JOURNAL OF APPLIED BEHAVIOR ANALYSIS 2011, **44,** 707–717 NUMBER 4 (WINTER 2011)

THE INFLUENCE OF PRESESSION FACTORS IN THE ASSESSMENT OF DEVIANT AROUSAL

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Three adult male sex offenders with developmental disabilities participated in an evaluation of presession factors that may influence levels of sexual arousal measured with a penile plethysmograph. We evaluated the effects of presession masturbation (1 participant) and arousal-suppression strategies (2 participants). Results showed that presession masturbation lowered arousal levels and both participants suppressed arousal to varying degrees. These outcomes suggest the potential for consideration and manipulation of presession factors as treatment components for sex offenders with developmental disabilities.

Key words: sex offenders with developmental disabilities, penile plethysmograph, arousal assessment, masturbation, suppression

Phallometric assessments that involve the use of a penile plethysmograph are generally considered to be the most common and effective way to measure sexual preferences in men (Howes, 1995; Murphy & Barbaree, 1994). Individuals typically are exposed to a variety of stimuli considered to be both deviant (i.e., girls and boys under the age of 18) and nondeviant (i.e., men and women over the age of 18) to determine specific age or gender categories that result in high levels of arousal (e.g., Barbaree & Marshall, 1988; Hanson & Morton-Bourgon, 2004). In the established literature, the term *deviant* is used to describe any arousal to stimuli that would be considered underage by law.

Although not typically used in previous studies, recent research has demonstrated the utility of using a single-subject design approach to the phallometric assessment of sex offenders with developmental disabilities (e.g., Reyes, Vollmer, & Hall, 2011; Reyes et al., 2006). Using a single-subject design necessarily involves collecting repeated measures of arousal during the assessment process, which can offer several advantages over traditional approaches that usually involve only limited exposure to the assessment stimuli. For example, the first one or two exposures to a stimulus may not be representative of an overall arousal pattern due to session-by-session variability in the data. Furthermore, assessment of arousal patterns over multiple sessions might aid in the detection of extraneous variables related to assessment outcomes. This issue is especially relevant, given that one of the most commonly cited concerns with the use of arousal assessments involves the potential for obtaining inaccurate outcomes due to extraneous factors.

Extraneous factors that may influence assessment results include, but are not limited to, (a) time since ejaculation and (b) instructions

This research was supported by a contract with the Florida Agency for Persons with Disabilities. However, opinions do not necessarily reflect those of the funding agency.

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doi: 10.1901/jaba.2011.44-707

(possibly even self-generated) to suppress deviant arousal, to enhance nondeviant arousal, or both. If ejaculation affects assessment outcomes, then masturbating some period of time before an arousal assessment may decrease the overall levels of arousal achieved during the assessment, due to a refractoryperiod following ejaculation (e.g., Yilmaz & Aksu, 2000). Collecting repeated measures of arousal might highlight any day-to-day idiosyncrasies that result from conducting a session after an individual has masturbated (or otherwise ejaculated). Repeated measures of arousal may help to protect against drawing erroneous conclusions about the individual's data that are generated during the assessment procedures. Finally, from a treatment standpoint, it may be possible to use the refractory period advantageously: The individual might be less dangerous during that particular interval. Surprisingly, it does not appear that the effects of presession masturbation have been investigated with sex offenders with developmental disabilities despite the intuitive appeal of such a manipulation.

A large majority of the investigations of control of arousal have occurred with both hetero- and homosexual nonoffenders. Results generally suggest that participants were able to suppress arousal when given instructions (e.g., Abel, Blanchard, Barlow, & Mavissakalian, 1975; Freund, 1963; Freund, Watson, & Rienzo, 1988; Golde, Strassberg, & Turner, 2000; Henson & Rubin, 1971; Lalumière & Earls, 1992; Laws & Rubin, 1969; Mahoney & Strassberg, 1991; McAnulty & Adams, 1991; Quinsey & Bergersen, 1976). Other studies have focused on evaluations of suppression in individuals who have committed a sexual offense and have found similar outcomes (e.g., Laws & Holmen, 1978; Malcolm, Davidson, & Marshall, 1985; Wydra, Marshall, Earls, & Barbaree, 1983) including a study by Hall, Proctor, and Nelson (1988) in which 80% of the participants suppressed arousal. Other studies, however, have shown mixed results of participants' arousal suppression (e.g., Avery-Clark & Laws, 1984). In addition to investigating suppression, many of the studies in this area also have shown that individuals can generate high levels of arousal under conditions in which they may not otherwise show arousal (Freund et al., 1988; Laws & Rubin, 1969; Quinsey & Bergersen, 1976).

Although the control of erectile responses appears to be a robust finding in the literature for both sexual offenders and nonoffenders, to date there are few published investigations that involve adult male sex offenders with developmental disabilities. Currently, there is one published data set (Murphy, Coleman, & Haynes, 1983) that involved an adolescent child sex offender with developmental disabilities in which penile responses were measured to audiotaped descriptions of aggressive sexual interactions with children, with and without instructions to attempt to suppress his arousal. The results showed that the individual displayed high levels of deviant arousal in both conditions, thereby indicating that he did not suppress arousal. Other data shown in Murphy et al. highlighted an adult man with developmental disabilities who was accused of raping an adult woman. These outcomes showed high levels of deviant arousal (to rape-related stimuli), even when given instructions to suppress arousal. It is clear that more research is needed in this area to determine the conditions under which both suppression and increasing arousal to nondeviant stimuli with sex offenders with developmental disabilities might be identified.

Given the potential for extraneous factors to influence phallometric assessments, the purpose of the present studies was to determine the effects of commonly discussed but underinvestigated variables. The purpose of Study 1 was to investigate the effects of presession masturbation, and Study 2 was designed to investigate the potential to suppress erectile responding during arousal assessments for sex offenders with developmental disabilities.

GENERAL METHOD

Participants

Three individuals from a state residential treatment facility for offenders with developmental disabilities participated. Two participants (05 and 43) had been assessed previously, and the outcomes were reported in Reyes et al. (2011). Participant 43 participated in the masturbation evaluation (Study 1), and Participants 05 and 51 participated in the suppression evaluation (Study 2). All of these individuals had been diagnosed with mild mental retardation, had been found incompetent to stand trial for charges of sexual abuse against young children, and had been court ordered into a state residential treatment facility. As part of their treatment, all of the individuals voluntarily participated in a variety of assessment procedures conducted at their residential facility. In addition, institutional review board (IRB) approval to evaluate and report on the clinical process was obtained from the facility IRB as well as the university IRB. It is important to note that these individuals were involved in these assessments independent of research. In all cases, the presession factors were considered by their therapist to be a beginning point for a possible treatment component that would be tested later for generality in more natural contexts. In short, the assessments per se were not conducted exclusively for research purposes but rather as a part of ongoing assessment and treatment.

Arousal Assessments

Arousal assessments were conducted using the same procedures and stimuli previously reported by Reyes et al. (2006, 2011). All of the assessments including direct measurement of arousal (using a penile plethysmograph) in the presence of males and females of varying ages. The penile plethysmograph consisted of a circumferential mercury-in-rubber strain gauge (D. M. Davis Inc.) connected to a computerized interface that permitted measurement of real-time changes in penile circumference. The stimuli for the assessments included 11 commercially available (Northwest Media Inc.) video clips of males and females wearing bathing suits. The stimulus sets were designed specifically for the purpose of sex-offender assessment. The individuals in the videos fell into five prelabeled age categories: kindergarten, 6–7 years, 8–9 years, teen, and adult. Each video clip was 2.5 min in duration and showed the individuals engaging in a standard sequence of behavior. An additional video clip included with the assessment stimuli depicted scenes of fishing and boating and were designed to serve as a control to the other potentially sexually arousing video clips. The neutral clip was of the same duration and was presented during each session.

Sessions took place in a room (2.1 m by 2.3 m) that contained a recliner, a 27-in. television screen 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. The lap tray served to prevent any visual feedback of arousal. The technicians were located in an adjacent room that contained a computer, a video monitor showing the live feed of the participant, and a video cassette recorder used to present the assessment stimuli. Observers monitored the participants to ensure they were oriented towards the television screen with their eyes open.

Before the initial assessment session, the therapist instructed each participant how to obtain an initial measure of penile circumference (while not aroused) to select an appropriately sized strain gauge. This involved having the individual enter the bathroom by himself and take a measure of penile circumference using a specifically designed measuring strip. Manufacturer guidelines suggest selecting a gauge size that is 5 mm below the measured penile circumference to obtain a sensitive measure of changes in penile circumference over time. These measurements were collected approximately three times for each participant to ensure reliable measurement. Participants also received instruction on proper gauge attachment and placement. Prior to each daily session, the strain gauges were calibrated using a

computer program and calibration cone that contained premeasured stepwise increases in circumference. The strain gauges were placed on the appropriate areas of the calibration cone to evaluate the consistency of the gauge readings, and adjustments were made as needed. Final preparation involved placing a disposable pad and strain gauge on the recliner.

At the beginning of each session, the therapist prompted the participant to use the bathroom. Next, the therapist instructed the participant to remove his pants and underwear, sit in the recliner, place the gauge on his penis as previously instructed, and to place the metal tray on his lap after the therapist left the room. Based on the data stream provided by the computer program, the technician could determine whether the correct gauge size had been selected, if it had been attached properly, and if it was functioning correctly. Immediately before the session began, the technician also turned on the camera to begin the live feed.

During each session, all of the stimuli were presented in one of three predetermined, randomly assigned orders. The selected order was repeated throughout the duration of the assessment. All data were collected automatically by the computer program. Baseline levels of arousal were noted immediately prior to the beginning of each video clip and were compared to the peak level of arousal obtained during the video clip to obtain the change in arousal for each particular stimulus. If arousal levels increased above baseline levels during any of the video clips, the technician waited until arousal levels returned to the baseline range for a minimum of 1 min before presenting the subsequent clip. Each session consisted of 11 stimulus presentations and averaged approximately 60 min. At the conclusion of each session, the therapist instructed the participant to remove the gauge, get dressed, and wash his hands before exiting the session room. After the participant left the session room, the technician sterilized and stored the gauge, threw away the disposable pad, and cleaned the recliner and metal tray with disinfectant cleaner. Only one session was conducted per day, and sessions typically were conducted three to five times per week. Therapists visually inspected the data on a session-by-session basis. Thus, the total number of sessions varied by participant because the assessments continued until clear or informative outcomes were obtained.

Data Analysis and Design

Arousal outcomes were measured as change in penile circumference and were graphed across stimulus presentations. The data for each age and gender category that showed differentially high levels of arousal were graphed separately and analyzed using a reversal design to evaluate the effects of presession masturbation and control of arousal.

STUDY 1

Method

Masturbation Evaluation

Baseline. Arousal assessments were conducted following the general procedures described above.

Presession masturbation. Prior to each session, the technician asked the participant if he was able to participate in an arousal assessment for that day. If the participant agreed, the technician set-up the session and then briefly met with the participant to review specific instructions. The participant was asked to go to his room and masturbate until he ejaculated. After he gave a verbal report of completion, the arousal assessments were conducted. The arousal assessments always were conducted within 5 min of the verbal report of masturbation completion. If it was not possible to begin the session within 5 min, no session was conducted that day. Because the arousal levels to the male stimuli for Participant 43 were low in baseline, the effects of masturbation were evaluated using only the female stimuli.

Results and Discussion

In all figures, the data are expressed as millimeter change from the initial measurement of penile circumference. Figure 1 shows the

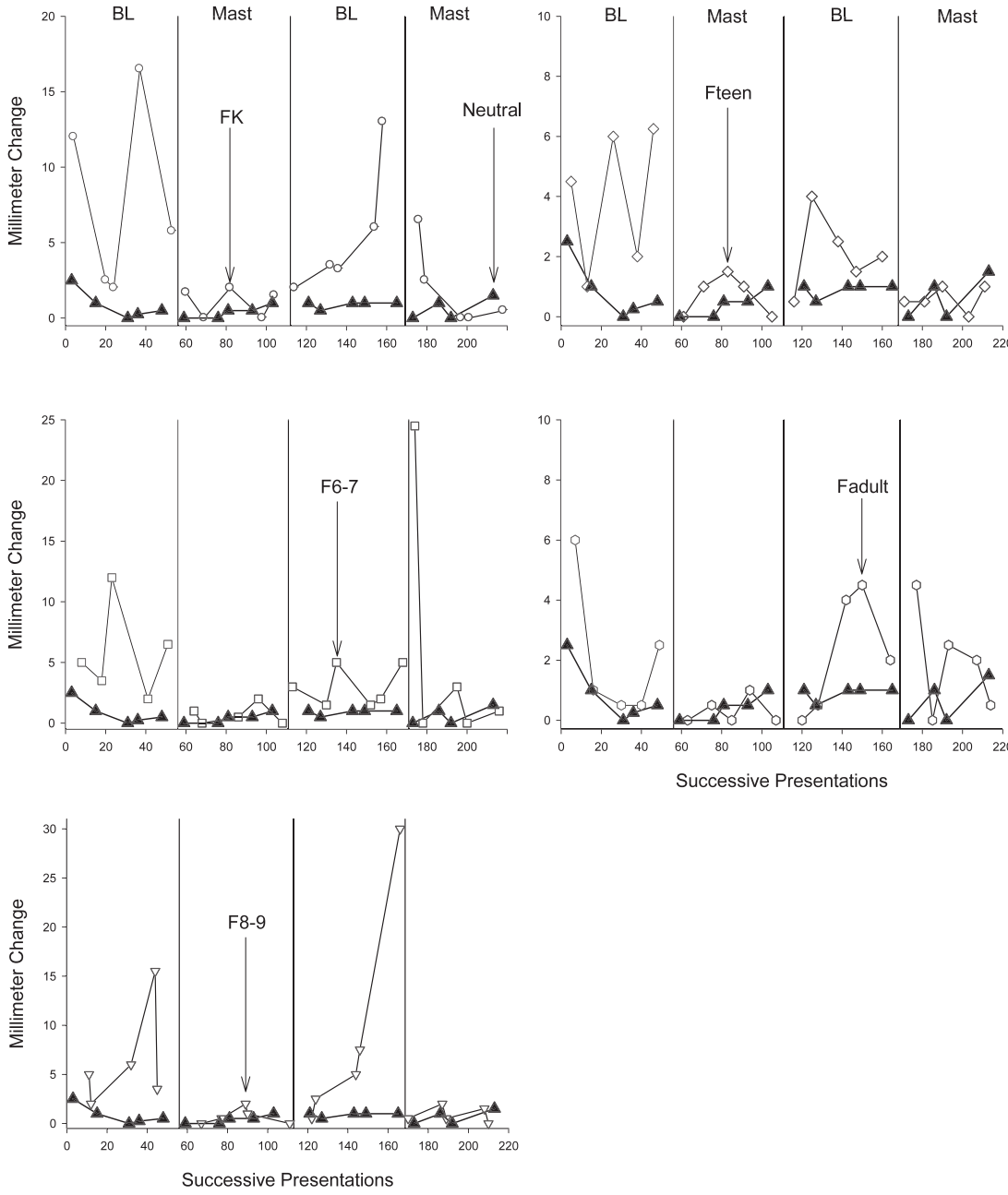

Figure 1. Presession masturbation results for Participant 43 to the female kindergarten stimulus (FK; top left), the female 6–7 stimulus (F6–7; middle left), the female 8–9 stimulus (F8–9; bottom left), the female teen stimulus (Fteen; top right), and the female adult stimulus (Fadult; middle right).

results obtained to all of the female stimuli for Participant 43. In general, arousal levels to all stimulus categories were lower during the presession masturbation sessions than during the baseline sessions, and little to no arousal occurred to the neutral stimulus in all sessions. The overall level of arousal obtained in the presence of each stimulus category varied during

the baseline sessions, but presession masturbation still produced lower mean levels of arousal even when baseline levels of arousal were relatively low (e.g., the female age 6–7 category, the female teen category, and the female adult category). For example, mean millimeter change of baseline levels of arousal were 7.8 and 5.6, respectively, and mean millimeter change of levels of arousal during the masturbation phases were 1.0 and 1.9 during the respective masturbation phases for the female kindergarten stimulus. This pattern was generally maintained across all stimulus sets, in that the mean change in baseline was higher than the mean change during the masturbation phases.

STUDY 2

Method

Suppression Evaluation

Baseline. Arousal assessments were conducted using the procedures for the standard arousal assessments. The return to baseline involved instructing the participants to refrain from suppressing arousal.

Phase 1. Prior to each arousal assessment, the therapist provided a set of instructions to the participant. Specifically, he was told, ''if you feel yourself becoming aroused, I want you to try and stop it.'' No particular suppression strategies were suggested. The therapist also told the participant that he must watch the assessment videos and not attempt to close his eyes while they were being presented. All arousal assessment procedures and stimuli were the same as in baseline.

Phase 2. If a participant (a) did not suppress their arousal with the procedures used in Phase 1 and (b) passed a pretest criterion of counting backwards from 100, he participated in Phase 2. These assessment sessions were conducted in the same manner as in Phase 1, with the addition of a specific strategy for suppressing arousal. In this phase, the therapist instructed the participant to begin counting backwards from 100 out loud as soon as each video clip started (with the exception of the neutral stimulus), to repeat the sequence if necessary, and to watch the assessment video with eyes open. The purpose of counting out loud was to ensure compliance with the task.

Results and Discussion

The results for the suppression evaluation are shown in Figures 2 through 4. In general, Participant 05 (Figure 2, left) showed lower levels of arousal when the therapist provided the suppression instruction than when the suppression instruction was not provided. Mean millimeter changes from baseline arousal levels in the presence of the male kindergarten (top) stimulus were 17.3 and 10, respectively, and 1.4 and 2.4 during the instruction phases, respectively. Similar results are depicted in the remainder of the panels for the male 6–7 stimulus, the male 8–9 stimulus, the female kindergarten stimulus, the female 6–7 stimulus, and the female 8–9 stimulus. Arousal levels in the presence of the male teen and male adult stimuli and the female teen and female adult stimuli were low in baseline and were not included in the suppression analysis. Furthermore, the more specific suppression instruction used in Phase 2 of this procedure was not necessary for this participant, given the outcomes obtained with the general suppression instruction. At the conclusion of the study, this participant reported anecdotally that he sang songs to himself during the instruction phases, which apparently facilitated suppression of his arousal.

Figures 3 and 4 show the results for Participant 51. Participant 51 had high levels of arousal to the female stimuli exclusively, so only the female stimuli were used to evaluate the effects of the suppression instruction. Furthermore, this participant showed little to no arousal to the neutral stimulus across all sessions. Figure 3 shows the results for the female teen and the female adult stimuli with the Phase 1 suppression instruction. Arousal levels for both the female teen and the female adult stimulus were lower during the suppression instruction sessions than during the baseline sessions. Figure 4 shows the results obtained with the female kindergarten

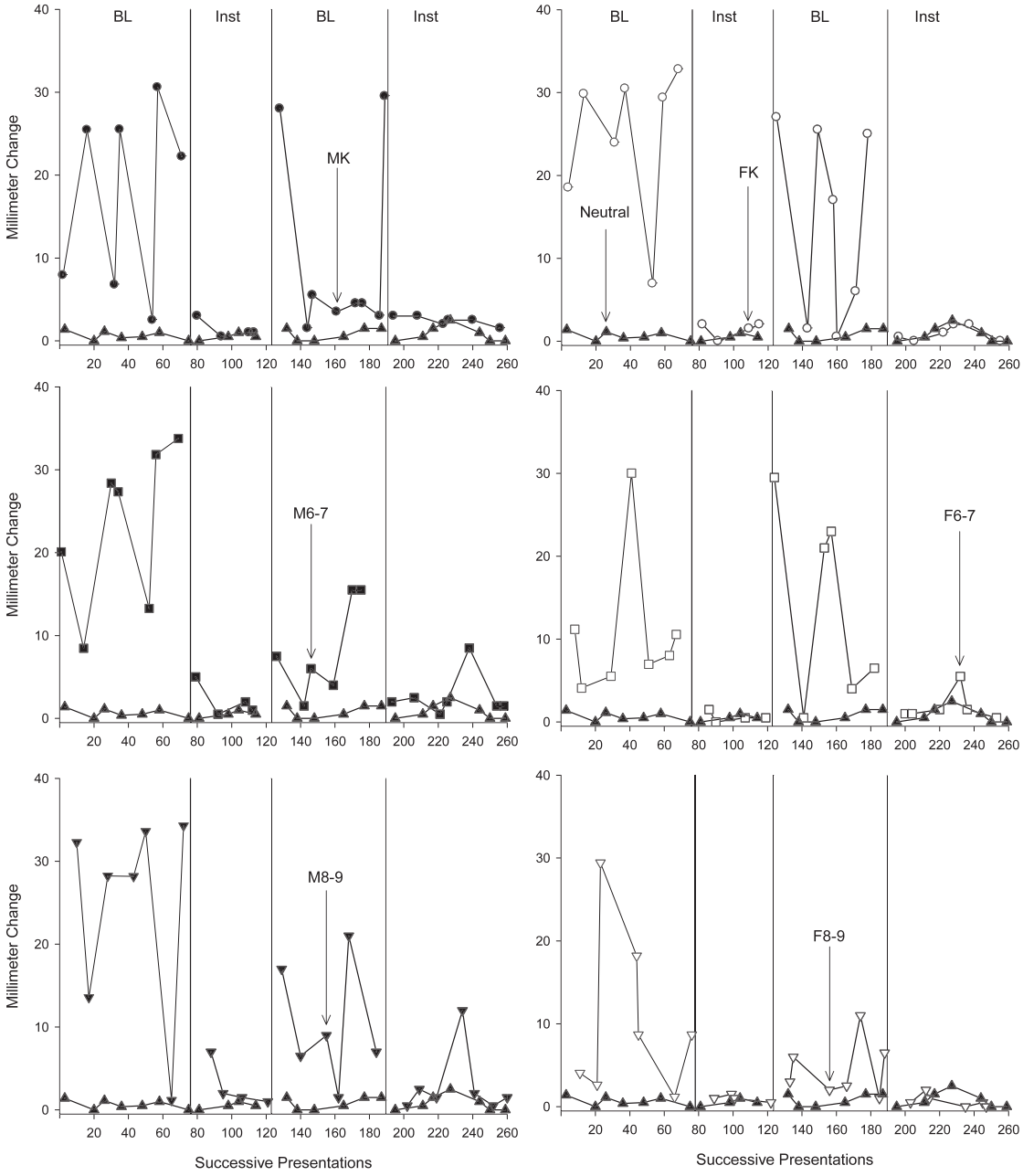

Figure 2. Suppression evaluation results for Participant 05 to the male kindergarten stimulus (MK; top left), the male 6–7 stimulus (M6–7; middle left), male 8–9 stimulus (M8–9; bottom left), female kindergarten stimulus (FK; top right), the female 6–7 stimulus (F6–7; middle right), and the female 8–9 stimulus (F8–9; bottom right).

stimulus, female 6–7 stimulus, and the female 8–9 stimulus. The results suggest that the Phase 1 suppression instruction was not effective in suppressing arousal to any of these latter three age categories; arousal levels during the Phase 1 suppression instruction phases were similar to the arousal levels obtained during baseline. Exposure to the specific arousal suppression strategy in

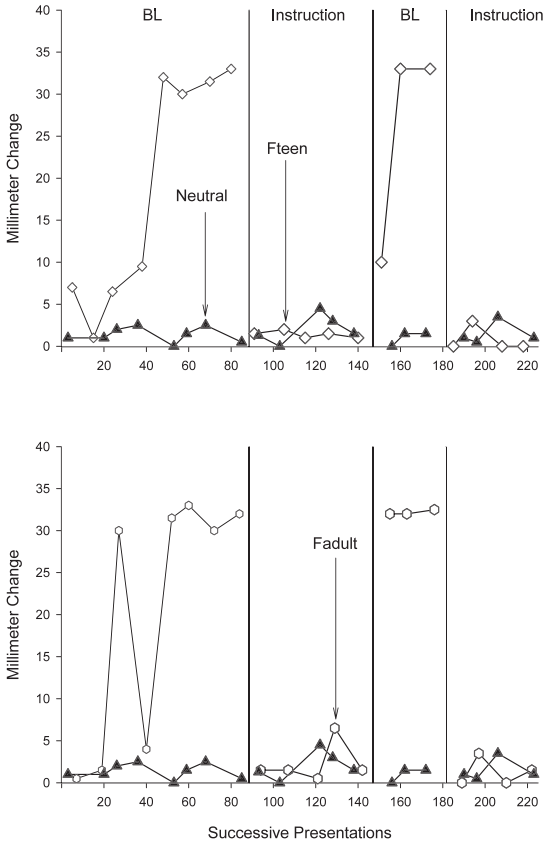

Figure 3. Suppression evaluation results for Participant 51 to the female teen stimulus (Fteen; top), and the female adult stimulus (Fadult; bottom).

Phase 2 produced lower levels of arousal than in previous baseline levels of arousal and the arousal levels obtained when using the Phase 1 suppression instruction. Although lower levels of arousal were obtained with the second suppression instruction, the levels still were elevated for all three age categories, and especially so to the female 8–9 stimulus. In general, however, the lowest levels of arousal obtained for all of the categories occurred during the Phase 2 suppression instruction sessions.

GENERAL DISCUSSION

Taken as a whole, the results of the current studies indicate that both presession masturbation and suppression instructions altered arousal assessment outcomes for sex offenders with

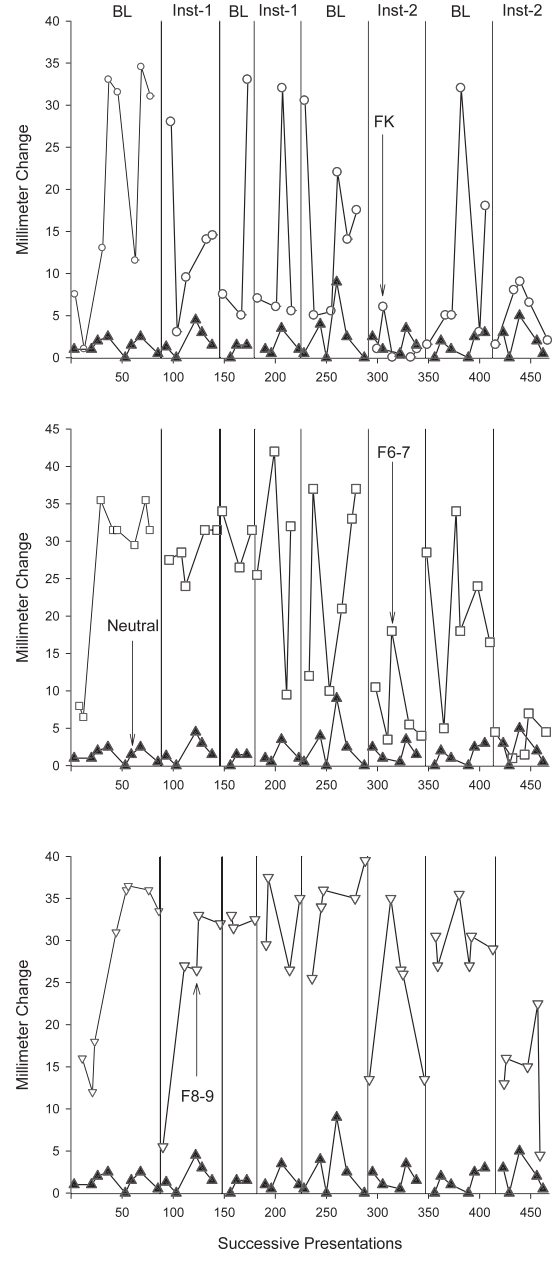

Figure 4. Suppression evaluation results for Participant 51 to the female kindergarten stimulus (FK; top), the female 6–7 stimulus (F6–7; middle), and the female 8–9 stimulus (F8–9; bottom). Inst-1 refers to the Phase 1 instruction and Inst-2 refers to the Phase 2 instruction that involved counting.

developmental disabilities. Furthermore, the within-subject methodology permitted evaluations of these procedures and experimental demonstrations of their effects. These outcomes might have important implications, given that inaccurate arousal assessment outcomes may lead to erroneous treatment or release decisions. For the presession masturbation evaluation, the results indicated that individuals who masturbate before a session artificially may lower arousal levels to deviant stimuli. Although these results may be considered somewhat intuitive, they have not been demonstrated empirically with any sex offender population. Specific control for when an individual masturbates could have a number of practical implications. It is possible that an individual could be monitored for a specified period of time before a session, but in other cases such monitoring may not be possible. For example, monitoring was possible in the current study only because the individuals were in a secure residential facility. Other individuals may come to a specific location only for assessment purposes, so monitoring before the session would be much more challenging.

It is also important to note one particular limitation of the masturbation evaluation. The participant provided a verbal report of having masturbated to ejaculation, but we did not conduct direct measurement in the form of observation or collection of permanent products. Given the potential embarrassment that observation could have caused the participant and the potential risk of handling human excretions, relying on verbal report data was considered to be acceptable. It is possible that the individual did not masturbate to ejaculation when instructed; however, this is not likely, given the outcomes of this investigation. Failure to masturbate to ejaculation may explain arousal levels for the first session of the second presession masturbation phase in which the highest level of arousal to the female 6–7 stimulus was obtained (Figure 1), but this did not occur during any other session. Another possibility is that the low levels of arousal obtained during the presession masturbation phases could have been the result of another variable (e.g., suppression strategies). Future research could evaluate the separate and combined effects of suppression strategies and presession masturbation.

Additional replications are needed to evaluate the overall robustness of the effects. Furthermore, future evaluations should investigate the temporal relation between masturbation completion and the beginning of the session. It is likely that the period of time following ejaculation before another erection can be achieved (i.e., refractory period) varies from individual to individual. This interval could be investigated parametrically by systematically lengthening the interval to determine the maximum possible amount of time after ejaculation when reduced levels of arousal would still be obtained.

The results of the suppression evaluation showed that sex offenders with developmental disabilities can effectively suppress their arousal. Although this effect had been demonstrated in previous studies, it had not been demonstrated with this population nor with repeated measures and reversal designs. In fact, previous suppression evaluations with this population showed an inability to suppress arousal (e.g., Murphy et al., 1983). These outcomes are important, given that assessments can be influenced by suppression even with sex offenders with developmental disabilities.

Varying levels of suppression were obtained with the different suppression instructions. For Participant 05, only the nonspecific suppression instruction was necessary to achieve low levels of arousal across all the categories of stimuli. For Participant 51, however, the nonspecific suppression instruction produced low levels of arousal only to the female teen and female adult stimuli. He suppressed arousal to baseline levels only after he received a more specific suppression instruction, but arousal levels remained somewhat elevated, especially to the female 8–9 stimulus. This pattern of arousal may be an indicator of the strength of an individual's

sexual preferences. For example, the fact that this participant was not able to suppress his arousal to the three younger female age categories with the first instruction may suggest a stronger sexual preference for these categories than for the female teen and female adult stimuli. Future research in this area could investigate additional techniques for suppressing arousal. For example, in addition to providing specific strategies, reinforcing consequences could be provided for keeping arousal levels below a certain predetermined level.

Although the primary purpose of these studies was to evaluate presession variables that might influence assessment outcomes, results also may have some implications for intervention. In fact, from the standpoint of the facility, masturbation and suppression instructions were considered specifically because of the implications for treatment. Future research might investigate how both masturbation and suppression strategies could be useful treatment components of an overall larger comprehensive treatment package. For example, the results of Study 1 may be interpreted from the perspective of motivating operations (e.g., Laraway, Snycerski, Michael, & Poling, 2003). Specifically, presession masturbation may have functioned as an abolishing operation for sexual arousal. Recent ejaculation might momentarily decrease the reinforcing efficacy of sexual contact and decrease the likelihood that individuals seek out potential victims. Therefore, if an individual's refractory period is sufficiently long, he could be taught to masturbate before going into community settings and have reduced levels of arousal when encountering potentially high-risk situations (e.g., being in the presence of children). For this to be effective, specific individualized assessments, as mentioned earlier, should be conducted to determine the time frame in which an individual's arousal levels likely would be reduced.

Similarly, an individual could use any suppression strategies taught during an assessment when out in community settings. For example, given that some participants showed instructional control over their arousal, engaging in the same responses when they detected arousal may reduce the risk of reoffending. Furthermore, both the anecdotal information obtained from Participant 05 and the results of the second phase of Study 2 suggest that competing activities may reduce arousal in more naturalistic settings. Both strategies could have the ultimate function of reducing the chances that arousal may occur and, as a result, the likelihood that these individuals will engage in dangerous behavior. This is especially important, given the fact that arousal to deviant stimuli is still considered to be one of the most relevant variables in predicting the likelihood of future offending (e.g., Barbaree & Marshall, 1988; Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2004). Finally, it is necessary to point out again that these procedures likely would be effective only as part of a more comprehensive treatment program, and we are not recommending them for use as treatment procedures in isolation.

Even as treatment components, however, both the masturbation and suppression procedures have limitations. Individuals would have to engage in these procedures in the context of a self-management program, and, therefore, it is likely that some additional contingencies would have to be introduced to increase the likelihood that the procedures would be followed. Although other individuals could give the suppression instructions, there is no guarantee that they would be followed. Another limitation includes the analogue nature of this study. It is not known if the procedures would produce the same results in community settings. We currently are exploring the use of a mobile plethysmograph for these purposes (given the developmental disabled status of these individuals, they have been adjudicated incompetent to stand trial and, therefore, by rights are given opportunities to attend certain community activities and events). Overall, however, it is important to note that

standard behavioral methods not only allowed an effective evaluation of these arousal suppression variables as assessment components but also helped to demonstrate how the outcomes could be interpreted as potential treatment components.

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Received January 9, 2011
Final acceptance April 18, 2011
Action Editor, Michael Kelley