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Implementing a Modified Version of Parent Management Training (PMT) with an Intellectually Disabled Client in a Special Education Setting

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In this article the author discusses how an evidence-based practice was modified to treat an intellectually disabled client with oppositional behavior. Parent Management Training was modified to treat the client. A single-subject A–B design was used. Behavior improved from 1.57 (SD = .78) to 0.63 (SD = .71) episodes of negative behavior per day from baseline to intervention, and findings were significant (t = 2.83, p = .01). Follow-up with the family indicated sustained improvement one year after the intervention was discontinued. Consideration should be given to using principles of Parent Management Training to create formal plans for addressing problem behaviors across settings with intellectually disabled clients.

KEYWORDS Cognitive disability, parent management training, single subject design

INTRODUCTION

It is estimated that 1.5 million children and adults have intellectual disabilities in the United States (CDC, 2005). Additionally, children and adolescents with intellectual disabilities are estimated to experience psychopathology at two to three times the rate of their non-disabled peers (Sanders, Muzzucchelli, & Studman, 2004; Tonge, 1999). While it is difficult to categorize these behavioral and mental health problems using current classification systems (i.e., ICD-10, DSM-IV-TR) (American Psychiatric Association, 2000; World

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Health Organization, 1993) researchers have identified some of the most common mental health problems addressing this population. Among these are anxiety, disruptive behaviors, aggression, and difficulty relating to others (Quine, 1986; Tonge, 1999). Despite this, Kazdin (2005) notes that behavioral difficulties in individuals with intellectual disabilities have not been widely studied and may be underestimated. In this article the author focuses on how behavioral difficulties were addressed in a client with an intellectual disability using a modified form of an evidence-based intervention.

BACKGROUND

Behavioral and mental health problems in children and adolescents with intellectual disabilities can pose challenges for these individuals and their family members (Hassall & Rose, 2005; Hodapp, Dykens, & Masino, 1997; Quine & Pahl, 1985). Quine and Pahl (1985) found that caregiver stress is highest for families in which intellectually disabled children exhibit problem behaviors. Hodapp et al. (1997) confirmed this finding and found a positive correlation between the number of behavior problems and the level of parental stress. Hassall and Rose (2005) concluded that factors that influence parental stress in families with children with intellectual disabilities include child, family, and environmental characteristics, including the child's behavior, which are mediated by parents' cognitive styles.

In order to address problem behaviors in children and adolescents with intellectual disabilities, several treatment models have emerged which are evidence based. It is important to consider using evidence-based mental health interventions in practice because these interventions have empirical evidence to support their effectiveness, and their implementation is increasingly encouraged or even mandated by regulators and program funders (USHHS SAMHSA, 2008; Samuels, Schudrich, & Altschul, 2009; Thyer, 2006). Thyer (2006) defines a systematic method for selecting and implementing evidence-based practices (EBPs) in social work. This includes defining an answerable question (i.e., defining the problem clearly in a way that can be answered), searching for evidence to answer the question, evaluating the evidence, integrating the evidence into practice while considering the social worker's skills and the client's values and circumstances, and evaluating the effectiveness of the intervention. The National Registry of Evidence Programs and Practices (NREPP) assists those using this methodology by listing empirically-based mental health and substance abuse interventions (USHSS SAMHSA, 2008). While other sources of EBPs exist, NREPP can serve as a first step in identifying possible EBPs. Currently, NREPP lists six programs that address problem behavior in children and adolescents through parent-based interventions: Active Parenting Now, Celebrating Families, New Beginnings Program, Parenting Through Change, Parenting Wisely, and Triple P—

Positive Parenting Program (USHHS SAMHSA, 2008). Only one of those programs, Triple P—Positive Parenting Program, has a component for assisting parents of intellectually disabled children and adolescents address problem behaviors (Sanders, 1999).

Tonge (1999) suggests that effectively treating behavior problems in children and adolescents with intellectual disabilities requires a multi-modal approach. First, there should be a holistic approach to engagement by working to build a positive relationship with parents, other caregivers, and the child or adolescent whenever possible. Diagnosis and treatment should be comprehensive and include biopsychosocial factors. Treatment may involve one or more approaches including parent support, skills training, behavioral interventions, modifications to the social and educational environment, and modification to psychological treatments. Additionally, Tonge (1999) notes that behavior management using operant conditioning can be effective in addressing problem behaviors. Finally, behavioral approaches have been widely used and have found to be an effective means for reducing or eliminating problem behaviors in individuals with intellectual disabilities (Kazdin, 1997, 2005; Sanders et al., 2004; Sofronoff & Farbotko, 2002; Tonge, 1999)

Stepping Stones Triple P (SSTP), an evidence-based practice listed on NREPP, uses various levels of intervention "to help parents develop effective management strategies for dealing with a variety of childhood behavior problems and developmental issues" (Sanders et al., 2004, p. 266) for families with a child with an intellectual disability. Depending on the individual needs of the family, intervention may include psychoeducation, telephone support, practical problem-solving advice, and management of family stress. The program can be delivered in a variety of modalities including in-person individual sessions, groups, or telephone support. Program content can be delivered by a variety of professionals including social workers, psychologists, speech pathologists, and teachers (Sanders et al., 2004).

Treatments that have found to be efficacious for oppositional behavior in non-disabled children and adolescents include anger control therapy, multisystemic therapy (MST), parent management training (PMT), and problem-solving skills training (Kazdin, 2005).

THE CASE OF "B"

In this article the author will focus on the use of a modified form of PMT in an intellectually disabled client. "B" was a 21-year-old cognitively impaired female client presenting with oppositional behavior at the time of the current study. In addition to her intellectual deficits, she was also visually impaired. "B" had the cognitive functioning of a $4\frac{1}{2}$ year old and lived at home with her parents. She was enrolled full-time in a high school program, but was "aging out" at the conclusion of the school year. Her parents had

secured a private residential placement for her upon graduation, but the agency was reconsidering their willingness to accept the client because of her pervasive oppositional behavior. Oppositional behaviors included refusing to do assigned school work, refusal to complete vocational assignments, fighting physically and verbally with parents, teachers, and other students, and throwing temper tantrums.

Anger control therapy, MST, and problem-solving skills were ruled out as inappropriate interventions for this client because all three have cognitive-behavioral underpinnings, and "B"'s cognitive deficits precluded her from successfully engaging in such an intervention. While there was no conclusive evidence that PMT would be successful in a client with intellectual disabilities, it has been applied to disabled clients and has been used in special education classrooms (Kazdin, 1997). It was hypothesized that PMT could be helpful due to the wide age range with which PMT has been successful. Additionally, individuals with intellectual disabilities have been shown to learn effectively with operant condition, one of the theories upon which PMT is based (Kazdin, 2005; Yule & Carr, 1980).

Features of PMT

PMT is a highly researched, evidence-based intervention that is used to treat oppositional, aggressive, and anti-social behavioral problems in children and adolescents. It is a behavioral approach based on operant condition and social learning theory (Kazdin, 2005).

PMT is a unique intervention because it teaches parents to be their children's therapists. That is, while successfully applied to children and adolescents displaying oppositional behavior and conduct disorders, the subject of the intervention is the parents of the child experiencing difficulty (Kazdin, 2005).

Like other behaviorally based interventions, PMT focuses on the relationship between problem behaviors and events that precede and follow those behaviors. Parents are taught specific skills through a variety of training techniques that are ultimately used with their oppositional children (Kazdin, 2005). It is thought that parents, in part, have contributed to negative behavior and "aggressive children are inadvertently rewarded for their aggressive interactions." (Kazdin, 2005, p. 28).

Positive reinforcement is another key characteristic of PMT. Parents are taught to reinforce positive opposites: pro-social alternatives to their child's oppositional behaviors. Consequently, this intervention relies on the use of praise and tokens to reinforce prosocial behaviors (Kazdin, 2005).

PMT is based on two different, but complementary behavioral learning theories—operant conditioning and social learning theory. Social learning theory postulates that people learn by observing and modeling the behaviors, attitudes, and emotional reactions of others. It proposes that an individual

learns when he or she organizes and interprets modeled behavior. The more that a behavior is codified with words, labels, or images, the better the behavior will be learned and retained. Once a behavior is learned, it will be reproduced according to the characteristics and abilities of the observer/learner (Bandura, 1971).

Operant conditioning "emphasizes the control that environmental events exert on behavior" (Kazdin, 2005, p. 22). Like social learning theory, operant conditioning examines the correlation between antecedents, behaviors, and consequences. It suggests that animals, including humans, can learn or unlearn behaviors with sufficient reinforcement (Newman & Newman, 2003).

Operant conditioning was originally theorized to explain how animals learn. It was later determined through experimentation on healthy adults and children with mental retardation and autism that people learn in much the same way as animals (Kazdin, 2005). That is, the learning, continuation, or extinction of a particular behavior, is based on the reinforcement that the individual associates with that behavior (Newman & Newman, 2003).

Modification of PMT to Accommodate the Setting

Several modifications were made to PMT's scripted intervention in order to accommodate the client and the setting. The rationale for these modifications was based on the client's intellectual disability, time constraints (i.e., availability of parents and staff for sessions combined with the lateness in the school year), and the desire to include both parents and teachers in the intervention equally.

A major modification to the way PMT was implemented in this setting was the training of both the parents and teachers as if they were a single unit. That is, the parents and teachers met together with the social worker during weekly sessions. In some instances, sessions were delivered to the parents over the phone because of transportation problems while the teachers attended sessions in-person. Between sessions, coaching was provided to teachers in the classroom setting and to parents over the phone. Additionally, "B" worked directly with the social worker to understand the reasons for the intervention and to identify rewards that were meaningful to her that could be delivered both at school and at home. Training Sheets were developed after each session to remind parents and teachers throughout the week about the current behavior modification plan. They were reviewed with both parents and teachers in order to encourage consistent adherence to the intervention. A sample Training Sheet is provided in Appendix A. Due to "B"'s disabilities, the intensity of the intervention and changes to Training Sheets were made only when "B" had clear mastery over previous portions of the intervention.

Finally, the total number of sessions was reduced from the recommended 12 sessions (Kazdin, 2005) to 7 because of time constraints. The majority of PMT content was delivered in the seven sessions, as topics

were added and sessions lengthened to accommodate the clients and the time schedule. Additional coaching took place as needed for parents over the phone and for teachers in person to make up for the missing training sessions.

METHODS

Because the intervention was implemented during the spring of "B"'s final year of high school, a single-subject A–B design was utilized due to time constraints. The intervention consisted of increasing behavioral demands on "B" which were reinforced through rewards or punishments.

Progress was measured by teachers each school day. Teachers were asked to count the number of times "B" was oppositional daily. This method of data collection was selected because it was easy for the teachers to record, and, with two teachers in the classroom, inter-rater reliability could be validated easily. Additionally, oppositional behavior was meaningful to count because each episode typically lasted between 20 and 60 minutes and was seen as difficult for the teachers to manage.

An additional measure, the Social-Emotional Skills Rating Scale—Adult Form (SESRS-A) (Gajewski, Hirn, & Mayo, 1998), was completed by the main classroom teacher and social worker at two points in order to further validate behavioral observations.

Baseline data were captured each school day beginning on the day before the first session and continuing until the second session. Intervention data was captured each school day beginning on the day after the second session during which parents and teachers met with the social worker to review the first PMT Training Sheet.

All data were recorded and analyzed using SINGWIN software (Auerach, Schnall, & LaPorte, 2009).

RESULTS

During the baseline ($n = 7$), oppositional behaviors varied between one and three times daily with a mean of 1.57 episodes per day (SD = 0.78). Celeration lines are used in single-subject designs to connect the midpoints of the first and second halves of a phase and can be used to depict an overall trend within a phase (Bloom, Fischer, & Orme, 2006). A celeration line of baseline data showed a slightly worsening trend during the baseline period and can be seen in Appendix B as "Celeration Graph of Oppositional Episodes." During this same time, the teacher and social worker independently completed the SESRS-A with scores of 76 and 74, respectively. With a mean of 75 and SD = 1.41, this value indicates a moderately low level of social functioning with a high degree of inter-rater reliability.

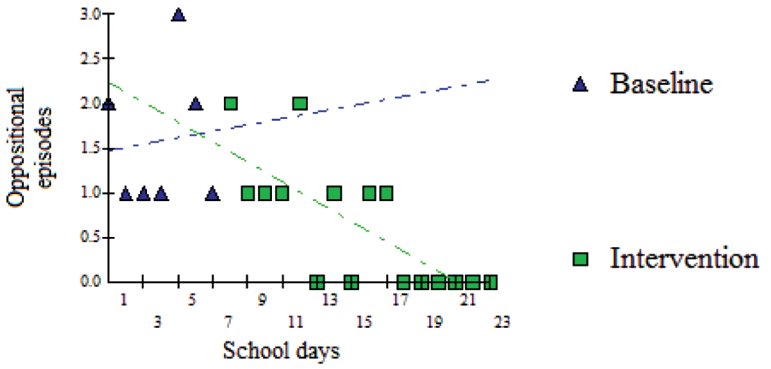

FIGURE 1 Celebration graph of oppositional episodes.

During the intervention ($n = 16$), oppositional behaviors varied between 0 and 2 times daily with a mean of 0.63 episodes per day (SD = 0.71). A celeration line showed a steep decline during the intervention period. This graph, labeled "Celeration Graph of Oppositional Episodes," can be seen in Appendix B. The difference in the means between baseline and intervention is depicted graphically in Appendix B as "Comparison of Means between Baseline and Intervention." At the end of the intervention period, the teacher and social worker again completed the SESRS-A with scores of 142 and 140, respectively. With a mean of 141 and SD = 1.41, this value indicates a moderately high level of social functioning with, again, a high degree of inter-rater reliability.

A student's *t*-test was done to compare the mean number of oppositional behaviors between baseline and intervention, and it was found that the differences in the means were statistically significant ($t = 2.83$, $df = 21$, $p = 0.01$). The effect size for the decrease in observed oppositional behaviors per

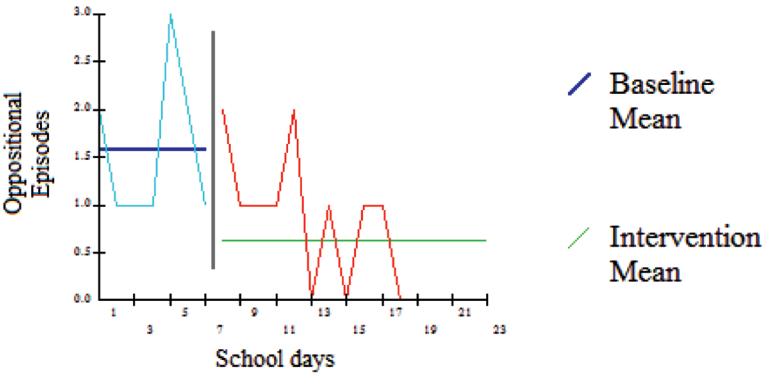

FIGURE 2 Comparison of means between baseline and intervention.

day between baseline and intervention was 0.4 (*d-index* = −1.28), which indicates a moderate change.

A similar comparison was done with SESRS-A scores. A student's *t*-test indicated that the difference in means for these scores was statistically significant ($t = -46.67$, $df = 2$, $p = 0.00$). The effect size for the increase in SESRS-A scores between baseline and intervention was greater than 0.5 (*d-index* = 46.67), which indicates a large change. While there was scant data for SESRS-A scores, analysis of these data corroborate the change noted in the behavioral observations and is clinically significant particularly because these findings are congruent with the observed behavioral changes.

DISCUSSION

The use of this modified form of PMT was effective during the treatment period. While several modifications were made to the EBP for this client, the most notable of these was bringing together the parents and teachers for training and the use of Training Sheets to encourage consistent implementation of the behavioral plan across the school and home settings. These modifications were made for the purpose of providing "B" with consistent expectations at home and at school, the two settings in which she spent most of her time. Anecdotal follow-up with "B"'s family indicated a sustained improvement in her behavior at her adult residential placement more than one year after the intervention was discontinued.

Implications for Social Work Practice

Professional social workers have the capacity to contribute to the evidence of effective behavioral and mental health practices while continuing to improve the lives of clients, including those with intellectual disabilities.

As previously discussed, behavioral and mental health problems are more prevalent in those with intellectual disabilities than in the general population. While social workers frequently work in the field of intellectual disabilities, there is a dearth of literature on the ways in which social workers directly interface with intellectual disabled clients. A recent database search of ProQuest Social Science Journals (last date April, 2010) returned just 14 documents for the search criteria "intellectual disability and social work practice." Within that literature, only two roles were mentioned for social workers in the field of intellectual disabilities: that of agency administrators and case managers (Bigby, Fyffe, & Ozanne, 2007; Bigby, Ozanne, & Gordon, 2002; Janicki, McCallion, & Dalton, 2002). Russo–Gleicher (2008) notes that mental health interventions have largely been rejected by social workers and other mental health professionals working with this population because psy-

chotherapy has not been viewed as helpful with those who are cognitively impaired. The above study indicates other points of intervention for social workers dealing with intellectually disabled clients who have behavioral or mental health problems. Coordinating and implementing interventions across settings may help address the behavioral and mental health needs of this population, but this type of care likely needs to be managed by skilled social work professionals.

Evidence-based practice can be viewed as two-tiered—using evidence to inform practice and using practice to collect evidence. In the above study, a modified EBP was used to intervene with "B." The existing evidence surrounding the effectiveness of PMT led the author to hypothesize that the intervention was likely to be helpful to the client. Another way in which evidence is used in social work practice is in the documentation of successful practice techniques. This is done in order to inform the field and build evidence for identifying effective practices (Auerbach & Mason, 2011). This has been the case in many areas of social work, but building evidence through single-subject design has been used extensively in the area of special education (Horner et al., 2005). Social workers dealing with intellectually disabled clients are often in the unique position to use existing evidence to intervene effectively with clients directly and build additional evidence regarding effective practices by documenting the work done with clients.

Future Studies

While additional study is needed with a larger population to determine the generalizability of the current findings, consideration should be given to using principles of PMT to create a formal plan for reducing problem behaviors across settings with other cognitively impaired students and young adults.

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APPENDIX A

Sample PMT Training Sheet B's Behavior Modification

Every time we work on behavior modification, there are a few very important things to remember:

1. Consistency is the most important piece. ANY inconsistent reinforcement will only encourage negative behavior; therefore, it is of the utmost importance that we always follow the plan (which is why we are writing it out).
2. There will always be a positive reinforcement component to the behavior modification plan. This is designed to encourage positive behavior. "B" has chosen several positive reinforcers that she can earn after she gets a certain number of stamps.
3. There will always be a punishment component to the behavior modification plan. This is designed to extinguish negative behavior.

The first part of the program will ONLY focus on negative behaviors toward authority figures (i.e., teachers, administrators, parents, personnel at B's vocational placement).

Currently, B earns a stamp every time she:

- Complies with any request from a person in authority
- Asks for clarification of a request from a person in authority

Currently, B will face a negative consequence for:

- Any refusal or ignoring of a request from a person in authority
- Any arguing with a person in authority

"B"'s selection of rewards (after earning 3 stamps):

1. Watching a video for 15 minutes
2. Reading a book of her choice for 15 minutes
3. Building a puzzle for 15 minutes
4. Drawing with markers and colored paper for 15 minutes
5. Solitaire on the computer for 15 minutes

Negative consequences should "fit the crime:"

1. Time out—Exclusion from group activities/solitary confinement for about 20 minutes.
2. NOTE: "B" must make up any work she misses while she has been in "time out."
3. Upon releasing "B" from timeout, please be sure that she can state the reason for her punishment.