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REPLICATIONS AND EXTENSIONS IN AROUSAL ASSESSMENT FOR SEX OFFENDERS WITH DEVELOPMENTAL DISABILITIES

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Three adult male sex offenders with developmental disabilities participated in phallometric assessments that involved repeated measures of arousal when exposed to various stimuli. Arousal assessment outcomes were similar to those obtained by Reyes et al. (2006). Additional data-analysis methods provided further information about sexual preferences, thus replicating and extending previous research. The results provide preliminary data for establishing a preference gradient by age. Implications for the use of repeated measures and preference gradients in arousal assessments are discussed.

Key words: arousal assessment, developmental disabilities, repeated measurement

Previous research has shown that within-subject phallometric assessments (i.e., repeated measures of arousal to various stimuli using the penile plethysmograph) can produce differentiated outcomes for sex offenders with developmental disabilities (Reyes et al., 2006). Phallometric assessments are commonly used in sex offender evaluations to evaluate arousal to various forms of stimuli (e.g., auditory or visual) or various categories of stimuli (e.g., child vs. adult). These assessments may allow the identification of the relevant conditions under which an individual may be more likely to commit additional offenses (e.g., Barbaree & Marshall, 1988; Hanson & Bussiere, 1998; Hanson & Morton-Bourgon, 2004; Quinsey, Chaplin, & Carrigan, 1980) and provide direction for the development of individualized treatments.

The majority of previous sex offender research contained limitations that are not relevant in typical repeated measures research. For example, Marshall and Fernandez (2003) conducted group comparisons across offenders and nonoffenders or among different types of offenders. Other studies included a limited number of exposures to the stimuli used in the assessments (e.g., Lalumiere & Harris, 1998; Laws & Osborn, 1983). The use of repeated measures may attenuate the unknown deleterious effects of extraneous variables (e.g., illness, lack of sleep, recent ejaculation, etc.) that may confound experimental results. In contrast to much of the previous research, Reyes et al. (2006) conducted within-subject analyses of conditions that may produce arousal. Their results suggested that repeated phallometric assessments for sex offenders with developmental disabilities are useful for establishing the

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conditions under which arousal is likely. The purpose of the present study was to replicate and extend the assessment methodology of Reyes et al. by evaluating the utility of additional data-analysis techniques to provide more detailed information about the arousal assessment outcomes.

METHOD

Participants

The first three individuals referred for assessment (including Participant 37 from Reyes et al., 2006) by their residential treatment facility participated in this study. Staff at the treatment facility were interested in conducting a new arousal assessment for Participant 37 given that his initial assessment had been conducted approximately 8 years before the current assessment. All of the individuals had been placed in the residential treatment facility and ordered by the court to participate in standard assessment procedures (charges within the judicial system against all three participants had been dismissed due to incompetence to stand trial, despite accusations of multiple offenses against young children). Approval by both the facility and university institutional review boards was obtained to evaluate and report on the clinical process.

Arousal Assessments

All of the procedures for the arousal assessments were identical to those used in Reyes et al. (2006). Assessments consisted of measuring arousal levels, via a penile plethysmograph, during exposure to *deviant* (typically defined as stimuli that include individuals below the legal age limit for sexual activity [18 years]), *nondeviant*, and *neutral* stimuli. Arousal was measured with a circumferential mercury-in-rubber strain gauge connected to a computerized interface, which allowed measurement of real-time changes in penile circumference. The stimuli, which consisted of 11 video clips (2.5 min each), are commercially available and are designed specifically for use in arousal assessments. Each clip depicted a male or female of a particular age (kindergarten, 6 to 7 years, 8 to 9 years, teen, and adult) wearing a bathing suit and engaging in the same sequence of behavior. The stimuli also included neutral scenes (e.g., boating and fishing).

All sessions were conducted in a room (2.1 m by 2.3 m) that contained a recliner, a 27-in. television used to present the video clips, a camera that provided a live video feed of the participant from above the shoulders, and a metal lap tray (to prevent the participant from receiving visual feedback of arousal). The technicians were located in an adjacent room that contained a computer, a video monitor showing the live feed, and a video cassette recorder used to present the assessment stimuli.

Prior to beginning the assessment, a technician conducted a baseline measure of penile circumference (to ensure proper selection of the strain gauge and to establish a baseline measure) and instructed each participant to attach the gauge properly. Before each daily session, a technician calibrated the strain gauge with a system of computer readings, placed an absorbent disposable pad on the recliner, and placed the calibrated gauge on the pad. The technician provided each participant with the opportunity to use the bathroom immediately prior to the sessions. Next, the technician instructed the participant to enter the session room, privately pull down his pants and underwear to his ankles, sit in the chair, and attach the gauge as previously instructed. Once the gauge was attached, the participant placed the metal tray on his lap and placed his hands on the tray. The technician turned on the video camera to start the video feed of the participant after checking the data stream for any anomalies that may have indicated a problem with the gauge.

The technician waited until detumescence (i.e., decrease in arousal levels) was obtained (if applicable) and stability criteria (no changes greater than 5 mm for a period of 1 min) were

met before presenting the video clips in one of three predetermined orders. The technician compared the penile circumference (in millimeters) at the beginning of the video clip to the highest point reached during the video clip to determine the change in penile circumference in the presence of each stimulus. This process was repeated until all 11 stimuli had been presented. At the conclusion of the session, the participant removed the gauge, washed his hands, dressed, and exited the session room. One session was conducted per day, and each session involved one presentation of each of the 11 stimuli. Sessions were typically conducted three to five times per week. Sessions were continued until clear or informative outcomes were obtained.

Data Analysis

Arousal outcomes, measured by change in penile circumference, were expressed (a) across successive presentations of stimuli (presented to the participants in a multielement design) as in Reyes et al. (2006) and (b) as average level of arousal obtained for each stimulus across the entire assessment.

RESULTS AND DISCUSSION

The results for all participants are depicted in Figure 1. For Participant 43, arousal levels to the male stimuli were lower than arousal levels to several of the female stimuli (left). Furthermore, arousal levels to the deviant age categories (i.e., kindergarten through 8 to 9 years) were higher than to the nondeviant age categories. The right panel shows a summary of the overall levels of arousal obtained to the male and female stimuli and by age category across the entire assessment, plotted as the average millimeter change obtained in each age and gender category. Although the overall arousal levels to the male stimuli were low, the lowest arousal occurred to the nondeviant adult male stimulus. The arousal levels to the other male age categories were largely undifferentiated. The outcomes for the female stimuli show that arousal levels were lowest to the nondeviant age category (female adult) and highest to the three youngest age categories, with the highest levels of arousal occurring to the female kindergarten stimulus.

Figure 1 also shows the arousal outcomes for Participant 5. High levels of arousal were obtained for several of the age categories for both the male and female stimuli. In general, the arousal levels were high and undifferentiated for the male stimuli (kindergarten through 8 to 9 years) and low for the male teen and adult stimuli. For the female stimuli, arousal levels were differentially higher to the female kindergarten stimulus, with high levels of arousal also occurring for the female age 6 to 7 years, age 8 to 9 years, and teen on some sessions. There were two distinct patterns of responding for the male and female stimuli. Arousal levels for the male stimuli were higher as age categories increased until it peaked to the male age 8 to 9 year stimulus and then dropped off for the male teen and adult stimuli. The outcomes for the female stimuli showed a dissimilar pattern of responding, in that the arousal levels decreased as the age categories increased, with the highest levels occurring to the female kindergarten stimulus and the lowest levels occurring to the female adult stimulus.

The results for Participant 37 are also shown in Figure 1. Arousal levels to the male stimuli were uniformly low and undifferentiated. The arousal levels for the female stimuli were also low, even with the exception of slightly higher levels obtained for the female adult stimulus. Arousal levels for the female stimuli were higher than for the male stimuli but represent an overall low level of arousal, especially compared to previously reported arousal outcomes for this participant (Reyes et al., 2006).

Overall, results of this study replicate and extend those of Reyes et al. (2006). Three general patterns of arousal outcomes were obtained: differentiated deviant arousal (Partic-

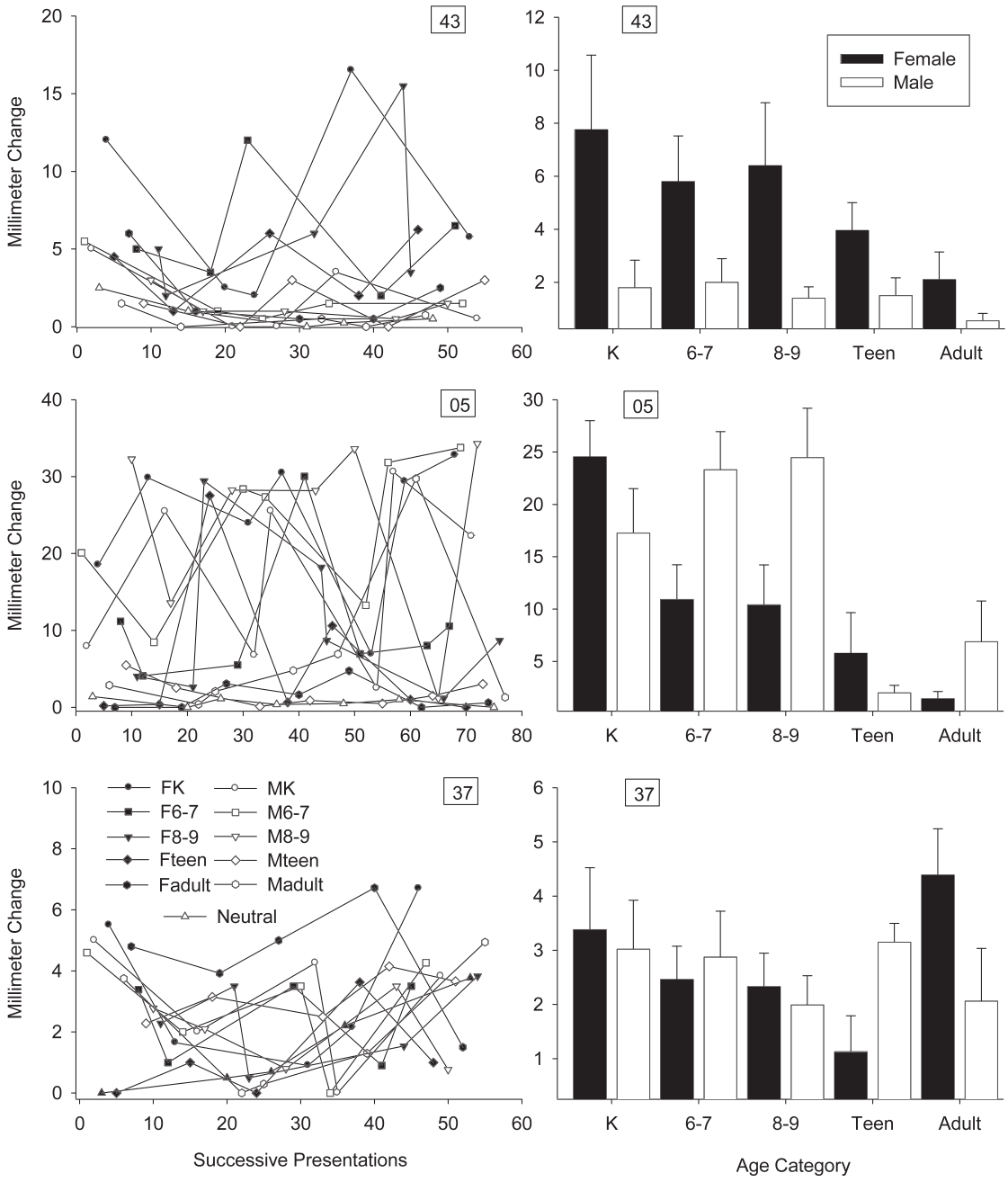

Figure 1. Assessment results for Participant 43 (top), Participant 5 (middle), and Participant 37 (bottom). Millimeter change is depicted in the left panels. Average millimeter change is shown in the right panels; bars represent standard error.

ipants 43 and 5 for female stimuli), undifferentiated deviant arousal (Participant 5 for male stimuli), and no deviant arousal (Participant 37). None of the arousal outcomes suggested evidence of habituation across repeated exposures to the stimuli, and therefore provide additional support for the utility of repeated measurement assessments for this population.

The outcomes for Participant 37 are the most difficult to interpret, given that little or no arousal occurred to the deviant or nondeviant stimuli, and the outcomes obtained in the current study differed from previous assessments for the same participant. In the Reyes et al. (2006) study, Participant 37 showed patterns of both differentiated deviant arousal towards females ranging in age from 6 to 9 years and very little arousal to the female adult stimulus. The current assessment results suggested no differentiated deviant arousal to the male or female stimuli, but did show slightly elevated levels of arousal to the female adult stimulus. Although the overall levels of arousal to the female adult stimulus were modest, this still potentially represents an important change in the sexual preferences for this participant that may have been undetected without using a repeated measures approach to assessment.

We also analyzed and depicted the data as the average millimeter change per category across the entire assessment. To our knowledge, this is the first reported example of arousal assessment data being analyzed as a gradient (i.e., arousal as a function of age categories). Analyzing the results in this way provided additional information about individual sexual preferences and helped to clarify the overall patterns. They also generated what could be considered a rank order of sexual preferences by showing how arousal levels compare across stimulus classes (i.e., age and gender). The repeated measures approach and arousal gradient analysis may provide researchers with the necessary information to begin designing and evaluating effective treatments for this population. These assessments and treatments seem especially important because the rate of sexual offending does not appear to be decreasing to any significant degree (U.S. Department of Health and Human Services, 2008).

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