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Assessing the Generalization of Relapse-Prevention Behaviors of Sexual Offenders Diagnosed With an Intellectual Disability

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Abstract

The generalization of relapse-prevention skills of 10 males residing at a state facility for sexual offenders diagnosed with an intellectual disability was assessed in the community using three different experimental probes: (a) treatment staff (TS), (b) nontreatment staff (NTS), and (c) community adults (CAs). Results indicated a decrease in compliance from the TS to NTS and CAs, with the lowest levels of generalization displayed by offenders who were older and displayed a wider range of paraphilias. The degree of generalization also varied as a function of the contingencies for prevention-plan noncompliance, with higher rates of generalization occurring for violations that were more severely consequated. The implications of the findings for future research in promoting the generalization of relapse-prevention skills of sexual offenders, in general, and those who also exhibit intellectual disabilities, in particular, are discussed.

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A crucial component in the treatment of sexual offenders is the transfer of behavioral skills from the treatment setting to the natural environment. Indeed, numerous authors have reported the lack of generalization of sexual offender treatment behaviors from the clinic to the community and other extratherapeutic settings (Marques, Wiederanders, Day, Nelson, & van Ommeren, 2005; Rea et al., 2003; Rosen & Kopel, 1977). Marques et al. (2005) reported that a number of reoffending participants in a cognitive-behavioral treatment program that included relapse prevention indicated that they never used their self-management strategies in the community. In addition, survival curve analyses of recidivism indicate that some individuals reoffend shortly after release into the community (Marques et al., 2005; Prentky, Lee, Knight, & Cerce, 1997). Although Marques et al.'s survival curve analysis was divided into yearly intervals, a visual analysis indicated that approximately 5% of high-risk offenders and 2% of moderate-risk offenders reoffend within the first 4 months after release into the community. These findings suggest that valid methods of generalization assessment in the natural environment are needed to assess the risk management of sexual offenders.

There has been a paucity of controlled treatment studies within the sexual offender population of those diagnosed with an intellectual disability (Lindsay, 2002; Nezu, Nezu, Klein, & Clair, 2007), with no provision for adequately evaluating the generalization of treatment outcomes. For example, Griffiths, Quinsey, and Hingsburger (1989) reported that addressing deviant sexual behavior through numerous interventions, including reviewing relapse prevention plans that alert support staff of high-risk situations, resulted in no reoffending in 30 cases during a follow-up period of 5 years. However, the authors did not indicate how recidivism was measured or if the behavioral skills were generalized to the natural environment. Finally, the sexual offender population with diagnosed intellectual disabilities may not benefit as well from a cognitive-behavioral, relapse prevention model as the nondisabled sexual offender population due in part to the reliance of verbal skills necessary for group therapy. Therefore, the development of a strong behavioral component of this model is needed for this population to reduce the likelihood of reoffending (e.g., Willner, 2005).

A major limitation of assessing treatment generalization from the clinic to the natural environment is reliance on arrest records or reconvictions. A number of studies have demonstrated that the confidential and anonymous

self-reports of sex offenders' past offenses far exceed their arrest records (Abel et al., 1987; Groth, Longo, & McFadin, 1982; Weinrott & Saylor, 1991). Alternatives to arrest or reconviction rates typically used in evaluation of treatment programs are self-report measures of reoffending or treatment effectiveness. However, self-report measures are also inadequate for determining the efficacy of relapse-prevention behaviors with sexual offenders in general, and particularly with those who also experience intellectual disabilities. The disclosure of deviant behavior in which anonymity is not provided can have severe consequences for the offender that decreases the probability of reporting such acts (Abel, Mittelman, Becker, Rathner, & Rouleau, 1988). In addition, the non anonymous self-reports of offenders can be unreliable in identifying what controls sexual arousal (Hinton, O'Neil, & Webster, 1980; Quinsey, Steinman, Bergersen, & Holmes, 1975; Rea et al., 2003) and in revealing whether they have recently engaged in deviant behavior (Rosen & Kopel, 1977).

Having a clear conceptualization of generalization would appear to be essential in any successful efforts in evaluating it. Stimulus generalization is defined as the occurrence of relevant behavior under different, nontraining conditions without the scheduling of the same events in those conditions as in the training settings (Stokes & Baer, 1977). Generalization across settings and staff relative to relapse prevention is evident when the offender displays the targeted responses during different, nontraining conditions without additional training. For example, generalization could be said to occur if the offender displays the taught response (e.g., choosing appropriate routes, avoiding potential victims, etc.) in the presence of novel individuals or in a setting, such as a store, in which she/he has never received training.

In this study, we investigated the degree to which sexual offenders with a diagnosed intellectual disability adhered to their relapse plans, while accompanied on a community outing with three companions who varied in levels of familiarity (treatment staff [TS], nontreatment staff [NTS], and a community adult [CA]). We first collected compliance with relapse-prevention behaviors for each of 10 participants separately across the three different companion conditions. We examined generalization at an aggregated rather than individual level by pooling compliance data for all 10 participants. That is, we evaluated the degree to which the trained responses generalized across the variable of companion familiarity for the entire group. We also analyzed these data to determine each individual's compliance with his relapse-prevention behaviors in the community setting with all three companions and subsequently identified variables associated with differing levels of generalization displayed by offenders.

Method

Participants

The participants were 10 males between 18 and 28 years of age (mean age of 23.8) from residential units at a Kansas state agency where the first two authors are employed that specializes in the treatment of sexual offenders with diagnosed intellectual disabilities. Prior to the participants' involvement in this study, approval was obtained from Wichita State University's Internal Review Board, the agency's Human Rights Committee, each participant's treatment team, and the agency Superintendent. In addition, procedures were approved by the agency Behavior Review Board and informed consent was obtained from the participants' guardians. If any of the participants demonstrated any distress during the study, they were referred to their respective treatment team for follow up. At any point during the research the participant could withdraw from the study without it affecting their treatment program. As seen in Table 1, all had previously molested children, with a majority (6 of 10) having a history of additional sexual offenses. They had documented Full-Scale IQ scores (Wechsler, 1981, 1997) ranging from 40 to 78 ($M = 63.1$) and all participants had scored 100% on the categories of intimacy, dating, intercourse, and community/risks and hazards of the Socio-Sexual Knowledge and Attitudes Test (Wish, McCombs, & Edmonson, 1980), suggesting that offending was not a function of their lack of knowledge of appropriate socio-sexual behaviors.

Prior to this study, all participants had already demonstrated 18 appropriate, individually trained responses (specific to their deviant behavior) indicated on their relapse-prevention plans (e.g., avoiding high-risk situations, choosing identified low-risk routes, etc.) at least 95% of the time within various community settings, and with various TS for at least the past 6 months as part of their ongoing relapse-prevention program. Compliance percentages were always verified by designated TS.

Design

We used a multiple-element design (Sidman, 1960) across companions to evaluate the degree to which compliance by participants with their relapse-prevention programs generalized to companions who had not been involved in previous training.

Setting

We used a predetermined community outing as the setting for conducting all data collection sessions. The outing involved participants traveling from the

Table 1. Participant Demographics.

Participant	Age	Years in program	Verified offense(s)	Full-Scale IQ[a]
1	24	4.5	Child molestation Incest Forced sexual contact with women	70
2	27	10	Child molestation	73
3	26	3.5	Child molestation	48
4	28	12	Child molestation Forced sexual contact with women	68
5	22	6	Child molestation Bestiality	40
6	26	11	Child molestation Exposing self Forced sexual contact with women	58
7	19	2	Child molestation Forced sexual contact with women	66
8	18	1	Child molestation	64
9	24	1	Child molestation	66
10	24	3.5	Child molestation Exposing self Obscene phone calls	78
M[b]	23.8	5.5	1.9	63.1

[a]Most recent Wechsler Adult Intelligence Scale (WAIS) Full-Scale IQ scores obtained by individualized standardized assessment available in the participants' treatment files.
[b]Mean includes all 10 participants.

agency grounds in an automobile with one adult companion to a designated local discount store on a weekday (no data were taken on the weekend) during a selected time of day (i.e., between 9 a.m. and noon) that was deemed an appropriate time for the participants to shop. The outing was deliberately structured to violate certain aspects of the participants' relapse-prevention plans to evaluate how they would react to such events. This included the pre-

determined route past a school that was taken to the store, shopping for 15 min in the toy aisle within the store, and returning from the store to the agency via the same forbidden route.

Companions

Our clinical experience indicated that numerous individuals in our program who had demonstrated the appropriate skills in the presence of TS did not display these skills with others of varying levels of familiarity (family, strangers, etc.). In addition, when a person responsible for supervising the offender (who was not a TS) inadvertently took them to a place that was in violation of their relapse plan (e.g., McDonald's), they did not protest the violation to the person supervising them. Thus, the companion probe conditions were viewed as a way to assess the generalization of targeted responses. For all three of the conditions listed below, the assigned traveling companion was a male for five of the participants who had a history of offenses against adult females in addition to children. The remaining five participants, assigned a female companion, did not have a history of offenses toward adult females. The three conditions exposed participants to companions who were increasingly unfamiliar and increasingly uninvolved with their training history. No feedback was provided to the participants during the probes regarding their performance. The companion traveling with the participant was identified as one of the following.

TS probe. Two different individuals served as TS companions. One was a 25-year-old male and the other a 40-year-old female, both who had worked directly with the participants in the agency and community settings for at least 6 months and who had given the participants feedback regarding their relapse-prevention plans. Because some of this training had previously occurred at the discount store visited during the community outing, it was expected that a high rate of compliance would be exhibited by all participants in the presence of TS. Levels of compliance that were exhibited in this context may accordingly be regarded as a baseline against which to evaluate participant compliance in the presence of nonfamiliar staff and nonfamiliar adults who are not staff.

NTS probe. Two different individuals served as NTS companions. One was a 35-year-old male and the other a 40-year-old female agency staff member, both who had not worked directly with the participants and had not provided them any feedback regarding their relapse-prevention plans, but were familiar to participants (e.g., staff from a different living unit or treatment team).

CA probe. Two different individuals served as CA companions. One was a 31-year-old male and the other a 30-year-old female from the community, both who had neither worked with nor were familiar to participants and who had not provided them with feedback regarding their relapse-prevention plans.

Training of Companions

We trained all companions based on a protocol designed to guide their behavior during scenarios that could occur during the community outing with participants assigned to them. We designed these training scenarios to familiarize companions with each of the specific 18 behaviors that constituted participants' relapse-prevention plans and to train companions how to reliably report on participant behavior during the outing. For instance, we informed companions that the participants should avoid areas where potential victims might be present (e.g., the toy aisle at a store, fast food restaurants, parks, and schools). Accordingly, walking down the children's clothing aisle would be in violation of the relapse-prevention plan due to the likelihood of children being present. In another scenario, the participant requests the traveling companion take him to the park rather than instructing the companion to avoid the park. In yet another scenario, the participant requests the companion to take him to a pub/restaurant (where children are not served) that is designated as an appropriate destination for participants.

We included scenarios in the companion training with each addressing one of the specific behaviors that were part of each participant's relapse-prevention plan. We continued training until companions could correctly identify compliance for three consecutive, untaught scenarios (one scenario had to be a behavior/place to avoid and one that did not have to be avoided) for each of the 18 relapse-prevention behaviors. Posttrip interviews were conducted that verified the companions used the protocols with 100% accuracy. Companions were instructed not to provide compliance feedback to participants. However, they were instructed to redirect the participant if they needed to go to the restroom, or physically redirect the participant if they touched a child.

Baseline

In the 6 months or more prior to the initiation of this study, the staff of each participant's treatment team collected data on compliance with the 18 relapse-prevention behaviors listed in the individual treatment plans. As indicated in Table 2, these 18 behaviors fell into three different response classes that represented different escalating risks to reoffending and accordingly received differential consequences for noncompliance. O'Donohue and Letourneau (1992)

Table 2. Relapse-Prevention Plan Behaviors.

Class 3 Behaviors (6)
8. Did the participant stay with staff?
9. If potential victims were in close range, did the participant look the other direction?
10. If potential victims were in close range, did the participant avoid talking to them?
11. If potential victims were in close range, did the participant avoid physical contact with them?
If it was in the participant's relapse-prevention plan, did the participant avoid stealing?
If it was in the participant's relapse-prevention plan, did the participant avoid having possession of weapons?
Class 2 Behaviors (7)
4. Once at destination, did the participant avoid areas where potential victims are likely to be present?
5. If potential victims were in close range, did the participant stay as far away as possible?
6. If potential victims were visible from a distance, did the participant avoid by looking the other direction?
7. If potential victims were visible from a distance, did the participant avoid by staying as far away as possible?
Did the participant refrain from horseplay?
Did the participant follow bathroom rules?
Did the participant follow phone rules?
Class 1 Behaviors (5)
1. Did the participant ask to fill out the Pretrip Relapse Prevention Activity Log?
2. Did the participant choose routes unlikely to encounter potential victims?
3. Did the participant ask to fill out the Posttrip Relapse Prevention Activity Log?
Did the participant choose a destination unlikely to encounter potential victims?
Did the participant choose a time unlikely to encounter potential victims?

Note:. Behaviors in italics were not retained for further analysis.

suggested that elements relevant to sexual offending would consist of verbalizations, approach behavior, and touching. Therefore, these overt behaviors were considered proximal acts to reoffending and were used to judge the other behaviors on a continuum of risk and apply a range of commensurate consequences.

The five Class 1 behaviors reflected whether participants completed pre- and posttrip activity logs and structured the outing in ways to minimize

encounters with potential victims. The Relapse Prevention Activity Log is a form that was divided into two parts. The pretrip section was completed by participants before community outings and was an opportunity to role-play responses to possible problematic situations. The posttrip section was completed when participants returned and was used to score how well they complied with their relapse plan. If any inappropriate behavior occurred within this class of responses, staff prompted the correct response and the participant's performance was reviewed during a group-treatment session at a later time. If compliance did not occur on a consistent basis, more severe consequences such as limited or restricted community outings were implemented.

The second class of seven behaviors involved compliance with the relapse-prevention plan at the community destination and included (a) avoiding areas where potential victims were present (e.g., toy section of a store), (b) avoiding looking at potential victims who were visible from a distance and(c)staying as far away as possible, (d) avoiding potential victims who were in close range by staying as far away as possible, (e) avoiding horseplay, (f) following bathroom rules,) and (g) following phone rules (if applicable). If any violations of these behaviors occurred, the staff prompted the correct response and future trips into the community were limited or restricted.

The third class of six behaviors were considered proximal acts to reoffending (sexual and nonsexual) that included (a) avoiding leaving staff supervision, (b) avoiding looking at potential victims who were in close range, (c) avoiding talking to potential victims, (d) avoiding touching potential victims, (e) avoiding stealing (if applicable), and (f) avoiding possession of potential weapons (if applicable). If the participant failed to comply with any of these behaviors, the activity was terminated and the staff member and participant immediately returned to the agency. Additional consequences included sanctions of future trips, restriction and increased supervision on the living unit for some time, and the elimination of other privileges until compliance with rules was demonstrated.

Probe Sessions

We collected probe data for each participant during community outings in the presence of each of the three different companions (plus one follow-up TS session for a total of four unreinforced probe sessions). These sessions lasted for approximately 1 hr and occurred on various weekdays across a 3-month time period. The time of day (9 a.m. to noon) the outings occurred, as previously mentioned, was held constant for each of the different companion conditions. Probe data reflected the degree to which participants correctly displayed each of 18 behaviors relevant to their relapse-prevention plan.

As indicated by italics in Table 2, we did not retain 7 of the 18 behaviors for further analysis We eliminated two Class 3 behaviors, because only one participant had avoided stealing and only five participants had avoided having weapons in their possession identified in their relapse-prevention plans. We omitted two Class 2 behaviors based on their low/no occurrence (respectively, "Did the participant follow bathroom rules?" and "Did the participant follow phone rules?"), and a third as there was no peer present with whom to interact ("Did the participant refrain from horseplaying?"). Finally, we excluded two Class 1 behaviors due to the participants' inability to engage in them insofar as the destination and time chosen for the outings were predetermined ("Did the participant choose a destination unlikely to encounter potential victims?" and "Did the participant choose a time unlikely to encounter potential victims?"). Thus, each probe session resulted in a percentage of participant compliance with the remaining 11 relapse-prevention plan behaviors with that particular companion that served as our study's dependent variable. We conducted the TS probe first with all participants. We expected participants to display 95% compliance or higher with TS as they had already consistently demonstrated this level of performance for at least the past 6 months with familiar TS. We conducted the NTS and CA probes in a counterbalanced order during the second and third community outings. We conducted a second TS probe during the fourth and final outing to determine whether compliance with each participant's relapse prevention plan would return to that demonstrated during the baseline and first TS probe.

Results

As previously mentioned, out of the 18 behaviors that were evaluated during each probe session, 11 could have occurred for all the participants while on the community outing. Thus, these 11 behaviors were deemed clinically relevant by a consensus of the participants' treatment teams (e.g., "If potential victims in close range, did the participant stare?") and, accordingly, were retained for further analysis. We conducted all subsequent analyses reported in this section on these data.

Main Effect for Companion

Figure 1 displays the aggregated compliance data for all 11 clinically relevant behaviors across the three companion types. During the first TS probe, responding was 100% correct. During the NTS probe, correct responding decreased to 55%. During the CA probe, compliance was 44% (11% absolute decrease and a 20% relative decrease from the TS probe). When the second TS probe was implemented, responding returned to 100% correct.

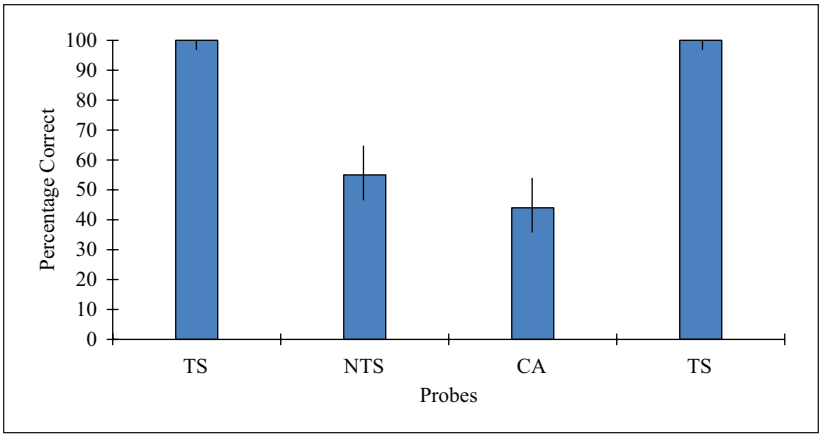

Figure 1. Generalization of compliance across the three companion probes.
Note:. TS = treatment staff; NTS = nontreatment staff; CA = community adult.

We calculated confidence intervals (CI) of 95% for the compliance of the relapse-prevention behaviors within TS, NTS, and CA probes to determine any significant mean differences. Because of the small sample size, we used an Adjusted-Wald Method (Agresti & Coull, 1998). Due to the nonoverlap of the TS CI (97%, 100%) with the NTS CI (46%, 64%) and CA CI (35%, 53%), the TS mean was significantly different from the NTS and CA means. However, due to a large overlap of CIs for NTS and CA (39% overlap), these means were not significantly different from one another (see Figure 1).

Response Analyses

We next examined the summarized data for each participant on each of the 11 behaviors during the NTS and CA probes. We conducted these individual analyses because the aggregate compliance data may have obscured relevant differences by companion type and in generalization at the level of specific relapse-prevention behaviors. The two TS probes were excluded from further analysis because of 100% compliance by all participants.

In the absence of any empirical guidelines for doing so, we logically constructed for the purpose of the response analysis three different levels of generalization (high, partial, and low to no generalization). We defined high generalization as at least 9 of the 10 participants displaying the correct response to a particular clinically relevant behavior, partial generalization as a range of 3 to 8 participants displaying compliance, and low to no

generalization as 2 or fewer of the 10 participants displaying the correct response across the NTS and CA probes. Using these definitions, the behaviors that displayed high generalization were staying with staff, not talking to potential victims, and not having physical contact with them (see Table 3, Behaviors 8, 10, and 11). These three were Class 3 behaviors.

Behaviors that partially generalized across the NTS and CA probes were staying as far away as possible from and looking the other direction if potential victims were in close range (see Table 3, Behaviors 5 and 9). As seen in Table 3, the behaviors of looking the other direction if potential victims were visible from a distance (#6) and staying as far away as possible from them (#7), as well as choosing routes that would avoid encountering potential victims (#2), also partially generalized across the NTS and CA probes. Three of these five behaviors were in Class 2 (5, 6, and 7), while Behaviors 2 and 9 were in Class 1 and 3, respectively.

The three behaviors that displayed low/no generalization were completing the Pretrip Relapse Prevention Activity Log, completing the Posttrip Relapse Prevention Activity Log, and avoiding areas where potential victims were likely to be present (see Table 3, Behaviors 1, 3, and 4). Behaviors 1 and 3 were in Class 1, while Behavior 4 was in Class 2.

To determine if generalization was a function of the differential contingencies for compliance, an analysis of generalization was conducted for the three classes of relapse-prevention behaviors. As indicated in Figure 2, Class 3 relapse-prevention behaviors produced the greatest generalization in the NTS and CA probes, 93% and 80%, respectively. Class 2 behaviors generalized 50% and 30% in the NTS and CA probes, respectively. Finally, Class 1 relapse-prevention behaviors generalized 10% and 13% in the NTS and CA probes, respectively.

We calculated CI of 95% for compliance within each of the three classes of relapse-prevention behaviors during NTS and CA probes to determine any significant mean differences. In the NTS probe, the CIs for the three classes of behaviors were as follows: (a) Class 3 (79%, 98%), (b) Class 2 (35%, 65%), and (c) Class 1 (3%, 26%). Due to non overlapping CIs, we judged the means across the three classes of behaviors to be significantly different from one another (see Figure 2).

In the CA probes, the CIs for the three classes of behavior were lower and as follows: (a) Class 3 (65%, 90%), (b) Class 2 (18%, 46%), and (c) Class 1 (5%, 30%). The Class 3 compliance mean was significantly different from Classes 1 and 2. However, due to a large overlap of CIs for Classes 1 and 2 (43% overlap), these means were not significantly different from one another.

Table 3. Correct and Incorrect Responses Across the 11 Relapse-Prevention Plan Behaviors by Probe Condition for Each Participant.

Relapse- prevention plan behaviors	Experimental probe conditions																				
	TS	**NTS**	**CA**	**TS**	**TS**	**NTS**	**CA**	**TS**	**TS**	**NTS**	**CA**	**TS**	**TS**	**NTS**	**CA**	**TS**	**TS**	**NTS**	**CA**	**TS**
8	•	•	○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
9	•	○	○	•	•	•	○	•	•	•	○	•	•	•	○	•	•	•	•	•
10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
11	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
4	•	○	○	•	•	○	•	•	•	○	○	•	•	○	○	•	•	○	○	•
5	•	○	○	•	•	•	○	•	•	•	○	•	•	•	○	•	•	•	•	•
6	•	○	○	•	•	•	○	•	•	○	○	•	•	•	○	•	•	•	•	•
7	•	○	○	•	•	•	○	•	•	•	•	•	•	•	○	•	•	•	•	•
1	•	○	•	•	•	○	○	•	•	○	○	•	•	○	○	•	•	○	○	•
2	•	○	○	•	•	•	•	•	•	○	○	•	•	○	○	•	•	•	•	•
3	•	○	○	•	•	○	○	•	•	○	○	•	•	○	○	•	•	○	○	•
%	100	27	36	100	100	73	45	100	100	55	36	100	100	64	27	100	100	73	73	100
	Participant 1					Participant 2				Participant 3				Participant 4				Participant 5		

Relapse- prevention plan behaviors	TS	NTS	CA	TS	TS	NTS	CA	TS	TS	NTS	CA	TS	TS	NTS	CA	TS	TS	NTS	CA	TS
8	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
9	•	○	○	•	•	•	•	•	•	•	•	•	•	•	○	•	•	○	○	•
10	•	•	○	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
11	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
4	•	○	○	•	•	○	•	•	•	○	○	•	•	○	○	•	•	○	○	•
5	•	○	○	•	•	•	•	•	•	•	•	•	•	•	○	•	•	○	○	•
6	•	○	○	•	•	•	•	•	•	•	•	•	•	•	○	•	•	○	○	•
7	•	○	○	•	•	•	•	•	•	•	•	•	•	•	○	•	•	○	○	•
1	•	○	○	•	•	○	○	•	•	○	○	•	•	○	○	•	•	○	○	•
2	•	○	•	•	•	○	○	•	•	○	○	•	•	•	○	•	•	○	○	•
3	•	○	○	•	•	○	○	•	•	○	○	•	•	○	○	•	•	○	○	•
%	100	27	27	100	100	64	73	100	100	64	64	100	100	73	27	100	100	27	27	100
	Participant 6					Participant 7				Participant 8				Participant 9				Participant 10		

Note:. See Table 2 for specification of each of the enumerated relapse-prevention plan behaviors listed. TS = treatment staff; NTS = nontreatment staff; CA = community adult; • = correct response; ○ = incorrect response.

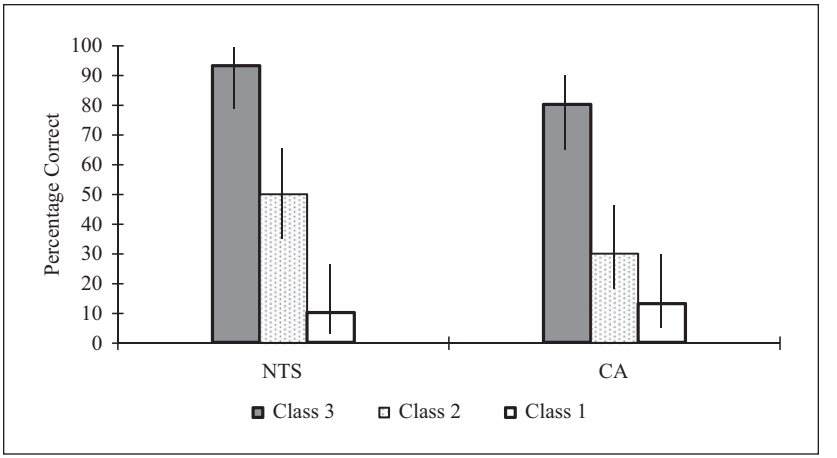

Figure 2. Generalization of compliance across the three classes of relapse-prevention plan behaviors within the NTS and CA probes.
Note: NTS = nontreatment staff; CA = community adult.

Generalization Subgroups

We also conducted a generalization analysis at the level of individuals, rather than responses, by calculating the percentage of the 11 relapse-prevention behaviors displayed by each participant by companion condition with these data presented in Table 3. Responding was 27% in the NTS condition for three participants (1, 6, and 10), 55% for Participant 3, 64% for three participants (4, 7, and 8), and 73% for three participants (2, 5, and 9). For the CA condition, overall compliance was lower in general. Responding was 27% for four participants (4, 6, 9, and 10), 36% for two participants (1 and 3), 45% for Participant 2, 64% for Participant 8, and 73% for two participants (5 and 7).

Our examination of variability in individual participant relapse-prevention plan compliance while in the company of companions who were not TS yielded a trifurcation pattern of responding similar to that identified at the level of individual behaviors. For instance, Participants 5, 7, and 8 appeared to represent a subgroup of "high generalizers." Their compliance was 73%, 64%, and 64%, respectively (67% overall generalization for this trio) in the NTS condition, and 73%, 73%, and 64%, respectively (70% overall) in the CA condition. This resulted in a 3% increase from the NTS to the CA condition and evidence of high generalization from the TS to the NTS and CA probes.

Table 4. Averaged Demographic Data for the Subgroups of Generalizers.

	Participant no.	Age	Years in program	No. of verified paraphilias	Full-Scale IQ[a]
Low/no generalizers	1, 6, 10	24.7	6.3	3.0	68.7
Partial generalizers	2, 3, 4, 9	26.3	6.6	1.3	63.8
High generalizers	5, 7, 8	19.7	3.0	1.7	56.7

[a]Most recent Wechsler Adult Intelligence Scale (WAIS) Full-Scale IQ scores obtained by individualized standardized assessment available in the participants' treatment files.

Participants 2, 3, 4, and 9, by contrast, displayed what might be regarded as partial levels of generalization. Compliance for these four was 73%, 55%, 64%, and 73%, respectively, in the NTS probe (66% overall for the quartet), and 45%, 36%, 27%, and 27%, respectively, in the CA probe (34% overall). This represented a 32% decrease and a 48% relative reduction from the NTS to the CA probes for these four participants. Finally, compliance for Participants 1, 6, and 10 reflected a low level of generalization. Individual and overall responding was 27% in the NTS condition and 36%, 27%, and 27%, respectively, in the CA condition (30% overall). This represented an overall increase of 3% and a relative increase of 11% from the NTS to CA indicative of low/no generalization for these participants.

We conducted a series of one-way analyses of variance using the Kruskal–Wallis test to determine what demographic variables might differentiate these three generalization subgroups. This test provides a nonparametric analysis that can be used even when the number of cases within a subgroup are 5 or fewer (Siegel, 1956, p. 185). We found significant differences among the three subgroups in age, $H(2) = 6.71$, $p = .04$, and in number of verified paraphilias, $H(2) = 6.88$, $p = .03$. We then further analyzed these differences with separate Mann–Whitney tests. As indicated in Table 4, high generalizers were significantly younger ($M = 19.7$) than low/no ($M = 24.7$), $U = 0.00$, $p = .05$, and partial generalizers ($M = 26.3$), $U = 0.00$, $p = .03$, who did not differ from each other. Low/no generalizers displayed a wider array of sexual offenses ($M = 3$) than partial ($M = 1.3$), $U = 0.00$, $p = .02$, and high generalizers ($M = 1.7$), $U = 0.00$, $p = .03$, who did not differ from each other.

Discussion

The aggregate data for the 11 clinically relevant behaviors demonstrated significant performance decrements from the TS to the NTS and CA conditions. However, the difference between the NTS and CA was nonsignificant. One factor possibly accounting for this differential responding is that the NTS and CA did not have a history of providing any corrective feedback to participants

or to appropriate supervisory staff about their behavior. The participants' 100% compliance during the return to the follow-up TS probe verified the level of familiarity effect and suggested that the reduced levels of compliance during the NTS and CA probes were not due to mere temporal degradation.

This study sheds light on the potential processes that may account for the reported lack of generalization of sexual offender treatment behaviors from the clinic to the community and other extratherapeutic settings (Marques et al., 2005; Rea et al., 2003; Rosen & Kopel, 1977). Marques et al. (2005) reported some reoffenders indicated that they never implemented their relapse-prevention behaviors in the community, while Rea and his colleagues (2003) reported the lack of generalized conditioning from the laboratory to the natural environment. Although we did not evaluate reoffending in this study, we did examine a number of putative proximal measures to reoffending (O'Donohue & Letourneau, 1992). Future research that further examines the use of and management of such measures and its effects on reoffending is an important area of continued inquiry.

The lack of generalization to all 11 clinically relevant behaviors across levels of companion familiarity may have clinically significant implications for staff training and further supports the importance of this study. Clinically, it may be necessary for any companion accompanying these individuals to be able to administer the consequences associated with relapse prevention when correct and incorrect responses occur. However, an alternative strategy to the administration of the consequences by all companions is to facilitate generalization through the teaching of sufficient exemplars (Stokes & Baer, 1977). This strategy involves the introduction of enough examples of a concept such that it results in generalization to other untaught exemplars of the concept. Because generalization failure from this perspective is due to an issue of narrow stimulus control, the scope of stimuli that is incorporated into sex offender treatment must be expanded to when, where, and with whom the behavior must change (Sturmey, Taylor, & Lindsay, 2004). Future research that systematically examines the variables that facilitate generalization would be a significant advancement in the literature.

Just as generalization was not exhibited for all clinically relevant behaviors, it was also not demonstrated by all participants. As noted, the three participants who exhibited low generalization were older and had displayed more confirmed paraphilias than partial and high generalizers. This overall finding is consistent with other research indicating sexual deviance as the strongest factor in predicting recidivism (e.g., Hanson, Morton, & Harris, 2003).

However, these demographic variables may not have played as an important role as did the differential contingences that were applied to the clinically relevant behaviors. Class 3 responses that produced the greatest levels of

generalization across all participants (i.e., staying with staff, avoiding touching, and talking to children) were those whose violations resulted in the most severe consequences. Perhaps similar contingencies if applied to other relapse-prevention behaviors may have produced further generalized avoidance of preoffending behaviors. Tighter contingency management might also contribute to the development of self-control, which has been identified by Hanson, Bourgon, Helmus, and Hodgson (2009) as one of five criminogenic variables predictive of reoffending.

To increase self-control, a commitment response could be shaped and strengthened (Rachlin & Green, 1972). A commitment response is a current choice that results in restricting the range of future choices (Rachlin, 2000). Although it is not practical nor possible to totally restrict all future choices in everyday life, structured activities, such as the completion of the Pretrip Relapse Prevention Activity Log by reviewing what avoidance responses should occur at choice points likely to occur while in the community, might assist offenders in making better choices by publicly specifying to unfamiliar companions what avoidance behaviors they should display. Indeed, results of a meta-analysis indicated that informing an offender's significant others of the relapse-prevention model was one of the two strongest components associated with reductions in recidivism (Dowden, Antonowicz, & Andrews, 2003). Extending the same severe consequences for failing to complete the Pretrip Relapse Prevention Activity Log as were applied to the Class 3 responses of talking or touching children, or leaving staff (that resulted in generalization for all participants), might generate a generalized commitment response that informs the unfamiliar companion what future avoidance behaviors (choices) must be exhibited.

An overall appraisal of this study and its findings should also include an acknowledgment and discussion of its limitations. These limitations, perhaps most importantly, include the relatively small number of sex offenders diagnosed with an intellectual disability who participated in this study. This study used only 10 participants within a limited age range of 18 to 28 and whose assessed level of intellectual functioning varied from the moderate to borderline ranges. This relatively small and heterogeneous group of participants limits the generalizability of the study's findings to other sexual offenders diagnosed with an intellectual disability, to nondisabled offenders, and to sex offenders in general. Furthermore, some of the participants in this study had a long history of institutionalization that may have affected their motivation to perform the appropriate responses. Assuming that a reliable technology of stimulus and/or response generalization can eventually be identified for use with sexual offenders diagnosed with an intellectual disability, future research would be necessary, to determine if such technology could be extended successfully to differing populations of offenders.

Given the interest in maintaining individuals in local communities, service delivery systems will increasingly be expected to provide support for sexual offenders diagnosed with an intellectual disability while, at the same time, maintaining community safety. This study suggests that with proper training of staff, supervision of the offender, careful feedback relative to expected behavior, and maintenance of validating procedures such as the polygraph (Ahlmeyer, Heil, McKee, & English, 2000), the goals of an enriched quality of life for sexual offenders diagnosed with an intellectual disability and the maintenance of public safety may be simultaneously approached and, hopefully, ultimately attained.

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References

Abel, G. G., Becker, J. V., Mittelman, M., Cunningham-Rathner, J., Rouleau, J. L., & Murphy, W. D. (1987). Self-reported sex crimes of nonincarcerated paraphiliacs. *Journal of Interpersonal Violence*, *2*, 3-25.

Abel, G. G., Mittelman, M., Becker, J. V., Rathner, J., & Rouleau, J. L. (1988). Predicting child molesters' response to treatment. In R. A. Prentky & V. L. Quinsey (Eds.), *Human sexual aggression: Current perspectives* (pp. 223-234). New York: The New York Academy of Sciences.

Agresti, A., & Coull, B. (1998). Approximate is better than "exact" for interval estimation of binomial proportions. *American Statistician*, *52*, 119-126.

Ahlmeyer, S., Heil, P., McKee, B., & English, K. (2000). The impact of polygraphy on admissions of victims and offenses in adult sexual offenders. *Sexual Abuse: A Journal of Research and Treatment*, *12*, 123-138.

Dowden, C., Antonowicz, D., & Andrews, D. A. (2003). The effectiveness of relapse prevention with offenders: A meta-analysis. *International Journal of Offender Therapy and Comparative Criminology*, *47*, 516-528.

Griffiths, S. D. M., Quinsey, V. L., & Hingsburger, D. (1989). *Changing inappropriate sexual behavior: A community based approach for persons with developmental disabilities*. Baltimore, MD: Paul H. Brooks.

Groth, N. A., Longo, R. E., & McFadin, J. B. (1982). Undetected recidivism among rapists and child molesters. *Crime & Delinquency*, *28*, 450-458.

Hanson, R. K., Bourgon, G., Helmus, L., & Hodgson, S. (2009). The principals of effective correctional treatment also apply to sexual offenders: A meta-analysis. *Criminal Justice and Behavior*, *36*, 865-891.

Hanson, R. K., Morton, K. E., & Harris, A. J. R. (2003). Sexual offender recidivism risk: What we know and what we need to know. *Annals of the New York Academy of Science*, *989*, 154-166.

Hinton, J. W., O'Neil, M. T., & Webster, S. (1980). Psychophysiological measurement of sex offenders in a security hospital. *Archives of Sexual Behavior*, *9*, 205-216.

Lindsay, W. R. (2002). Research and literature on sex offenders with intellectual and developmental disabilities. *Journal of Intellectual Disability Research*, *46*, 74-85.

Marques, J. K., Wiederanders, M., Day, D. M., Nelson, C., & van Ommeren, A. (2005). Effects of a relapse prevention program on sexual recidivism: Final results from California's Sex Offender Treatment and Evaluation Project (SOTEP). *Sexual Abuse: A Journal of Research and Treatment*, *17*, 79-107.

Nezu, C. M., Nezu, A. M., Klein, T. L., & Clair, M. (2007). Sex-offending behavior. In J. W. Jacobson, J. A. Mulick, & J. Rojahn (Eds.), *Handbook of intellectual and developmental disabilities* (pp. 635-655). New York, NY: Springer.

O'Donohue, W., & Letourneau, E. (1992). The psychometric properties of the penile tumescence assessment of child molesters. *Journal of Psychopathology and Behavioral Assessment*, *14*, 123-174.

Prentky, R. A., Lee, A. F., Knight, R. A., & Cerce, D. (1997). Recidivism rates among child molesters and rapists: A methodological analysis. *Law and Human Behavior*, *21*, 635-659.

Quinsey, V. L., Steinman, C. M., Bergersen, S. G., & Holmes, T. F. (1975). Penile circumference, skin conductance, and ranking responses of child molesters and "normals" to sexual and nonsexual visual stimuli. *Behavior Therapy*, *6*, 213-219.

Rachlin, H. (2000). *The science of self-control*. Cambridge, MA: Harvard University Press.

Rachlin, H., & Green, L. (1972). Commitment, choice, and self-control. *Journal of the Experimental Analysis of Behavior*, *17*, 15-22.

Rea, J. A., Williams, D., Saunders, K. J., Dixon, M., Wright, K., & Spradlin, J. E. (2003). Covert sensitization: A generalization analysis in the laboratory and natural environment through the use of a portable-penile plethysmograph. *The Behavior Analyst Today*, *4*, 190-199.

Rosen, R. C., & Kopel, S. A. (1977). Penile plethysmograph and biofeedback in the treatment of a transvestite-exhibitionist. *Journal of Consulting and Clinical Psychology*, *45*, 908-916.

Sidman, M. (1960). *Tactics of scientific research: Evaluating experimental data in psychology*. New York, NY: Basic Books.

Siegel, S. (1956). *Nonparametric statistics for the behavioral sciences*. New York, NY: McGraw-Hill.

Stokes, T. F., & Baer, D. M. (1977). An implicit technology of generalization. *Journal of Applied Behavior Analysis*, *10*, 349-367.

Sturmey, P., Taylor, J. L., & Lindsay, W. R. (2004). Research and development. In W. L. Lindsay, J. L. Taylor, & P. Sturmey (Eds.), *Offenders with developmental disabilities* (pp. 327-350). Hoboken, NJ: John Wiley.

Wechsler, D. (1981). *Manual for the Wechsler Adult Intelligence Scale-Revised*. San Antonio, TX: The Psychological Corporation.

Wechsler, D. (1997). *Manual for the Wechsler Adult Intelligence Scale-Third edition*. San Antonio, TX: The Psychological Corporation.

Weinrott, M. R., & Saylor, M. (1991). Self-report of crimes committed by sex offenders. *Journal of Interpersonal Violence*, *6*, 286-300.

Willner, P. (2005). The effectiveness of psychotherapeutic interventions for people with learning disabilities: A critical review. *Journal of Intellectual Disability Research*, *49*, 73-85.

Wish, J. R., McCombs, K. F., & Edmonson, B. (1980). *The Socio-Sexual Knowledge and Attitudes Test* (1st ed.). Wood Dale, IL: Stoelting.

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