPG and its ability to detect faking. Some clinics instruct their participants to suppress their arousal for half of the trials and to respond typically to the other half (Wormith, Bradford, Pawlak, Borzecki,
This strategy has been questioned because researchers, such as Laws and Rubin (1969), found that participants were then able to reduce their erection when desired in order to “fake good,” and critics indicate that these researchers are teaching participant to “fake good.” Since these studies, several procedures have been designed to prevent suppression of arousal. Wormith (1986) and Mahoney, and Strassberg (1991) asked their subjects to describe aloud the stimuli they were viewing. Quinsey and Chaplin (as cited in Murphy & Barbaree, 1989) had participants differentiate between stimuli involving violence and stimuli involving sex by pressing separate keys for each. These methods both ensured that the participants were attending to both the screen and the content.

No standardized set of stimuli or even presentations of stimuli have been developed. According to Launay (1994) slides, audiotapes and videotapes are used as stimuli to assess sexual arousal to deviant stimuli. Pictures are believed to be ideal for victim preference (i.e., male vs. female; child vs. adult). Audiotapes are usually used to evaluate preferred activities (e.g., coercive vs. consensual). Videotapes can be used for both preferences and activities; however, Abel, Becker, and Skinner (1980) concluded that they are not the best method because the offender will likely be so aroused that discriminability will be very difficult.

Many different sets of stimuli are available for PPG measurement. Clinicians have also created their own measures or a combination of measures. This heterogeneity makes validating the PPG a very difficult task because there is no standardization. The most commonly used measures are discussed in the following paragraphs.
Abel, Blanchard, Becker, and Djenderedjian (1978) developed a set of PPG stimuli using videotapes. These videos displayed sexual encounters between adult males and adult females with various amounts of coercion. These videos have limited applicability since they only show adults. As noted by Abel and Blanchard (1976), these videos cause such strong sexual arousal that differential responding becomes difficult to detect.

Laws and Obsborn (1983) created a stimulus set of slides depicting nude male and female whose ages vary from toddlers through adults. The responses to these slides have been fairly accurate in classifying child molesters (Barbaree & Marshall, 1988). Recently, Laws and Gress (2003) created a new set of slides based on of Konopasky’s (cited in Laws & Gress, 2003) computerized slides. Laws and Gress’ (2003) slides consist of 2 sets of 80 computer-constructed or computer-modified slides. Forty of each set of slides contains nude images depicting individuals of different ages of each gender; the other 40 are clothed. This measure is new and lacks empirical data.

Blanchard, Klassen, Dickey, Kuban, and Blak (2001) developed a set of test stimuli with audiotapes and slides. The stimuli consist of narratives presented through headphones and accompanied by slides. The slides contain pictures of nude models and correspond to the description of the victim and activity in the narrative. The stimuli are divided into 7 categories; prepubescent girls, pubescent girls, adult women, prepubescent boys, pubescent boys, adult men and “neutral” stimuli. The research has shown its ability to differentiate between adult male pedophiles with regard to the relationship of their female victims (Blanchard et al., 2006). Due to the use of nudity, it
has not been tested with a juvenile population. Therefore, no reliability or validity data are available with this population.

Avery-Clark and Laws (1984) also used a set of auditory PPG stimuli with narrated scenarios of sexual encounters. The content varies with coercion, gender, and age. The Avery-Clark and Laws (1984) measure is a commonly used measure because it avoids some ethical concerns associated with visual stimuli.

The final set of stimuli is that which was created by Becker et al. (1992). Becker et al. (1992) developed a set of auditory cues to be used as the stimuli for the PPG. Each of the audiotaped descriptions is 2 minutes long. The audiotaped descriptions depict various sexual behaviors in which juvenile sex offenders engage. The narrations form 19 categories of sexual and non-sexual behaviors (see Appendix A).

**Purpose of the Current Study**

Current research on juvenile sex offenders has indicated that deviant sexual interest and arousal are prominent issues in the initiation of sexual offending behavior. In order to understand and correct the factors that lead to the onset of juvenile sex offending behaviors, assessment of the juveniles deviant sexual interests are needed. PPG evaluations are the best available methods for assessing sexual arousal to deviant stimuli in adult populations. However, PPG data on juvenile sex offenders are scarce (Faniff & Becker, 2006). This study evaluates the patterns of sexual arousal to deviant stimuli found in juvenile sex offenders and the reliability and validity of the PPG with this population.
Research Questions

*Further Validation of the PPG as a Standardized Measure*

1. The PPG factor structure: The underlying dimensions of the PPG are examined to provide higher-order interpretations of sexual deviance.

2. The PPG reliability: The internal consistency of the PPG factor scales was evaluated as a measure of its reliability.

3. Predictive validity of the PPG: An evaluation of the PPG’s ability to predict group membership was conducted. The predictive validity of the PPG was assessed with level of admitting (i.e., admitters versus partial admitters).

*Supplementary Analyses*

4. PPG validation: To further validate the PPG, analyses were conducted to determine if the PPG could differentiate between offenders based on the age and gender of their victims. Age and gender were combined in the first analysis. The second and third analyses looked at age and gender separately.
CHAPTER 2

METHOD

The present study uses a contrasted-groups design. This quasi-experimental design was selected to examine preexisting groups of adolescent offenders, which cannot be randomly assigned.

I received approval to use the data set and conduct this study from Dr. Murphy at the Special Problems Unit, Department of Psychiatry, University of Tennessee Health Science Center. The study also received ethical approval through the University of North Texas Institutional Review Board (IRB) on April 18, 2007. This study did not require a full IRB review because it is a secondary analysis of an already existing data set.

Participants

The data used in this study are from an archival data set where participants consisted of adolescent male offenders that were evaluated at the Special Problems Unit, Department of Psychiatry, University of Tennessee Health Science Center. This center is a university-based evaluation and treatment program for sexual offenders. The participants received treatment at this facility and were evaluated as a part of the program. The participants were referred from several different places: court order due to an arrest, Child Protective Services, or a mental health facility.
Measures

**PPG**

Becker et al. (1992) developed a set of auditory cues used as the stimuli for PPG assessments of juvenile sex offenders. The PPG uses a small Barlow gauge circumferential transducer upon the penis in order to assess erectile response to the auditory stimuli. The stimuli are composed of a series of 2-minute audiotaped descriptions of various sexual encounters. Originally Becker et al. (1992) included 21 scenarios, but two scenarios were excluded from the data set (heterosexual sex and homosexual sex). Becker et al. (1992) indicated that their stimuli presentations have demonstrated test-retest reliability ranging from poor to robust (i.e., .21 to .83) when presented on successive days.

Procedure

No consent forms were used because offenders were mandated for treatment and the test findings were used in treatment. Participants in the data set provided a structured history of abuse and perpetration and completed several psychological measures and the PPG. The structured history was gathered during the intake assessment at the treatment program. The history is gathered from the participants and their family members. Additionally, official records are obtained when possible.

The psychological measures administered were the Otis Self-Administering Tests of Mental Ability (Otis, 1928), Multiphasic Sex Inventory (Nichols & Molinder, 1984), the Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1940), the Assault Knowledge Inventory (i.e., Rape Myth Acceptance Scale [Burt, 1980], Sex Role
Satisfaction [Rosenthal & Griere, 1990], Sex Role Stereotyping [Kelly & Smail, 1986], Adversarial Sexual Beliefs [Burt, 1980], Sexual Conservatism [Burt, 1980], and Acceptance of Interpersonal Violence [Burt, 1980]), the Interpersonal Behavior Survey (Mauger & Adkinson, 1980), the Family Adaptability and Cohesion Evaluation Scales-III (Olson, Portner, & Lavee, 1985), the Youth Self Report (ages 11-18; Achenbach 2001), the State Trait Anger Expression Inventory (Spielberger, 1988), and the Childhood Adolescent Taxon Scale (Harris, Rice & Quinsey, 1994).

The individuals then participated in a psychophysiological assessment, the PPG, used to assess levels of sexual arousal to deviant stimuli. The device was placed around the base of the penis by the participants and measured the tumescence of the erectile response. Two complete sets of 19 sexual and non-sexual presentations were given to each participant and were presented in random order. To avoid fatigue, each set of stimuli was divided in half and presented at least 2 hours apart. The second set of stimuli was presented on another day, usually 24 hours later, again in two separate sessions. Intervals between the stimuli were at least 30 seconds or until the subject returned to within 3–5 mm of baseline (Murphy & Barbaree, 1994).
CHAPTER 3

RESULTS

The data set consisted of 248 adolescent male offenders referred for assessment and treatment to the Special Problems Unit, Department of Psychiatry, University of Tennessee Health Science Center by various parties (e.g. a court mandate, from child protective services, or a mental health facility). As illustrated in Table 1, the racial composition of the sample was 65.7% African American, 31.0% European American, 2.8% of other ethnic origin, and 0.4% had an unidentified ethnic origin. Based on self-reports, 40.3% of the offenders have no history of abuse, 15.7% have a history of sexual abuse only, 12.9% have a history of physical abuse only, and 31.0% have a history of both sexual and physical abuse.

Table 1

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>n</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>African American</td>
<td>163</td>
<td>65.7</td>
</tr>
<tr>
<td>European American</td>
<td>77</td>
<td>31.0</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>2.8</td>
</tr>
<tr>
<td>Undetermined</td>
<td>1</td>
<td>0.4</td>
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</table>

<table>
<thead>
<tr>
<th>History of Abuse</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>100</td>
<td>40.3</td>
</tr>
<tr>
<td>Sexual Abuse Only</td>
<td>39</td>
<td>15.7</td>
</tr>
<tr>
<td>Physical Abuse Only</td>
<td>32</td>
<td>12.9</td>
</tr>
<tr>
<td>Sexual and Physical Abuse</td>
<td>77</td>
<td>31.0</td>
</tr>
</tbody>
</table>

As described previously, the intergenerational hypothesis provides a possible explanation for the development of sex offending behavior. Since no non-sex offender
group is included in the data set, the type of abuse was tested against the severity of the offenses. Specifically, this study tests whether juvenile sex offenders, who were sexually abused as children, are more likely to exhibit more severe or serious behaviors. Three groups of offenders are compared: (a) offenders that experienced sexual abuse either alone or in combination with physical abuse, (b) offenders that experienced physical abuse only, and (c) offenders that did not experience any abuse in childhood. As summarized in Table 2, most variables exhibited similar patterns across groups.

The participants’ arrest histories were also analyzed by type of reported abuse. Interestingly, they did not have extensive arrest histories at the time that data were collected. No significant group differences were found in either the number of sexual or nonsexual arrests based on abuse history. A key finding, however, was the juvenile offenders with sexual abuse histories began their sex offenses at an earlier age than those with no abuse history. A non-significant trend was also observed for those with physical abuse only.

Differences in juvenile offenders with abuse histories were examined in detail. Because physical abuse alone played no significant role, Table 3 examines sexual abuse versus no abuse. In addition, types of offenses was distilled into those acts excluding or including penetration; however no differences were found. Willingness to acknowledge all sexually deviant behavior is important to denial intervention. For the number of sexual assaults we used the three categories reported in the archival data set, which produced non-significant results.
### Table 2

*Comparison of Participants with and without a History of Sexual Abuse on Background and Criminological Variables*

<table>
<thead>
<tr>
<th></th>
<th>Sexual with or without Physical Abuse</th>
<th>Physical Abuse Only</th>
<th>No History of Abuse</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Age</td>
<td>14.97&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1.40</td>
<td>14.84&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1.19</td>
<td>15.14&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>IQ</td>
<td>93.73&lt;sub&gt;a&lt;/sub&gt;</td>
<td>12.57</td>
<td>94.04&lt;sub&gt;a&lt;/sub&gt;</td>
<td>10.62</td>
<td>90.96&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>Education</td>
<td>8.77&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1.52</td>
<td>8.70&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1.42</td>
<td>8.73&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>Nonsexual Arrests</td>
<td>1.09&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1.67</td>
<td>1.26&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1.75</td>
<td>1.55&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>Sexual Arrests</td>
<td>0.68&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.54</td>
<td>0.81&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.48</td>
<td>0.80&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>Age of First Sexual Offense</td>
<td>12.86&lt;sub&gt;a&lt;/sub&gt;</td>
<td>2.50</td>
<td>13.40&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>1.87</td>
<td>13.85&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

*Note: Based on Duncan's multiple range tests, groups with the same subscript are not significantly different.*

Table 3

Comparison of Participants With and Without a History of Sexual Abuse on Offense

Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Sexual Abuse</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Type of Offense</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penetration</td>
<td>71</td>
<td>53.0</td>
</tr>
<tr>
<td>No Penetration</td>
<td>43</td>
<td>53.8</td>
</tr>
<tr>
<td>Number of Admitted Sexual Offenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>46</td>
<td>55.4</td>
</tr>
<tr>
<td>Some</td>
<td>32</td>
<td>43.8</td>
</tr>
<tr>
<td>All</td>
<td>36</td>
<td>64.3</td>
</tr>
<tr>
<td>Number of Sexual Assaults Committed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Assault</td>
<td>36</td>
<td>48.6</td>
</tr>
<tr>
<td>2-5 Assaults</td>
<td>40</td>
<td>50.6</td>
</tr>
<tr>
<td>&gt;5 Assaults</td>
<td>40</td>
<td>63.5</td>
</tr>
</tbody>
</table>

Research Question 1

The first research question addresses the factor structure of the PPG with a juvenile sex offending population. Understanding the factor structure of the PPG allows for higher order interpretations of the data and potentially, the development of
individualized treatment of deviant sexual interests. A principal component analysis (PCA) with a direct oblimin rotation was conducted to examine the PPG factor structure. Because this was not theoretically driven, Tabachnick and Fidell (1989) indicated the PCA is the best method of factor extraction. In choosing a rotation method both orthogonal and oblique rotations were evaluated. An oblique rotation was selected because the PPG content is believed to be related; Costello and Osborne (2005) indicated correlation of factors are expected in the social sciences because constructs do not function independently of each other. The oblimin rotation was chosen to minimize cross products of factor loadings.

Several factor solutions were computed in order to find the solution that had the best fit. The two-factor solution yielded only two unique loadings with the remaining variables being cross loaded. The four-factor solution did not yield a viable solution because the eigen value for the fourth factor dropped below one.

The three-factor solution was found to be optimal; it accounts for 68.9% of the variance with only three cross-loadings. The factors were identified using the pattern matrix (Tabachnick & Fidell, 1989). The unique relationship between the variables and each factor were analyzed when the loading on the factor was at .40 or higher. The three factors and their unique variables are present in Table 4.

The first factor, Arousal to Male Stimuli, accounted for 52.1% of the variance. This factor consists of six variables with very high loadings (≥ .70). These variables assess the level of sexual arousal that the juvenile sex offenders experience when exposed to sexually explicit scenarios with males of varying ages (from 6 years old to
adults), degrees of force (consensual and forced), and relationship to victim (related or stranger).

**Table 4**

*The Principal Factor Analysis Three Factor Solution of the Penile Plethysmography with a Juvenile Sex Offender Population*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Forced sex with a male peer</td>
<td>.92</td>
<td>-.04</td>
<td>-.02</td>
</tr>
<tr>
<td>2. Forced sex with a 6-7 year old male</td>
<td>.91</td>
<td>-.03</td>
<td>.01</td>
</tr>
<tr>
<td>3. Consensual sex with a male peer</td>
<td>.85</td>
<td>.01</td>
<td>.00</td>
</tr>
<tr>
<td>4. Sex with a male relative</td>
<td>.75</td>
<td>-.05</td>
<td>.21</td>
</tr>
<tr>
<td>5. Consensual sex with a 10-11 year old male</td>
<td>.73</td>
<td>.05</td>
<td>.23</td>
</tr>
<tr>
<td>6. Forced sex with a 10-11 year old male</td>
<td>.70</td>
<td>.06</td>
<td>.25</td>
</tr>
<tr>
<td>7. Forced sex with a 6-7 year old female</td>
<td>.58</td>
<td>.46</td>
<td>-.20</td>
</tr>
<tr>
<td>8. Sex with a female relative</td>
<td>.56</td>
<td>.41</td>
<td>-.05</td>
</tr>
<tr>
<td>9. Forced sex with a 10-11 year old female</td>
<td>.54</td>
<td>.49</td>
<td>-.15</td>
</tr>
<tr>
<td>10 Consensual sex with a female peer</td>
<td>-.22</td>
<td>.85</td>
<td>.10</td>
</tr>
<tr>
<td>11. Frottage with a female</td>
<td>.08</td>
<td>.79</td>
<td>-.15</td>
</tr>
<tr>
<td>12. Forced sex with a female peer</td>
<td>.01</td>
<td>.79</td>
<td>.15</td>
</tr>
<tr>
<td>13. Voyeurism with a female</td>
<td>.14</td>
<td>.73</td>
<td>-.09</td>
</tr>
<tr>
<td>14. Forced sex with an adult female</td>
<td>.04</td>
<td>.68</td>
<td>.23</td>
</tr>
<tr>
<td>15. Consensual sex with a 10-11 year old female</td>
<td>.13</td>
<td>.66</td>
<td>.12</td>
</tr>
<tr>
<td>16. Exhibitionism with a female</td>
<td>.18</td>
<td>.53</td>
<td>.30</td>
</tr>
<tr>
<td>17. Spending time with friends</td>
<td>.03</td>
<td>.14</td>
<td>.82</td>
</tr>
<tr>
<td>18. Physical aggression against a female</td>
<td>.09</td>
<td>.23</td>
<td>.72</td>
</tr>
<tr>
<td>19. Physical Aggression against a male</td>
<td>.33</td>
<td>-.06</td>
<td>.52</td>
</tr>
<tr>
<td>Mean Factor Loading</td>
<td>.81</td>
<td>.72</td>
<td>.69</td>
</tr>
</tbody>
</table>

*Note.* Unique and substantial loadings (≥ .40) are presented in bold.

The second factor is the Arousal to Females and Paraphilias factor. This factor, accounting for 9.9% of the variance, includes seven variables with moderate to high loadings. This factor focused on a range of sexual activities with peer or adult females. It also includes three paraphilias (frottage, voyeurism, and exhibitionism) with females of unspecified ages. Only one item involved peer adolescents in consensual sexual activities.
The third factor, Arousal to Nonsexual Acts, accounts for 6.9% of the variance. This factor consists of three variables with moderate to high loadings. These variables assess the level of sexual arousal experienced by the juvenile sex offenders when presented with scenarios depicting nonsexual aggression against both males and females and a scenario with the participants’ and their friends “hanging out.”

The three cross-loaded variables involve sexual encounters with young females. The variables include descriptions of forced sexual contact with females between the ages of six and eleven and incestual sexual contact. These variables cross-load with Factors 1 and 2. These cross-loaded variables fit with aspects of both of the first two factors in that they involve sexual deviance and sexual violence (Factor 1) and they are with females (Factor 2).

Research Question 2

The second research question is regarding the internal consistency of the PPG with a population of juvenile sex offenders. DeVellis (2003) indicates that Cronbach’s (1951) coefficient alpha is used as the standard measure to calculate internal consistency. According to Clark and Watson (1995), internal consistency supplemented by inter-item correlations affords a good measure of scale homogeneity.

Alpha coefficients and mean inter-item correlations were calculated for the entire measure and for each of the three factor scales. Clark and Watson (1995) suggested that mean inter-item correlations below .15 or above .50 could impact scale homogeneity. In the current the mean inter-items correlations are higher than desired indicating that the PPG scales have some redundancy. The majority of the alpha
coefficients for the PPG were robust and ranged from .79 to .95. The mean inter-item correlations were moderate to high, ranging from .51 to .76. The alpha for the entire scale is .95 and the inter-item correlation is .51. The overall alpha coefficient and moderate inter-item correlations indicates that the PPG is a homogenous and unidimensional scale when used with a juvenile sex offending population.

Table 5

*Alpha Coefficients and Mean Inter-Item Correlations for Penile Plethysmography Scales*

<table>
<thead>
<tr>
<th>Scale</th>
<th># of items</th>
<th>Alpha</th>
<th>$M$ inter-item $r$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Arousal to Male Stimuli</td>
<td>6</td>
<td>.94</td>
<td>.76</td>
</tr>
<tr>
<td>2. Arousal to Females and Paraphilias</td>
<td>7</td>
<td>.90</td>
<td>.62</td>
</tr>
<tr>
<td>3. Arousal to Non Sexual Acts</td>
<td>3</td>
<td>.79</td>
<td>.70</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>.95</td>
<td>.51</td>
</tr>
</tbody>
</table>

*Note.* None of the inter-item correlations were below .15.

**Research Question 3**

The third research question addresses the predictive validity of the PPG in distinguishing juvenile sex offenders who admit to all of their offenses and those who admit to some of their offenses. No theory was being tested so a stepwise discriminant function analysis (DFA) was used (Tabachnick & Fidell, 1989).

A stepwise DFA was conducted with level of admitting (i.e., admits all offenses or admits some offenses) as the dependent variable and the nineteen PPG scales as the independent variables. The discriminant function was significant ($p \leq .001$) with a Wilk’s lambda of .83. The correlations of each of the PPG variables to the discriminant function
are indicated in the structure matrix, (see Table 6), three variables discriminated between the criterion groups: (a) “sex with a male relative” (.64), (b) “forced sex with an adult female” (.53), and (c) the lack of arousal to “consensual sex with a female peer” (-.28). Full admitters tended to score higher on (a) and (b) and lower on (c).

Table 6

Structure Matrix of the Classification of Admitters and Partial Admitters Based on PPG Data

<table>
<thead>
<tr>
<th></th>
<th>Structure Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex with a male relative</td>
<td>.64*</td>
</tr>
<tr>
<td>Forced sex with an adult female</td>
<td>.53*</td>
</tr>
<tr>
<td>Consensual sex with a male peer</td>
<td>.52</td>
</tr>
<tr>
<td>Consensual sex with a 10-11 year old male</td>
<td>.51</td>
</tr>
<tr>
<td>Forced sex with a 10-11 year old male</td>
<td>.50</td>
</tr>
<tr>
<td>Forced sex with a 6-7 year old male</td>
<td>.49</td>
</tr>
<tr>
<td>Forced sex with a male peer</td>
<td>.44</td>
</tr>
<tr>
<td>Sex with a female relative</td>
<td>.41</td>
</tr>
<tr>
<td>Forced sex with a 6-7 year old female</td>
<td>.39</td>
</tr>
<tr>
<td>Exhibitionism with a female</td>
<td>.38</td>
</tr>
<tr>
<td>Physical aggression against a female</td>
<td>.36</td>
</tr>
<tr>
<td>Forced sex with a 10-11 year old female</td>
<td>.35</td>
</tr>
<tr>
<td>Spending time with friends</td>
<td>.28</td>
</tr>
<tr>
<td>Physical Aggression against a male</td>
<td>.27</td>
</tr>
<tr>
<td>Consensual sex with a 10-11 year old female</td>
<td>.20</td>
</tr>
<tr>
<td>Forced sex with a female peer</td>
<td>.17</td>
</tr>
<tr>
<td>Voyeurism with a female</td>
<td>.15</td>
</tr>
<tr>
<td>Frottage with a female</td>
<td>.09</td>
</tr>
<tr>
<td>Consensual sex with a female peer</td>
<td>-.28*</td>
</tr>
</tbody>
</table>

Note. Functions at Group Centroids – Admits all sexual offenses = .51, Admits some sexual offenses = -.39.
Accounts for 17.7% of the variance.
*Variables entered in the analysis.

A benefit of using a DFA is its ability to estimate classification accuracy (Tabachnick & Fidell, 1989). Using the classifications provided utility estimates were calculated and are illustrated in Table 7. The sensitivity and specificity of the PPG were
computed at .68 and .72 respectively. Although only 68% of the fully admitting
participants are correctly identified as full admitters, the DFA was slightly better able to
identify the partial admitters (72%). The positive predictive power (PPP) and negative
predictive power (NPP) were also calculated and are .65 and .75 respectively. Similar to
the sensitivity and specificity finding, the PPP is not the best indicator as it
miscategorized 35% of the participants that are fully admitting. None the less it may
have some clinical value because this group is very difficult to identify clinically.

Table 7

*DFA Data for Full Admitters Versus Partial Admitters on the PPG*

<table>
<thead>
<tr>
<th>PPG Scores</th>
<th>Independent Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Admitters</td>
</tr>
<tr>
<td>Full Admitters</td>
<td>39</td>
</tr>
<tr>
<td>Partial Admitters</td>
<td>18</td>
</tr>
</tbody>
</table>

Utility estimates derived from Table 7 are summarized:

- Sensitivity = 68%
- Specificity = 72%
- PPP = 65%
- NPP = 75%

Most of the significant differences involved inappropriate sexual relations with males.

Incestuous relations and forced sex with a 10-11 year old male produced moderate to
large effect sizes. Forced sex with an adult female produced a moderate effect size
(.47) with nearly significant findings for forced sex with younger females. Overall, the
denial of some sexual deviations resulted in a suppression of PPG scores.
## Table 8

*Differences Between Full Admitters and Partial Admitters on PPG Scores*

<table>
<thead>
<tr>
<th></th>
<th>Admit All Offenses</th>
<th></th>
<th>Admit Some Offenses</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>F</td>
<td>p</td>
<td>d</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consensual sex with a 10-11 year old male</td>
<td>40.17</td>
<td>23.19</td>
<td>29.20</td>
<td>24.10</td>
<td>7.05</td>
<td>.009</td>
<td>.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consensual sex with a male peer</td>
<td>36.36</td>
<td>25.54</td>
<td>28.50</td>
<td>23.20</td>
<td>3.46</td>
<td>.07</td>
<td>.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex with a male relative</td>
<td>35.88</td>
<td>24.60</td>
<td>23.46</td>
<td>20.25</td>
<td>10.23</td>
<td>.002</td>
<td>.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forced sex with a 6-7 year old male</td>
<td>35.14</td>
<td>22.64</td>
<td>25.96</td>
<td>22.27</td>
<td>5.51</td>
<td>.02</td>
<td>.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forced sex with a 10-11 year old male</td>
<td>33.95</td>
<td>23.54</td>
<td>27.36</td>
<td>22.62</td>
<td>2.70</td>
<td>.10</td>
<td>.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forced sex with a male peer</td>
<td>34.72</td>
<td>25.15</td>
<td>29.87</td>
<td>23.84</td>
<td>1.30</td>
<td>.26</td>
<td>.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical aggression against a male</td>
<td>12.47</td>
<td>10.23</td>
<td>12.70</td>
<td>11.10</td>
<td>.02</td>
<td>.90</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consensual sex with a 10-11 year old female</td>
<td>51.03</td>
<td>24.52</td>
<td>43.51</td>
<td>25.96</td>
<td>2.90</td>
<td>.09</td>
<td>.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consensual sex with a female peer</td>
<td>47.97</td>
<td>24.16</td>
<td>53.92</td>
<td>24.38</td>
<td>1.98</td>
<td>.16</td>
<td>.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex with a female relative</td>
<td>44.66</td>
<td>23.92</td>
<td>36.29</td>
<td>26.73</td>
<td>3.53</td>
<td>.06</td>
<td>.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forced sex with a 6-7 year old female</td>
<td>45.07</td>
<td>24.14</td>
<td>36.82</td>
<td>25.44</td>
<td>3.62</td>
<td>.06</td>
<td>.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forced sex with a 10-11 year old female</td>
<td>44.55</td>
<td>22.47</td>
<td>38.71</td>
<td>25.29</td>
<td>1.93</td>
<td>.17</td>
<td>.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forced sex with a female peer</td>
<td>45.36</td>
<td>24.80</td>
<td>42.13</td>
<td>27.16</td>
<td>.50</td>
<td>.50</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical aggression against a female</td>
<td>19.29</td>
<td>17.42</td>
<td>16.87</td>
<td>14.01</td>
<td>.79</td>
<td>.36</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forced sex with an adult female</td>
<td>51.14</td>
<td>25.57</td>
<td>38.77</td>
<td>26.48</td>
<td>7.28</td>
<td>.008</td>
<td>.47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spending time with friends</td>
<td>15.23</td>
<td>13.50</td>
<td>14.31</td>
<td>13.85</td>
<td>.146</td>
<td>.70</td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exhibitionism with a female</td>
<td>41.58</td>
<td>25.10</td>
<td>34.67</td>
<td>23.84</td>
<td>2.60</td>
<td>.11</td>
<td>.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frottage with a female</td>
<td>46.54</td>
<td>25.56</td>
<td>43.13</td>
<td>25.84</td>
<td>.57</td>
<td>.45</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voyeurism with a female</td>
<td>45.49</td>
<td>23.69</td>
<td>36.79</td>
<td>24.32</td>
<td>4.24</td>
<td>.04</td>
<td>.36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Supplementary Analyses

As a supplementary analysis, the usefulness of specific sexual stimuli was explored in relation the age and gender of their known victims (see Table 9). Several findings stand out particularly regarding offenders with female victims twelve years and older. These offenders generally showed lower levels of arousal than those with male victims or younger victims irrespective of gender. In the scenarios involving forced sex with male victims, this group often had much lower scores, with PPG levels < 20.0. As expected, most of their scores with female victims were similar to other groups.

A critical issue is whether the PPG can be used to detect offenders’ gender preference for victims. Please remember that the “male victim” category, as grouped in the archival data may also include female victims. To detect differences between arousal levels to particular stimuli, high (≥ 50% of full erection) and low (≤ 20% of full erection) PPG scores are evaluated (see Table 10). The findings indicate that a greater percentage of offenders with male victims exhibit high levels of arousal to sexual scenarios with males than those with no male victims. More specifically, 22.7% to 30.9% had high arousal levels compared to 8.6% to 13.9%. While there differences are encouraging, one possible explanation for the limited differences is that more than one-third of offenders with male victims were able to suppress their arousal to male stimuli.

Use of the PPG female stimuli were ineffective in distinguishing between the two groups. However, this non-significance likely reflects a methodological artifact, namely the inclusion of female victims in the “male” group.
### Table 9

**Differences on the PPG Results Based on the Age and Gender of Victim**

<table>
<thead>
<tr>
<th></th>
<th>Ages ≤ 5</th>
<th>Ages 6-11</th>
<th>Ages ≥ 12</th>
<th>Multiple Age Groups</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(n = 36)</td>
<td>(n = 16)</td>
<td>(n = 49)</td>
<td>(n = 31)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consensual sex with a</td>
<td>28.94&lt;sub&gt;a&lt;/sub&gt;</td>
<td>27.81&lt;sub&gt;a&lt;/sub&gt;</td>
<td>25.51&lt;sub&gt;a&lt;/sub&gt;</td>
<td>33.45&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>22.00&lt;sub&gt;a&lt;/sub&gt;</td>
<td>32.22&lt;sub&gt;ab&lt;/sub&gt;</td>
</tr>
<tr>
<td>Consensual sex with a</td>
<td>26.19&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>24.50&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>25.24&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>37.35&lt;sub&gt;bc&lt;/sub&gt;</td>
<td>19.66&lt;sub&gt;b&lt;/sub&gt;</td>
<td>28.44&lt;sub&gt;ab&lt;/sub&gt;</td>
</tr>
<tr>
<td>Sex with a male relative</td>
<td>23.69&lt;sub&gt;ac&lt;/sub&gt;</td>
<td>24.50&lt;sub&gt;ac&lt;/sub&gt;</td>
<td>20.27&lt;sub&gt;ac&lt;/sub&gt;</td>
<td>35.74&lt;sub&gt;b&lt;/sub&gt;</td>
<td>14.90&lt;sub&gt;c&lt;/sub&gt;</td>
<td>27.33&lt;sub&gt;ab&lt;/sub&gt;</td>
</tr>
<tr>
<td>Forced sex with a 6-7 year</td>
<td>26.67&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>25.06&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>19.29&lt;sub&gt;b&lt;/sub&gt;</td>
<td>32.45&lt;sub&gt;bc&lt;/sub&gt;</td>
<td>18.14&lt;sub&gt;b&lt;/sub&gt;</td>
<td>32.93&lt;sub&gt;ab&lt;/sub&gt;</td>
</tr>
<tr>
<td>old male</td>
<td>(20.88)</td>
<td>(21.61)</td>
<td>(15.86)</td>
<td>(25.03)</td>
<td>(12.47)</td>
<td>(23.02)</td>
</tr>
<tr>
<td>Forced sex with a 10-11 year</td>
<td>25.67&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>30.25&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>23.94&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>31.55&lt;sub&gt;b&lt;/sub&gt;</td>
<td>18.90&lt;sub&gt;b&lt;/sub&gt;</td>
<td>30.85&lt;sub&gt;ab&lt;/sub&gt;</td>
</tr>
<tr>
<td>Forced sex with a male peer</td>
<td>28.56&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>26.25&lt;sub&gt;abc&lt;/sub&gt;</td>
<td>22.31&lt;sub&gt;ac&lt;/sub&gt;</td>
<td>35.58&lt;sub&gt;b&lt;/sub&gt;</td>
<td>16.00&lt;sub&gt;c&lt;/sub&gt;</td>
<td>32.11&lt;sub&gt;ab&lt;/sub&gt;</td>
</tr>
<tr>
<td>Physical aggression against</td>
<td>11.72&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>8.94&lt;sub&gt;a&lt;/sub&gt;</td>
<td>9.59&lt;sub&gt;a&lt;/sub&gt;</td>
<td>13.29&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>8.83&lt;sub&gt;a&lt;/sub&gt;</td>
<td>16.30&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
<tr>
<td>a male</td>
<td>(9.41)</td>
<td>(5.52)</td>
<td>(7.25)</td>
<td>(11.65)</td>
<td>(5.26)</td>
<td>(10.25)</td>
</tr>
<tr>
<td>Consensual sex with a 10-11</td>
<td>45.67&lt;sub&gt;a&lt;/sub&gt;</td>
<td>48.38&lt;sub&gt;a&lt;/sub&gt;</td>
<td>40.10&lt;sub&gt;a&lt;/sub&gt;</td>
<td>43.03&lt;sub&gt;a&lt;/sub&gt;</td>
<td>39.07&lt;sub&gt;a&lt;/sub&gt;</td>
<td>48.93&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>year old female</td>
<td>(24.11)</td>
<td>(25.04)</td>
<td>(21.21)</td>
<td>(26.87)</td>
<td>(27.94)</td>
<td>(23.59)</td>
</tr>
<tr>
<td>Consensual sex with a female</td>
<td>46.81&lt;sub&gt;a&lt;/sub&gt;</td>
<td>48.81&lt;sub&gt;a&lt;/sub&gt;</td>
<td>49.65&lt;sub&gt;a&lt;/sub&gt;</td>
<td>44.29&lt;sub&gt;a&lt;/sub&gt;</td>
<td>48.55&lt;sub&gt;a&lt;/sub&gt;</td>
<td>54.04&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>peer</td>
<td>(22.51)</td>
<td>(24.10)</td>
<td>(24.56)</td>
<td>(22.63)</td>
<td>(28.17)</td>
<td>(28.20)</td>
</tr>
<tr>
<td>Sex with a female relative</td>
<td>37.36&lt;sub&gt;a&lt;/sub&gt;</td>
<td>43.44&lt;sub&gt;a&lt;/sub&gt;</td>
<td>32.45&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>41.65&lt;sub&gt;a&lt;/sub&gt;</td>
<td>41.65&lt;sub&gt;a&lt;/sub&gt;</td>
<td>42.96&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>For forced sex with a 6-7 year old female</td>
<td>38.00&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>42.13&lt;sub&gt;a&lt;/sub&gt;</td>
<td>36.41&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>40.06&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>26.38&lt;sub&gt;b&lt;/sub&gt;</td>
<td>44.52&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>For forced sex with a 10-11 year old female</td>
<td>39.97&lt;sub&gt;a&lt;/sub&gt;</td>
<td>40.63&lt;sub&gt;a&lt;/sub&gt;</td>
<td>36.55&lt;sub&gt;a&lt;/sub&gt;</td>
<td>41.48&lt;sub&gt;a&lt;/sub&gt;</td>
<td>31.69&lt;sub&gt;a&lt;/sub&gt;</td>
<td>42.70&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 9 (continued)

<table>
<thead>
<tr>
<th></th>
<th>Ages ≤ 5</th>
<th>Ages 6-11</th>
<th>Ages ≥ 12&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Multiple Age Groups</th>
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</thead>
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<tr>
<td></td>
<td>Female &lt;i&gt;(n = 36)&lt;/i&gt;</td>
<td>Male &lt;i&gt;(n = 16)&lt;/i&gt;</td>
<td>Female &lt;i&gt;(n = 49)&lt;/i&gt;</td>
<td>Male &lt;i&gt;(n = 31)&lt;/i&gt;</td>
</tr>
<tr>
<td>Forced sex with a female peer</td>
<td>46.36&lt;sub&gt;a&lt;/sub&gt; (24.42)</td>
<td>45.56&lt;sub&gt;ab&lt;/sub&gt; (26.00)</td>
<td>40.55&lt;sub&gt;ab&lt;/sub&gt; (23.41)</td>
<td>38.13&lt;sub&gt;ab&lt;/sub&gt; (26.18)</td>
</tr>
<tr>
<td>Physical aggression against a female</td>
<td>17.14&lt;sub&gt;ab&lt;/sub&gt; (10.78)</td>
<td>14.88&lt;sub&gt;ab&lt;/sub&gt; (11.55)</td>
<td>15.76&lt;sub&gt;ab&lt;/sub&gt; (12.78)</td>
<td>14.58&lt;sub&gt;ab&lt;/sub&gt; (13.79)</td>
</tr>
<tr>
<td>Forced sex with an adult female</td>
<td>40.53&lt;sub&gt;a&lt;/sub&gt; (24.29)</td>
<td>40.50&lt;sub&gt;a&lt;/sub&gt; (27.62)</td>
<td>41.73&lt;sub&gt;a&lt;/sub&gt; (25.48)</td>
<td>45.81&lt;sub&gt;a&lt;/sub&gt; (26.61)</td>
</tr>
<tr>
<td>Neutral - Spending time with friends</td>
<td>15.17&lt;sub&gt;ab&lt;/sub&gt; (13.27)</td>
<td>13.81&lt;sub&gt;ab&lt;/sub&gt; (11.82)</td>
<td>10.35&lt;sub&gt;a&lt;/sub&gt; (7.40)</td>
<td>12.97&lt;sub&gt;a&lt;/sub&gt; (9.70)</td>
</tr>
<tr>
<td>Exhibitionism with a female</td>
<td>32.72&lt;sub&gt;a&lt;/sub&gt; (20.72)</td>
<td>36.06&lt;sub&gt;a&lt;/sub&gt; (24.38)</td>
<td>31.90&lt;sub&gt;a&lt;/sub&gt; (20.80)</td>
<td>41.97&lt;sub&gt;a&lt;/sub&gt; (26.85)</td>
</tr>
<tr>
<td>Frottage with a female</td>
<td>40.36&lt;sub&gt;a&lt;/sub&gt; (23.87)</td>
<td>44.69&lt;sub&gt;a&lt;/sub&gt; (29.26)</td>
<td>42.73&lt;sub&gt;a&lt;/sub&gt; (26.81)</td>
<td>47.16&lt;sub&gt;a&lt;/sub&gt; (29.95)</td>
</tr>
<tr>
<td>Voyeurism with a female</td>
<td>37.94&lt;sub&gt;a&lt;/sub&gt; (24.17)</td>
<td>43.31&lt;sub&gt;a&lt;/sub&gt; (27.80)</td>
<td>35.19&lt;sub&gt;a&lt;/sub&gt; (23.47)</td>
<td>39.71&lt;sub&gt;a&lt;/sub&gt; (27.50)</td>
</tr>
</tbody>
</table>

Note: a Only offenders with female victims scores were included because the N for male victims was too low.

a b c ab bc abc Duncan’s post hoc tests, each letter is statistically different from the others at <i>p</i> < .05.
Table 10

*Differences High Versus Low Percentages of Erection on the PPG for Juvenile Sex Offenders with and without Male Victims*

<table>
<thead>
<tr>
<th>Male Stimuli</th>
<th>Male victims</th>
<th>No Male Victims</th>
<th>(\chi^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (%)</td>
<td>High (%)</td>
<td>Low (%)</td>
</tr>
<tr>
<td>Forced sex with a 6-7 year old male</td>
<td>40.2</td>
<td>22.7</td>
<td>49.7</td>
</tr>
<tr>
<td>Sex with a male relative</td>
<td>38.1</td>
<td>24.7</td>
<td>58.9</td>
</tr>
<tr>
<td>Consensual sex with a 10-11 year old male</td>
<td>33.0</td>
<td>27.8</td>
<td>47.0</td>
</tr>
<tr>
<td>Forced sex with a 10-11 year old male</td>
<td>38.1</td>
<td>22.7</td>
<td>50.3</td>
</tr>
<tr>
<td>Consensual sex with a male peer</td>
<td>35.1</td>
<td>30.9</td>
<td>53.0</td>
</tr>
<tr>
<td>Forced sex with a male peer</td>
<td>35.1</td>
<td>24.7</td>
<td>48.3</td>
</tr>
<tr>
<td>Average</td>
<td>36.6</td>
<td>25.6</td>
<td>51.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Female Stimuli</th>
<th>Male victims</th>
<th>No Male Victims</th>
<th>(\chi^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (%)</td>
<td>High (%)</td>
<td>Low (%)</td>
</tr>
<tr>
<td>Forced sex with a 6-7 year old female</td>
<td>26.8</td>
<td>35.1</td>
<td>29.8</td>
</tr>
<tr>
<td>Sex with a female relative</td>
<td>24.7</td>
<td>35.1</td>
<td>35.8</td>
</tr>
<tr>
<td>Consensual sex with a 10-11 year old female</td>
<td>18.6</td>
<td>44.3</td>
<td>21.2</td>
</tr>
<tr>
<td>Forced sex with a 10-11 year old female</td>
<td>22.7</td>
<td>37.1</td>
<td>26.5</td>
</tr>
<tr>
<td>Consensual sex with a female peer</td>
<td>13.4</td>
<td>46.4</td>
<td>13.2</td>
</tr>
<tr>
<td>Forced sex with a female peer</td>
<td>20.6</td>
<td>35.1</td>
<td>25.8</td>
</tr>
<tr>
<td>Forced sex with an adult female</td>
<td>24.7</td>
<td>41.2</td>
<td>26.5</td>
</tr>
<tr>
<td>Average</td>
<td>21.6</td>
<td>39.2</td>
<td>25.5</td>
</tr>
</tbody>
</table>

* The chi-square is significant at \(*p < .05, **p < .01, ***p < .001.\)

Note. Low = percentage of people with \(\leq 20\%\) of full erection; High = percentage of people with \(\geq 50\%\) of full erection.

Research (e.g., Davis & Leitenberg, 1987; Fehrenbach et al., 1986; Hunter et al., 2003; Kahn & Lafond, 1988) indicates that age of victim is usually a major factor in differentiating between types of adult offenders (e.g., child molesters versus rapists), this distinction is seen to a lesser degree with these juvenile sex offenders. The overall trend is for a greater proportion of offenders with younger victims to be in the high group than those without younger victims. However, only one scale (forced sex with a 6-7 year old female) reached statistical significance.
Peer and adult stimuli produced several unexpected findings when applied to offenders with younger versus older victims. Offenders with younger victims had a larger percentage than their older-victim counter parts across all the stimuli. Significant findings included sex with relatives and forced sex with peers. One possible interpretation is that offenders with younger victims may have a general arousal pattern to deviant stimuli.

Table 11

| Differences in the PPG for Juvenile Sex Offenders with Younger Versus Older Victims |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                | Victims 11 and  | Victims 12 and  |                 |                 |                 |                 |                 |
|                                | Younger         | Older           |                 |                 |                 |                 |                 |
| **Child Stimuli**              | Low (%)         | High (%)        | Low (%)         | High (%)        | $\chi^2$        | Low (%)         | High (%)        | $\chi^2$        |
| Forced sex with a 6-7 year old male | 44.5            | 15.3            | 55.6            | 8.3             | 2.00            |                 |                 |                 |
| Forced sex with a 6-7 year old female | 26.3            | 34.0            | 38.9            | 13.9            | 6.14*           |                 |                 |                 |
| Consensual sex with a 10-11 year old male | 38.8            | 21.1            | 58.3            | 8.3             | 5.79            |                 |                 |                 |
| Consensual sex with a 10-11 year old female | 18.7            | 41.6            | 27.8            | 36.1            | 1.06            |                 |                 |                 |
| Forced sex with a 10-11 year old male | 44.0            | 19.1            | 52.8            | 8.3             | 2.60            |                 |                 |                 |
| Forced sex with a 10-11 year old female | 24.4            | 32.5            | 25.0            | 27.8            | 0.35            |                 |                 |                 |
| Average                        | 32.8            | 27.3            | 43.1            | 17.1            |                 |                 |                 |                 |

| **Peer and Adult Stimuli**      | Victims 11 and  | Victims 12 and  |                 |                 |                 |                 |                 |
|                                | Younger         | Older           |                 |                 |                 |                 |                 |
|                                | Low (%)         | High (%)        | Low (%)         | High (%)        | $\chi^2$        | Low (%)         | High (%)        | $\chi^2$        |
| Consensual sex with a male peer | 44.0            | 21.1            | 61.1            | 13.9            | 3.62            |                 |                 |                 |
| Consensual sex with a female peer | 12.9            | 46.9            | 13.9            | 47.2            | 0.36            |                 |                 |                 |
| Sex with a male relative       | 47.8            | 16.7            | 69.4            | 5.6             | 6.34*           |                 |                 |                 |
| Sex with a female relative     | 29.2            | 31.6            | 47.2            | 13.9            | 6.46*           |                 |                 |                 |
| Forced sex with a male peer   | 39.2            | 18.7            | 63.9            | 5.6             | 8.52**          |                 |                 |                 |
| Forced sex with a female peer | 20.1            | 38.8            | 44.4            | 25.0            | 10.14**         |                 |                 |                 |
| Forced sex with an adult female | 23.4            | 37.8            | 41.7            | 30.6            | 5.34            |                 |                 |                 |
| Average                        | 30.9            | 30.2            | 48.8            | 20.3            |                 |                 |                 |                 |

* The chi-square is significant at $^*p < .05$, $^{**}p < .01$.

Note. Low = percentage of offenders with $\leq$ 20% of full erection; High = percentage of offenders with $\geq$ 50% of full erection.
CHAPTER 4
DISCUSSION

The effective management of juvenile sex offenders is critically important to both mental health and criminal justice. According to Groth and Loredo (1981), approximately 50% of juvenile sex offenders will recidivate. When researchers realized the enormity of this problem, research on juvenile sex offenders burgeoned. The majority of this research has focused on understanding typologies and developing treatment plans (e.g., Becker et al., 1992; Becker, Kaplan, & Kavoussi, 1988; Hunter & Becker, 1994; Kahn & Lafond, 1988; Knight et al., 1989; O'Brien, 1985; O'Brien & Bera, 1986; Ryan & Lane, 1997; Worling, 2001). The assessment of factors underlying juvenile sex offenders’ behavior is a relatively new area of study within correctional and treatment contexts.

One major area that these assessments focus on is the levels and patterns of sexual arousal to deviant stimuli experienced and exhibited by offenders (Mcguire et al., 1965; Laulumiere & Quinsey, 1994). Research has indicated that sexual arousal to deviant stimuli and interest may play a key role in the initiation and maintenance of juvenile sex offending behavior. Varying methods have been used to evaluate deviant sexual interest and arousal. Standard methods for sexual arousal to deviant stimuli assessment include self report measures such as the MSI, an attentional measure (i.e., the AASI), and physiological measures such as the PPG. This study focused on assessment through the PPG, viewed by many researchers as the most promising of the assessment techniques used for evaluating sexual arousal to deviant stimuli since it does not rely on self report which is highly susceptible to faking (e.g., Becker et al.)
1992, Hunter et al., 1993; Kalmus & Beech, 2005). Although the PPG lacks some validation with adolescents, it appears to be a potentially valuable measure in assessing juvenile sex offenders.

Validation of the PPG has been a difficult task for researchers because there are no standard set of stimuli or uniform scoring method. Additionally, Hunter et al. (1993) indicate that the majority of the PPG research has been conducted with adults so the reliability and validity data on the PPG with juvenile sex offenders is particularly scarce since this is a difficult population to study. The present study investigates the validation of the PPG with a juvenile sex offending population. The validity and reliability of the PPG with this population were assessed as well as its clinical utility. The following sections discuss the role of abuse histories in the offender typologies, the reliability and validity of the PPG with a juvenile sex offending population, and the ability of the PPG to detect dissimulation.

Juvenile Sex Offender Etiology

A juvenile sex offender typology has been proposed by some, but the heterogeneous nature of these offenders has made classification and determination of the etiology of their behavior difficult (Becker et al., 1992; Cooper et al., 1996; Hunter & Becker, 1994; Ryan & Lane, 1997). Araji and Finkelhor (1986) and Ryan (1999) indicate that amongst the many possible variables, a history of childhood abuse is one of the most common variables believed to be linked to the causation of juvenile sex offending behavior.
Childhood Sexual Abuse

Prevalence

The intergenerational hypothesis proposes that juvenile sex offenders were victims of childhood sexual assault and so are repeating a pattern learned in childhood (Davis & Leitenberg, 1987; Freeman-Longo, 1986; Smith, 1988). This study tested an aspect of this hypothesis; that those offenders who experienced sexual abuse as children would exhibit more severe sexual offending behaviors than other offenders. The following paragraphs examine the current findings compared to other research.

Experiencing childhood sexual assault is the crux of the intergenerational hypothesis; therefore, this study compared offenders who experienced childhood sexual assault to those who did not. Nearly half (46.7%) of the present sample reported experiencing childhood sexual abuse. They were divided into those who experienced only childhood sexual abuse (15.7) and those who experienced both sexual and physical abuse (31.0%). Hunter et al. (2003) and Aylwin, Studer, Reddin, and Clelland (2003) reported child sexual assault rates of 75% and 77.9% respectively in a sample of juvenile sex offenders. These numbers differ significantly from the findings in our study. Differences between the current findings and their researcher may be due to differences in the samples used in analysis.

Hunter et al. (2003) analyzed 182 juvenile sex offenders, 67% of whom are European American and only 21% were African American which is opposite of our sample in which 65.5% are African American and 30.9% are European American. This disparity could account for some of the differences because as Murphy et al. (2001) indicate, European American participants are more likely to report sexual abuse.
histories than are African Americans. Additionally, nearly all (96%) of the Hunter et al. (2003) sample had victims under the age of 12 in contrast to the 69.1% of the current sample. This difference is noteworthy because research has suggested that those who commit child molestation are twice as likely to have been sexually abused as children (Worling, 1995).

Aylwin et al’s. (2003) study consisted of 103 juveniles who had previously been incarcerated and were hospitalized in an inpatient facility at the time of their assessment. The authors indicated that their inpatient sample committed more serious offenses than our sample which was drawn from an outpatient unit. Additionally, their sample consisted only of offenders who assaulted a child who are (a) 10 years old or younger and (b) at least 4 years younger than the offender. It differs from our sample with its wide range of ages.

Our findings are similar to those of The National Adolescent Perpetrator Network (as cited in Veneziano & Veneziano, 2002), who reviewed a national sample of adolescent sexual offenders in treatment and found that 40% of the offenders were sexually abused. The samples analyzed in their study ranged in age and victim of offender as well as in ethnicity; this more closely resembles the current sample than previously cited research. Given its national scope, the rates of sexual abuse found in the current study appear to be reasonable representations of the rates found among juvenile sex offenders in general. In summary, the overall finding is that even though all sexual offenders do not experience childhood sexual abuse as is posited by the intergenerational hypothesis, substantially more male sex offenders do experience childhood sexual abuse than do men in the general population whose abuse rates are
approximately 10% (Peters, Wyatt, & Finkelhor, 1986).

Severity of Behaviors

A corollary to the intergenerational hypothesis is that sexually abused juvenile sex offenders will commit more severe sexual acts than their non-abused counterparts. For the purpose of the current study, sexual acts involving penetration were designated as severe behaviors. In general, this corollary did not hold true.

The frequency of sexual assaults also did not differ between abused non-abused groups. However, a significant finding involved the age of first sexual offense. In the current study, offenders with sexual abuse histories began their offenses at a younger age than their non-abused counterparts. This finding was consistent with Cooper et al. (1996). Interestingly, offenders who experienced any type of abuse were more likely to deny all of their offenses while those who did not experience abuse were more likely to admit all of their offenses. This finding differs from that found by Cooper et al. (1996) that both abused and non-abused offenders were likely to admit all of their offenses.

Childhood Physical Abuse

Prevalence

Although the intergenerational hypothesis focuses on offenders with histories of childhood sexual abuse, much research (e.g., Cooper et al., 1996; Hunter et al., 2003; Veneziano & Veneziano, 2002) has indicated that a history of physical abuse may also play a role in the development of juvenile sex offending behavior. As stated above, samples of offenders who experienced only physical abuse were compared to offenders
who were sexually abused, and those who experienced no abuse. Our findings indicate that 42.9% of our sample experienced physical abuse (12.9% experienced only physical abuse and 31.0% experienced physical and sexual abuse). These findings substantially lower than both by Hunter et al. (2003) who reported physical abuse rates of 63.3% and Aylwin et al. (2003) who reported physical abuse rates of 65.0% (10.7% experienced only physical abuse and 54.3% experienced physical and sexual abuse).

Hunter et al's. (2003) analyses involved 182 juvenile sex offenders of whom 63.3% reported experiencing physical abuse. Their data are not broken down further in order to indicate if they experienced only physical abuse, or physical and sexual abuse. As stated previously, the current study had a different ethic composition. Aylwin et al. (2003) found rates of physical abuse only similar to the current study. Both studies found small numbers of juvenile sex offenders experience only childhood physical abuse (12.9% and 10.7% respectively). These findings suggest that physical abuse history by itself, does not appear to play a critical role for juvenile sex offenders.

Assessment Methods with Juvenile Sex Offenders

Recognizing that the effective management of juvenile sex offenders requires accurate evaluations has led to a surge in research on the assessment of juvenile sex offenders. Since assessment aids in the development of treatment and in determining treatment effectiveness, specialized assessment methods have developed to be used with juvenile sex offenders. These assessments have focused on several areas; cognitions, empathy, sexual arousal to deviant stimuli/interest, and recidivism. These areas are evaluated in addition to the general areas that are assessed with all offender
populations such as intelligence, abuse history, neurological functioning, and psychopathology.

Cognitions

Distorted cognitions are often an aspect of evaluation and treatment in juvenile sex offenders as they represent attitudes or beliefs used by offenders to rationalize, minimize, or deny their nonconforming behavior (Murphy, 1990). Research on cognitive distortions emphasizes the sex offender’s attitudes toward women and children. Several studies (Hanson, Gizzarelli, & Scott, 1994; Stermac & Segal, 1989) revealed that child molesters hold beliefs that legitimize their sexual involvement with children. For rapists, Ward, Keenan, and Hudson (2000) found that these beliefs involved denied responsibility, hostility toward women, and acceptance of interpersonal violence.

Studying the cognitive content of juvenile sex offenders has provided some additional means of differentiating rapists from child molesters and other offending and non-offending populations. Research (Ward et al., 1997) revealed that child molesters’ beliefs are unique and different from rapists and other offending and non-offending populations. Surprisingly, Ward et al. (1997) found that rapists were indiscriminable from the general population and other offenders’ views toward women and interpersonal violence.

Several measures have been developed to assess cognitive distortions in adults, but empirically based measures normed for an adolescent population are scarce. Burt’s (1980) measures (Rape Myth Acceptance Scale, Adversarial Sexual Beliefs, Sexual Conservatism, and Acceptance of Interpersonal Violence) are often used in assessing
the cognitive distortions of sex offenders but only one measure was created specifically
to assess adolescents, the Adolescent Cognitions Scale (ACS; Hunter et al., 1991). The
empirical data supporting the ACS is limited; but since it is the only cognitive distortion
measures for juvenile sex offenders, it is often used in conjunction with other
assessment tools to measure assesses juvenile sex offenders.

Empathy

Three facets of empathy related to juvenile sex offending have been identified;
general, victim-specific, and perspective taking (Finklehor & Lewis, 1988; Geer,
Estupinan, & Manguno-Mire, 2000; Hanson & Scott, 1995; Levinson, 1994; Nangle,
that a lack of empathy plays a large role in the etiology and maintenance of sex
offending. While Ryan (1999) believed that general empathy deficits contributed to
sexually offending behavior, Geer et al. (2000) concluded that offenders may lack
specific empathy (i.e., victim specific empathy) rather than global deficits in empathy.

Finklehor and Lewis (1988) concluded that empathic deficits in child molesters
and rapists may be different. They hypothesized that child molesters are probably more
empathic toward women than to children and vice versa for rapists. The offenders’
approaches to selecting and offending on victims are also very different. Child molesters
prey on emotionally vulnerable children and use their empathic perceptions of children’s
emotional weaknesses to exploit them. However, they do not feel any empathic concern
for the victim’s well-being. Unexpectedly, the child molesters have been shown to
express empathic concern for rape victims. In contrast, rapists recognize the physically
vulnerabilities of women and often exploit these vulnerabilities sometimes using force to perpetrate their offenses. Rapists may show no empathy for these women but have expressed empathic concern for victims of child molestation. The perpetration of these different types of offenses appears to indicate a lack of empathy in different areas (Finklehor & Lewis, 1988).

Perspective taking is an important aspect of empathy. Marshall et al. (1995) defined perspective taking as an individual’s ability to see the world from another’s point of view. Because of its cognitive component, Nangle et al. (2003) concluded that perspective taking linked cognitive distortions and empathy. Cognitive distortions occur because of the offender’s inability to cognitively take the place of another and to perceive his or her emotions. As a specific example, a lack of perspective taking may result in the offender being unaware of the harm they are inflicting upon their victim and so misperceive their own conduct as benign (Hanson & Scott, 1995).

The origin of perspective taking difficulties includes both developmental and environmental explanations. Flavell and his colleagues (Flavell, Botkin, Fry, Wright, & Jarvis, 1968; Flavell, Speer, Green, & August, 1981) suggest that perspective taking deficits may be particularly relevant to juvenile offenders because of this developmental component. They posit that deficits in perspective taking could be a result of young age and a lack of maturity.

Several measures are used to assess the multifaceted concept of empathy. One of the most commonly used measures of empathy is the Interpersonal Reactivity Index developed by Davis (IRI; 1983). The IRI assess the various distinct facets of empathy including, general (affective and cognitive) empathy and perspective taking. Victim
specific empathy measures are also used with sex offenders in order to address this third facet of empathy. Measures used to evaluate victim specific empathy include the Victim Empathy Distortions Scale (QVES; Beckett & Fisher, 1994) and the Victim Letter Task, in which offenders are asked to write letters of apology to their victims in order to evaluate their levels of empathy. Little empirical data supports the use of either measure with juvenile sex offenders; however, these are the best measures available.

Recidivism

More than half of all adult sexual offenders exhibited some form of deviant sexual interest or behavior before the age of 18 (Groth & Loredo, 1981). Given this alarming statistic, the identification of high risk offenders would inform important decisions regarding placement, interventions and education for these offenders (Epps, 1999). Risk assessment is clearly an important aspect in assessing juvenile sex offenders. Additionally, it is an important part of both sentencing decisions and determinations of treatment effectiveness (Conroy, 2002).

Research that has been conducted evaluating sex offender recidivism has produced mixed results. Some dynamic variables used to predict sexual reoffending include sexual offense characteristics (i.e., verbal threats during the offense and denial or victim blame), involvement with delinquent peers, impulsivity and antisocial behavior, and sexual arousal to deviant stimuli (Ageton, 1983; Kahn & Chambers, 1991; Prentky & Knight, 1993; Rice, Quinsey, & Harris, 1991). Most of the research that has shown consistent results has indicated that static and historical characteristics are the best
variables at distinguishing adolescent offenders with pervasive patterns of sexual misbehavior (Hall, 1995; Hanson & Bussiere, 1996).

The three most commonly used measures are to assess recidivism with juvenile sex offenders are the PCL-YV (Forth et al., 2003), the JSOAP-II (Prentky & Righthand, 2003), and the ERASOR (Worling & Curwen, 2001). The PCL-YV is a psychopathy measure that has not yet been validated with a sex offending population; however, the adult version has show good predictive validity for sexual recidivism so the PCL-YV is sometimes used for this purpose (Conroy, 2003). The actuarial measure, the JSOAP-II (Prentky & Righthand, 2003), has shown much promising research in identifying juveniles who reoffend sexually and is the most commonly used scale in measuring juvenile risk assessment. Finally, the ERASOR (Worling & Curwen, 2001) is a clinician rating scale used to predict reoffending in juvenile sex offenders. The authors indicated that this measure has successfully identified juvenile sex offenders who have recidivated.

**Sexual Arousal to Deviant Stimuli**

Deviant sexual interest and arousal has been found to play a substantial role in sexual offending behavior. Aylwin et al. (2005) indicated that juvenile sex offenders experience deviant sexual fantasies and that their masturbation to these fantasies routinely precedes their sexually offending behaviors. This association between deviant sexual fantasies and deviant sexual behavior is acknowledged by many researchers (Gratzer & Bradford, 1995; MacCulloch, Snowden, Wood, Mills, 1983; Meloy, 2000; O'Donohue, Letourneau, & Dowling, 1997) and they agree that identifying the individual
patterns of sexual fantasies displayed by offenders could help in treatment development. For example, assessment and categorization of arousal patterns can be used to select behavioral techniques that can change specific deviant fantasies (Salter, 1988).

Self-report inventories are the most commonly used measure in assessing deviant sexual interest and arousal, because they are easy to administer and are not physically invasive (Hunter et al., 1995). Quinsey and Earls (1990) and Freund (1981) suggest, however, that self reports of arousal and sexual interest are easily minimized via denial. They also lack empirical support with a juvenile population. The most commonly used self report measure used with sex offenders it the MSI (Nichols & Molinder, 1984). This is followed by the CSHQ (Paitich et al., 1977) and the TSI (Thorne, 1966). These scales show some promise as clinical measures: Due to the high face validity of all self-report measures of sexual arousal to deviant stimuli, they are highly susceptible to denial and minimization and more research is needed before its clinical utility can be established.

As alternatives to self report measures and physiological measures, Becker and Kaplan (1988) created the ASIC, and Abel Screening Incorporated (2001) developed the attentional measure, the AASI. These measures are both commonly used with juvenile sex offenders as they offer some validity data with this population. Although both the AASI and the ASIC have shown some promising data they are also highly vulnerable to minimization and denial. Additionally, correlations with these measures and tumescence data have shown mixed results.
Lastly, physiological measures are also used to assess deviant sexual interest. The most commonly used and best validated is the PPG. A common use of the PPG is to challenge sex offenders’ denials and minimizations and to assess their treatment needs (Launuy, 1994). Although the PPG procedures and the stimuli are not standardized, they have shown promising results for assessing juvenile sex offenders’ patterns of sexual arousal to deviant stimuli, evaluating sexual preference and detecting dissimulation.

Testing Effectiveness of the PPG

Factor Structure of the PPG

Deviant sexual interest and arousal has been associated with many important variables in assessing and treating juvenile sex offenders such as cognitions and initiation of offending behavior. PPG research has used rationally derived categories and indices to interpret PPG data. The Indices often used are the Deviance Index, the Rape Index and the Pedophilic Index (Abel, Barlow, Blanchard, & Guild, 1977; Barbaree & Marshall, 1988; Hunter, Goodwin, & Becker, 1994). The Deviance Index was formulated by calculating an average arousal level to the deviant sexual stimuli dividing it by the average arousal level of the non-deviant sexual stimuli. The Deviance Index is posited to indicate whether the offender experiences sexual arousal to deviant stimuli. The Rape and Pedophilic Indices are calculated in a similar manner. Murphy et al. (2001) also compared groups based on histories of child abuse; rather than relying only on an index to interpret the results of the PPG.

As no research to date has identified an underlying factor structure of the stimuli
created by Becker et al. (1992), the current study undertook this step. Three distinct factors were identified: arousal to male stimuli, arousal to female stimuli and paraphilias, and arousal to nonsexual stimuli. Although Factors 2 and 3 were not able to differentiate between groups of offenders, Factor 1 shows promise in being able to identify offenders with male victims. Specifically, offenders with higher levels of arousal to male stimuli (all of which are encompassed in Factor 1) appeared to deny some sexual offenses and to display more deviant arousal than other offenders, who elevated on either of the other two factors. These data are similar to the findings of Murphy et al. (2001) found on the same data set. It suggests a potential use for Factor 1 in addressing two clinical priorities: (a) responding defensively and (b) more deviant sexual interest than others.

**Reliability of the PPG**

The PPG factor scales evidenced good internal reliability with alphas from .79 to .95. However, the high inter-item correlations suggest substantial redundancy in these scales. Because arousal to each scenario may contain valuable information an attempt was made to remove scenarios in an effort to reduce inter-item correlations.

Test-retest reliability is important to ensure that the PPG produces consistent results. When administering the PPG on consecutive days, Becker et al. (1992) found test-retest reliability ranging from .21 on the “exhibitionism” scenario to .83 on the “consensual sex with a 9-12 year old male” scenario (which is now “consensual sex with a 10-11 year old male”). Although no other research was located that tested the test-retest reliability of each scenario, several researchers assessed the overall test-retest reliability of the measure and that of the Rape Index. Barbaree, Baxter, and Marshall
(1989) found overall test-retest ranging from .29 with nonoffenders to .44 with rapists. When combining offender groups (pedophiles, rapists and nonsexual offenders) Wormith (1986) found test-retest reliability of .53. Finally, Davidson and Malcom (1985) found that the Rape Index showed test-retest reliability of .65 with all subjects and after removing the low responders, test-retest reliability of .88. Many studies found that the stability of the PPG scores are marginal at best. However, the work of Davidson and Malcom suggests these findings may be affected by low responders whose data may be questionable.

Validity of the PPG

The current research adds to the limited research on the validity of the Becker et al. stimuli set of the PPG with a juvenile sex offending population. This study analyzes the various ways in which the PPG can be used to evaluate different types of juvenile sex offenders. Given the lack of adolescent data, the discussion will incorporate findings from adult sex offenders. As evidence of criterion-related validity, the PPG scores were evaluated against independent criteria.

PPG and Victim Gender

An important issue is in determining the effectiveness of the PPG in detecting offenders’ gender preference for victims. The PPG scores were analyzed by high (≥ 50% of full erection) and low (≤ 20% of full erection) arousal levels to the scenarios in order to determine offender preference for particular stimuli (see Table 10). The findings suggest that offenders with male victims exhibited high levels of arousal to sexual
scenarios with males at greater percentages than offenders with only female victims. Only 8.6% to 13.9% of offenders with no male victims exhibited high arousal whereas 22.7% to 30.9% of offenders with male victims had high arousal levels. Although these data appear promising, the rate at which offenders with male victims were able suppress their arousal is concerning (more than one third).

Detection of differences in offender preference for victim gender provides useful information for male scenarios but it fails to show effective differentiation with the female stimuli. The ineffectiveness of the PPG female stimuli in differentiating between the two groups is likely due to a methodological issue; that the “male victim” category, as grouped in the archival data sometimes included female victims. Due to this methodological artifact, it is unclear whether the non-significance is due to the PPG scenarios or the way in which the victim gender variable was recorded.

**PPG and Age Preference**

Traditionally researchers have used Pedophilic and Rape Indices to interpret the PPG data. As noted in the introduction, the Rape Index is assessed by dividing the highest arousal to rape by the highest arousal to consenting sex. The Pedophilic Index is assessed by dividing the highest arousal to children by the highest arousal to adults (Launay, 1994). Using the Pedophilic Index, Freund (1965, 1967a,b) was able to differentiate non-familial pedophiles from a control group. Murphy, Haynes, Stalgaitis and Flanagan (1986) were also able to use a Pedophilic Index to differentiate between pedophiles and non-pedophiles in adolescent offenders. The Rape Index however, has met with conflicting results. Abel et al. (1977) found that rapists did not elevate on the
Rape Index because they responded equally to consenting and forced sex. However, they were differentiated for controls because controls were more elevated on consenting stimuli. Quinsey, Chaplain, and Upfold (1984) found that rapists elevated on the Rape Index whereas, Baxter, Barbaree, and Marshall (1986) found no distinction between rapists and non-rapists. These indices were calculated by Murphy et al. in an earlier analysis of these data and were not significant so they were not used in the current study.

To assess the ability of the PPG to detect offenders’ age preference for victims high and low arousal levels were evaluated for offenders with older and younger victims. To detect differences between arousal levels to particular stimuli, high (≥ 50% of full erection) and low (≤ 20% of full erection), PPG scores were evaluated (see Table 11). The findings indicate that there is an overall trend is for a larger percentage of offenders with younger victims to fall in the high arousal group. However, the only stimuli that was statistically significant was the scenario depicting forced sex with a 6-7 year old female.

Unexpectedly, offenders with younger victims had a greater proportion of high arousal across all scenarios than offenders with older victims. Significant differences were found in three scenarios: (a) sex with a male relative, (b) sex with a female relative, and (c) forced sex with a female peer. These findings may be influenced by a methodological artifact, specifically the misalignment of the victim ages reported by the offenders and the ages of the victims in the PPG scenarios. The data also suggest that offenders with younger victims may simply experience a general deviant arousal pattern.
Detection of Dissimulation

Lanyon and Thomas (in press) describe the differentiation of admitting and denying offenders as the most important assessment question when working with a sex offending population. Tables 6, 7, and 8 are concerned with the ability of the PPG scenarios to distinguish between those who are honestly denying sexual arousal to deviant stimuli and those who are dishonestly denying it. Findings indicated that the PPG was able to differentiate between a full admitter and partial admitter group.

The ability to inhibit and create arousal to selected stimuli has been examined in several research studies (e.g., Laws & Holmen, 1978; Wydra, Marshall, Earls, & Barbaree, 1983; Marshall & Fernandez, 2001), indicating the fakability of the PPG. On this point, Kalmus and Beech (2005) concluded that the voluntary suppression of the tumescence response is key to defensiveness on the PPG. As illustrated in Table 8, suppression is likely to have occurred with the partial admitters exhibiting lower levels of arousal than the full admitters to the scenarios. These findings are consistent with previous research showing that participants are able to suppress their penile response (Golde, Strassberg, & Turner, 2000).

Most research has found that the PPG is highly susceptible to faking, yet no research was found for detecting patterns of dissimulation. The prediction model (see Table 8) indicated that three variables on the PPG (sex with a male relative, forced sex with an adult female and consensual sex with a female peer) could identify with 75% accuracy who was partially denying their sexual deviation. These findings fit with the research that indicates that when offenders are faking their arousal, they are able to do so more easily with age preference than with gender preference (Freund, Watson, &
Rienzo, 1988). The usefulness of the PPG increases through its ability to predict admitters and partial admitters. With further research confirming the significance of the predictive variables, the PPG could be used in assessments. Offenders who elevate on the three predictive variables in the indicated direction could be marked for further more in-depth evaluations specifically for denial and minimization. It is important to note that due to its scarce availability of reliability and validity data the PPG about sexual deviance should not be used to determine guilt or innocence and no conclusions should be drawn based solely on the PPG.

Limitations of the Current Study

Current and past research indicates that the PPG has limited uses with juvenile sex offenders based on variable evidence of reliability and validity. A limitation of the current study is that the data came from an already existing data set so the researchers were unable to choose the measures administered or establish categories consistent with the Becker et al. stimuli. Without corresponding categories, the analyses were limited in their ability to evaluate the PPG.

A second limitation is that sex offenders are notoriously unreliable self-reporters when asked about sexual offenses. It is likely that offenders’ defensiveness interfered with researchers’ ability to evaluate variables related to sexual offending when records were not available. Because assessing sexual arousal to deviant stimuli requires directly asking or directly measuring the types of sexual stimuli that arouse offenders they are highly susceptible to faking through suppression of the erectile response,
denial, and minimization. The current research hopes to add to literature in by providing a beginning step in detecting erectile suppression exhibited by juvenile sex offenders.

Finally, as with most research, the generalizability of the study is limited due to the population used. The population sampled in this study, however presents both a strength and a limitation for this study. The participants involved in the study had low rates of sex crimes, 31% of the sample had only one reported sex offense and 71% had 5 or less. Additionally, the sample received treatment outside of a correctional setting and the participants averaged less than 1 sexual arrest and less than 2 nonsexual arrests. Low rates limit the generalizability as the results may not be applicable to inpatient sexual offenders or incarcerated sexual offenders. However, it can also be seen as a strength because it evaluates a group of offenders that are not often assessed, namely the less severe offenders who are more prominent in outpatient treatment facilities and in the community.

Directions for Future Research

Future research should focus on comparison groups for the PPG scenarios, selecting a participant group with a wider range of offenses and assessing test-retest reliability. In order to better test the effectiveness of the Becker et al. stimuli, future researchers should place offenders into groups that closely match the gender and age groupings of the stimuli set. Such groupings may result in more effective differentiation of offender groups based on victim characteristics.

Second, to increase generalizability of future research, selection of a sample with a wider range of offenses and correctional experiences is suggested. Using a more
representative sample will increase the generalizability of the findings and allow them to be applied to a broader group of juvenile sex offenders.

Third, test-retest reliability should be systematically reevaluated for each of the scenarios, any applicable indices and factor scales. With only one study of test-retest findings for these scenarios, further research would add greatly to the literature on the PPG's stability.

Summary

This study assessed the validity and reliability of the PPG using Becker et al.'s (1992) scenarios with a juvenile sex offending population. An important finding of this research is that this set of PPG scenarios is able to differentiate between admitters and partial admitters. It was not, however, able to effectively differentiate between offenders based on victim age and gender preference. Additionally, a three-factor structure was found, although the inter-item correlations were high indicating some redundancy.

The results indicate that the PPG is able to differentiate some offender groupings based on their arousal level to specific scenarios. Offenders who had male victims were significantly different on certain scenarios than were offenders with only female victims. However, this study also suggests that the Becker et al. scenarios have limited usefulness when differentiating offenders based on age of the victim, this finding is similar to studies conducted with adults (Avery-Clark & Laws, 1984; Barbaree et al., 1979). As previously noted, Murphy et al. found through an earlier analyses of this data set that the rape and pedophilic indices did not work with this sample.
Finally, the current research adds to the literature regarding reliability and validity data for the PPG with a population of juvenile sex offenders. It is one of a few investigations to provide a three-factor structure with robust internal reliability. It also contributes data on the predictive validity of the Becker et al. scenarios. Lastly, this study was able to provide some evidence of detection strategies for dissimulators on these scenarios of the PPG with a juvenile sex offending population. These findings provide some important implications for assessment of juvenile sex offenders and contributes to the growing clinical literature on the utility of the PPG.
REFERENCES


