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EMPIRICAL REPORT

Social Validity Assessment of Physical Restraint Intervention by Care Providers of Adults with Intellectual and Developmental Disabilities

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Physical restraint (PR) is sometimes required to manage and treat dangerous and health-threatening behaviors displayed by people who have intellectual and developmental disabilities (IDD) (Luiselli 2011). In some situations, care providers apply PR as crisis (emergency) intervention to control behaviors that were unanticipated and pose a risk to self, others, and the environment (Lennox et al. 2011; Reed et al. 2013a). A second intervention focus is incorporating PR as one component of a behavior support plan. In this case, PR is reserved for select target behaviors within contextually specific conditions. Contemporary standards demand that emergency and planned PR require specialized training of care providers, routine supervision, outcome evaluation, and monitoring of procedural integrity (Luiselli 2011; Reed et al. 2013b).

When applying PR, one or more care providers hold a person's arms, legs, and torso while in a standing, sitting (in-chair, on-floor), or supine position. The immediate effect of PR is immobilizing voluntary movement until an individual can be safely returned to ongoing activities. Despite evidence that PR can be therapeutically effective (Harris 1996; Luiselli 2009, 2011; Matson and Boisjoli 2009), it remains a controversial and unpopular procedure for several reasons. First, the process of holding a person, especially if there is active resistance, is often strenuous, emotionally arousing, and difficult to maintain. This type of interaction poses a second prominent concern, namely, the potential for injury to the implementers and recipients of PR (Spreat et al. 1986; Tilli and Spreat 2009; Williams 2009). Third, PR may function as positive reinforcement for some people (Favell et al. 1978; Magee and Ellis 1988), thereby maintaining rather than decreasing the behaviors targeted for intervention. Finally, unless properly trained and continuously supervised, many care providers are susceptible to misapplying PR and deviating (procedural drift) from implementation protocols.

Noting the concerns about PR, it is surprising that few studies have evaluated social validity (satisfaction and acceptance) among care providers. Social validity assessment is critically important for identifying facets of intervention plans that can be revised and refined for improving service delivery and results (Kazdin 1977; Wolf 1978). Some examples of social validity assessment of care providers for people with IDD are measuring satisfaction and acceptance of resources, supports, and job responsibilities (Pittenger et al 2014), methods to enhance treatment integrity (Strohmeier et al. 2014), receiving performance evaluations (Reid and Parsons 1995), and the goals, content, and methods of applied behavior analysis training programs (Luiselli et al. 2010).

As for the social validity of PR, McDonnell et al. (1993) had high school and college undergraduate students rate the acceptability of three PR methods with individuals who had developmental disabilities. Applying restraint in a chair was judged as being more acceptable than two types of floor restraint. However, this study was limited because the participants were not care providers and had never implemented PR. In a related study, McDonnell and Sturmey (2000) evaluated social validity of PR among (a) special education professionals and classroom aides at schools for students with developmental disabilities, (b) residential care staff working in hospital and community settings for people who had IDD, and (c) high school pupils who had no experience in developmental disabilities. After viewing separate videotapes depicting implementation of chair restraint and two methods of floor restraint, the participants completed the

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Table 1 Assessment domains and statements from the social validity questionnaire

Statements	Assessment domains
S1: Physical restraint is sometimes needed to ensure safety of the adults we serve	Rationale-justification
S2: Physical restraint should only be used if less intensive intervention procedures have failed	
S3: Physical restraint is an acceptable procedure for behavior support	
S4: The training I received taught me how to properly implement physical restraint	Training
S5: The training I received taught me methods to avoid using physical restraint	
S6: The training I received taught me to use physical restraint as one component of a comprehensive behavior support plan	
S7: I am able to implement physical restraint safely without harming the person being held	Safety
S8: I am able to implement physical restraint safely without harming myself	
S9: If needed, physical restraint can be adapted to ensure safety and minimal-to-no risk	
S10: I am confident implementing physical restraint	Implementation-effectiveness
S11: Physical restraint is an effective intervention procedure	
S12: The effective use of physical restraint makes it possible for clients to make progress and achieve a better quality of life	

Treatment Evaluation Inventory (*TEI*: Kazdin 1980). Similar to McDonnell et al (1993), the chair restraint was judged more favorably than floor restraint. Additionally, these findings were consistent across the three participant groups.

Cunningham et al. (2003) extended their earlier research by conducting social validity assessment of PR with undergraduate students, residential care staff, and individuals who had IDD. The study featured the same PR methods and video presentation reported by McDonnell and Sturmey (2000). One of the dependent measures was participant ratings of satisfaction on a 5-point scale (1=high satisfaction, 5=dissatisfaction) to the questions, "How would you feel if you saw this happening,?" and "How would you feel if this happened to you?" The participants also rank ordered their preferences for the three methods of restraint. Results were that all of the participants rated PR negatively, with chair restraint preferred over the other methods.

To summarize, previous social validity assessment of PR has included care providers responding to video depictions of restraint implementation by completing general ratings of acceptability on either a standardized protocol (McDonnell and Sturmey 2000) or to specifically tailored questions (Cunningham et al 2003; McDonnell et al. 1993). These studies did not report whether any of the care providers had ever applied PR, a variable that could have influenced their attitudes and opinions. Furthermore, research could be more expansive by socially validating several components of PR such as intervention rationale, safety, and effectiveness. Finally, studies might be enhanced by sampling care providers from settings in which PR is used as a clinically approved method of behavior support (Luiselli et al. 2011).

In the present study, we performed social validity assessment of PR intervention with care providers at a community-based habilitation program serving adults with IDD. The assessment focused on the rationale-justification, training, safety, and implementation-effectiveness of PR through quantified ratings from a written questionnaire. The study also documented care provider experience with applying PR to determine the relationship between implementation history and acceptance-approval ratings.

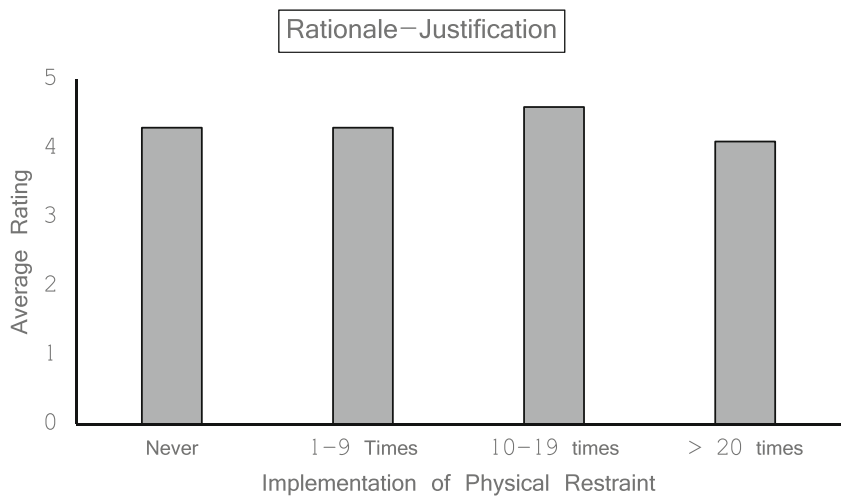

Fig. 1 Average ratings for the rationale-justification somain

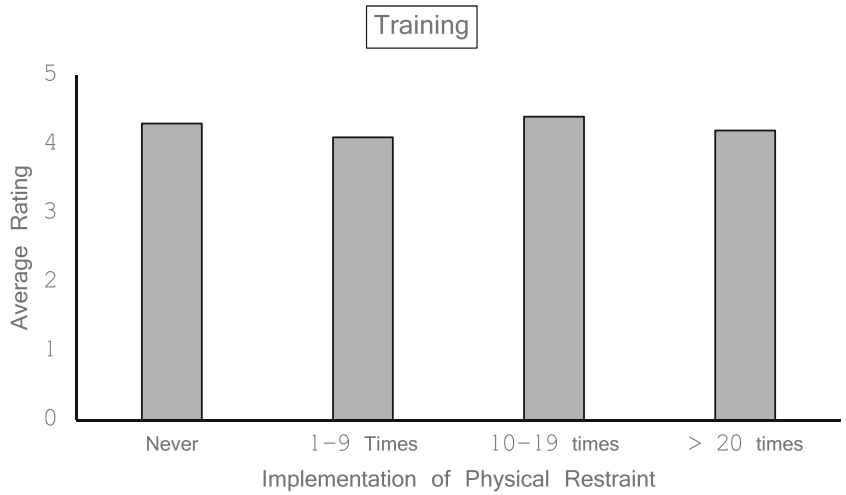

Fig. 2 Average ratings for the training domain

Method

Participants and Setting

The participants were 25 care providers at a community-based habilitation program for adults who had IDD, 24 % female and 76 % male, with an average age of 33.7 years (23–54 years). Their previous work experience with people who had IDD ranged from 1 to 12 years (M=11.2 years). As care providers, the participants were employed at a vocational training day setting and five residential group homes serving 23 adults between 23 and 52 years old.

The participants had multiple responsibilities, including but not limited to implementing instructional and behavior support plans, completing healthcare routines, supervising group activities, administering prescribed medications, and documenting targeted outcome measures. All of the participants had received pre-service and annual recertification training in these and related areas. Preceding their employment, the participants were also trained in physical intervention and management techniques. This training occurred in a standardized course lasting approximately 10 h that was conducted by an accredited independent agency. As a component of this training, the participants learned how to apply several types of PR according to stringent implementation criteria. The training entailed reading instructional materials, observing demonstration scenarios, practicing PR methods, and receiving performance feedback from the trainer. All of the participants achieved competency-based standards before being approved to implement PR with the adults in their care. Furthermore, use of PR was reserved for explicit emergency and planned conditions that were defined in each adult's individualized care plan.

Social Validity Questionnaire

The authors designed the social validity questionnaire after first referencing the existing pertinent literature (Cunningham et al 2003; McDonnell and Sturmey 2000; McDonnell et al 1993). Based on our experiences as trainers and supervisors of

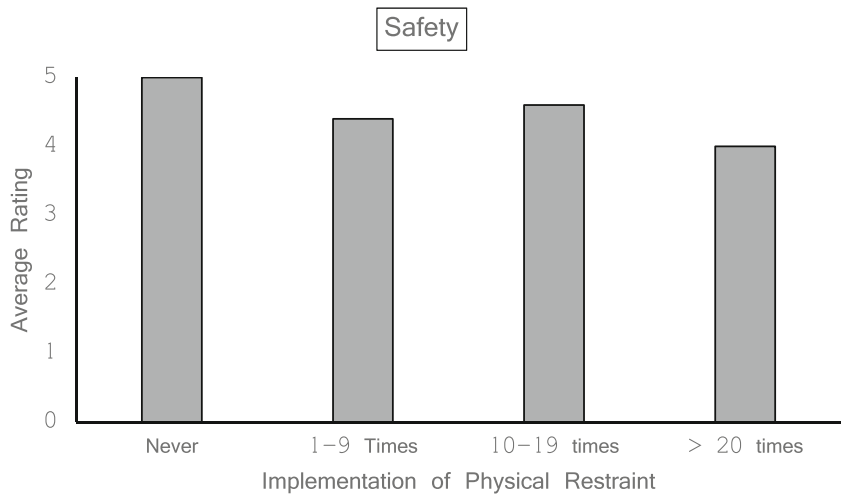

Fig. 3 Average ratings for the safety domain

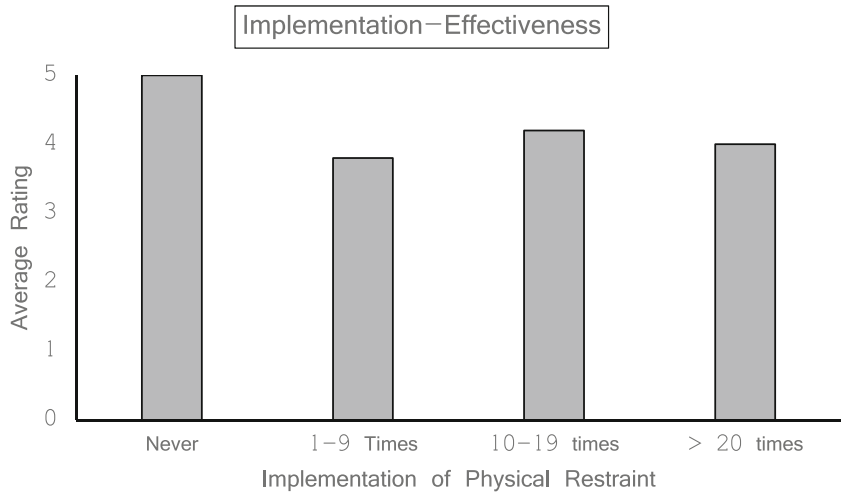

Fig. 4 Average ratings for the implementation-effectiveness domain

physical intervention procedures, we then considered several preliminary factors that might affect caregiver attitudes and impressions about PR. These factors were subsequently categorized into four domains: (a) rationale-justification, (b) training, (c) safety, and (d) implementation-effectiveness. As shown in Table 1, there were three statements per domain. For each statement, the participants were requested to record one of five numerical ratings: 1 (strongly disagree), 2 (disagree), 3 (neither disagree nor agree), 4 (agree), and 5 (strongly agree). The questionnaire also included a section that posed the following question: "How many times have you implemented physical restraint?" The response options to this question were (a) never, (b) 1–9 times, (c) 10–19 times, and (d) more than 20 times.

A supervisor from the habilitation services program distributed the questionnaire to the participants during group meetings at the day setting and group homes. The supervisor informed the participants that completing the questionnaire was voluntary and anonymous (no participant declined). After receiving the questionnaire, the participants independently recorded their responses and returned it to the supervisor. The time required to complete the questionnaire was approximately 5 min.

Data Analysis

We computed the average numerical rating for each statement on the questionnaire. These data were further summarized as an average numerical rating for the rationale-justification, training, safety, and implementation-effectiveness domains. The domain scores were then depicted for the participant groups that had never implemented PR and had implemented PR 1–9, 10–19, and more than 20 times.

Results

Only one participant had never applied PR; of the remaining participants, 32 % had applied PR 1–9 times, 12 % had applied PR 10–19 times, and 52 % had applied PR more than 20 times. Figures 1, 2, 3, and 4 show the average rating for each domain comprising the social validity questionnaire. These results indicated consistently high approval and acceptance within each domain and for all of the participant groups. The average rating across groups was 4.3 for the rationale-justification domain, 4.2 for the training domain, 4.5 for the safety domain, and 4.2 for the implementation-effectiveness domain.

Table 2 Average rating per statement on the social validity questionnaire

Statement	Average rating
Physical restraint should only be used if less intensive intervention procedures have failed	4.5
I am able to implement physical restraint safely without harming the person being held	4.4
I am confident implementing physical restraint	4.4
Physical restraint is sometimes needed to ensure safety of the adults we serve	4.3
Physical restraint is an effective intervention procedure	4.3
The training I received taught me how to properly implement physical restraint	4.3
I am able to implement physical restraint safely without harming myself	4.3
The training I received taught me to use physical restraint as one component of a comprehensive behavior support plan	4.2
If needed, physical restraint can be adapted to ensure safety and minimal-to-no risk	4.2
The training I received taught me methods to avoid using physical restraint	4.0
Physical restraint is an acceptable procedure for behavior support	3.9
The effective use of physical restraint makes it possible for clients to make progress and achieve a better quality of life	3.6

The average participant ratings for each statement on the social validity questionnaire are presented in Table 2. These ratings ranged from an average of 3.6 ("The effective use of physical restraint makes it possible for clients to make progress and achieve a better quality of life") to an average of 4.5 ("Physical restraint should only be used if less intensive intervention procedures have failed").

Discussion

Compared to previous research (Cunningham et al 2003; McDonnell et al 1993; McDonnell and Sturmey 2000), this social validity assessment of PR focused exclusively on care providers of adults with IDD who had been trained to implement restraint. Among our participant sample, only one person had never applied PR. Overall, we found high social validity for the rationale-justification, training, safety, and implementation-effectiveness of PR. These findings are unique in that previous social validity research has not been conducted with the actual implementers of PR within an IDD community-based program.

There are several factors that may have accounted for the present results. First, the setting for the study adhered to strict guidelines for approving PR as an emergency and planned intervention. Additionally, the setting closely supervised procedural implementation and continuously recorded incident data to evaluate clinical effectiveness. As noted previously, the participants had extensive physical management training preceding their employment and ongoing support thereafter. Thus, the attitudes and opinions of the participants should be interpreted in light of a service setting that was devoted to best practices and standards governing PR (Lennox et al 2011; Luiselli 2011; Reed et al. 2013a, b). Different results could be expected from care providers without the same training history and those working in less clinically rigorous programs.

In light of the overall positive findings, the two lowest average ratings from the social validity questionnaire concerned PR as an acceptable intervention for behavior support and the effective use of PR for achieving progress and a better quality of life. These ratings may have stemmed from a generally conservative viewpoint of PR held by the participants, notwithstanding their consistently high approval of the training they received, implementation safety, and other practice parameters.

Limitations to the study include the relatively small number of participants and the single service setting in which it was conducted. Replication of similar social validity assessment is required to determine if our findings generalize to other care providers and programs. Such research could be accomplished by recruiting a larger number of care providers from several comparable service settings. More statements could also be included in social validity questionnaires to evaluate additional components of PR intervention. As further inquiry, it would be informative to compare the PR intervention integrity (DiGennaro Reed and Codding 2011) of care providers with their ratings of social validity.

We emphasize that our findings are not intended to condone or condemn use of PR as intervention for seriously challenging behaviors in people with IDD. Rather, if PR has a role in the proper care of high-risk individuals who have been treatment-resistant, the respective care providers should be routinely assessed in order to elicit their feedback and revise procedures accordingly. Nonetheless, some practitioners may interpret these results by too readily accepting PR in favor of less restrictive procedures, an erroneous conclusion we do not endorse. Of course, acceptance of PR is likely influenced by many factors, including comparative effectiveness with other intervention methods (Cunningham et al 2003; McDonnell and Sturmey 2000; McDonnell et al 1993), treatment outcome, and untoward consequences such as personal injury. As it pertains to PR, the strength of social validity assessment is enabling program administrators and supervisors to develop and sustain the most effective, safe, justified, and humane implementation policies and procedures.

References

Cunningham, J., McDonnell, A., Easton, S., & Sturmey, P. (2003). Social validation data on three methods of physical restraint: views of consumers, staff, and students. *Research in Developmental Disabilities, 24*, 307–316.

DiGennaro Reed, F. L., & Codding, R. S. (2011). Intervention integrity assessment. In J. K. Luiselli (Ed.), *Teaching and behavior support for children and adults with autism spectrum disorder: a practitioner's guide* (pp. 38–47). New York: Oxford University Press.

Favell, J. E., McGimsey, J. F., & Jones, M. L. (1978). The use of physical restraint in the treatment of self-injury and as positive reinforcement. *Journal of Applied Behavior Analysis, 11*, 225–241.

Harris, J. (1996). Physical restraint procedures for managing challenging behaviors presented by mentally retarded adults and children. *Research in Developmental Disabilities, 17*, 99–134.

Kazdin, A. E. (1977). Assessing the clinical or applied importance of behavior change through social validation. *Behavior Modification, 1*, 427–452.

Kazdin, A. E. (1980). Acceptability of time out from reinforcement procedures for disruptive child behavior. *Behavior Therapy, 11*, 329–344.

Lennox, D., Geren, M., & Rourke, D. (2011). Emergency physical restraint: considerations for staff training and supervision. In J. K. Luiselli (Ed.), *The handbook of high-risk challenging behaviors in people with intellectual and developmental disabilities* (pp. 271-292).

Luiselli, J. K. (2009). Physical restraint of people with intellectual disability: a review of implementation reduction and elimination procedures. *Journal of Applied Research in Intellectual Disability, 22*, 126–134.

Luiselli, J. K. (2011). Therapeutic implementation of physical restraint. In J. K. Luiselli (Ed.), *The Handbook of High-Risk Challenging Behaviors in Intellectual and Developmental Disabilities* (pp. 243–256). Baltimore: Paul H. Brookes.

Luiselli, J. K., Bass, J., & Whitcomb, S. (2010). Training knowledge competencies to direct-care service providers: outcome assessment and social validation of a training program. *Behavior Modification, 34*, 403–414.

Luiselli, J. K., Sperry, J. M., & MaGee, C. (2011). Descriptive analysis of physical restraint (protective holding) among community living adults with intellectual disability. *Journal of Intellectual Disabilities, 15*, 93–99.

Magee, S. K., & Ellis, J. (1988). The detrimental effects of physical restraint as a consequence for inappropriate classroom behavior. *Journal of Applied Behavior Analysis, 34*, 501–504.

Matson, J. L., & Boisjoli, J. A. (2009). Restraint procedures and challenging behaviors in intellectual disability: an analysis of causative factors. *Journal of Applied Research in Intellectual Disabilities, 22*, 111–117.

McDonnell, A. A., & Sturmey, P. (2000). The social validation of three physical restraint procedures: a comparison of young people and professional groups. *Research in Developmental Disabilities, 21*, 85–92.

McDonnell, A., Sturmey, P., & Dearden, B. (1993). The acceptability of physical restraint procedures for people with a learning disability. *Behavioral and Cognitive Psychotherapy, 21*, 255–264.

Pittenger, A., Barahona, C., Cavalari, R. N. S., Parent, V., Luiselli, J. K., & DuBard, M. (2014). Social validity assessment of job satisfaction, resources, and support among educational service practitioners for students with intellectual and developmental disabilities. *Journal of Physical and Developmental Disabilities, 26*, 737–745.

Reed, D. D., DiGennaro Reed, F. D., & Luiselli, J. K. (2013) (Eds.), *Handbook of crisis intervention and developmental disabilities.* New York: Springer.

Reed, D. D., Luiselli, J. K., Miller, J. R., & Kaplan, B. A. (2013b). Therapeutic restraint and protective holding. In D. D. Reed, F. DiGennaro Reed, & J. K. Luiselli (Eds.), *Handbook of crisis intervention and developmental disabilities* (pp. 107–120). New York: Springer.

Reid, D. H., & Parsons, M. B. (1995). *Motivating human services staff: supervisory strategies for maximizing work effort and work enjoyment*. Morganton: Habilitative Management Consultants Inc.

Spreat, S., Lipinski, D., Hill, J., & Halpin, M. E. (1986). Safety indices associated with the use of contingent restraint procedures. *Applied Research in Mental Retardation, 7*, 475–481.

Strohmeier, C., Mule, C., & Luiselli, J. K. (2014). Social validity assessment of training methods to improve treatment integrity of special education service providers. *Behavior Analysis in Practice, 7*, 15–20.

Tilli, D. M., & Spreat, S. (2009). Restraint safety in a residential setting for persons with intellectual disabilities. *Behavioral Interventions, 24*, 127–134.

Williams, D. E. (2009). Restraint safety: an analysis of injuries related to restraint of people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities, 22*, 135–139.

Wolf, M. M. (1978). Social validity: the case for subjective measurement or how applied behavior analysis is finding its heart. *Journal of Applied Behavior Analysis, 11*, 202–214.