Lessons Learned Through Implementing a Positive Behavior Support Intervention at Home: A Case Study on Self-Management with a Student with Autism and His Mother

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Abstract: As positive behavior support (PBS) interventions have received increased attention as an effective means to address problem behaviors of individuals with disabilities in family contexts, partnerships with families are crucial for the application of PBS interventions with families at home. Understanding family perspectives on problem behaviors and PBS interventions is a starting point for building partnerships with the family, which helps achieve the objective of applying PBS at home for individuals with problem behavior. The purpose of this article is to provide the authors’ perspectives on concerns and lessons learned from implementing a PBS intervention through a case study on self-management with a student with autism and problem behavior, and his mother, who served as co-authors. A brief description of the intervention and its outcomes is also provided.

Managing problem behaviors of students with disabilities is likely to be an issue at school given that engagement in problem behaviors constitutes a significant barrier for many students with disabilities to learn in the context of the general education classroom and curriculum (Carpenter, 2001; Cartledge & Johnson, 1996; Downing, Simpson, & Myles, 1990). However, problem behaviors of individuals with disabilities negatively influence not only learning at school but their well-being at home as well as that of other family members (Fox, Vaughn, Wyatt, & Dunlap, 2002; Rief & Turnbull, 2002). For example, problem behaviors in children or young adults with disabilities have been shown to impact the emotional and mental well-being of family caregivers, and to serve as a significant stressor (Hastings & Brown, 2002; McIntyre, Blacher, & Baker, 2002; Orsmond, Seltzer, Krauss, & Hong, 2003; Stores, Stores, Fellows, & Buckley, 1998). In addition to affecting emotional well-being, problem behaviors of children with disabilities impact physical well-being of other family members or sometimes even create a family crisis when severe aggressive behaviors are directed toward other family members (Barry & Singer, 2001; Koegel, Stiebel, & Koegel, 1998; Turnbull, 2004). However, the greatest challenge of behavior problems of individuals with disabilities in the family context is its pervasive impact on many aspects of family functioning, family interaction and other aspects of family life, such as family routines, socialization, and community integration, which are critical to family quality of life (Buschbacher, Fox, & Clarke, 2004; Fox, Vaughn, Dunlap, & Bucy, 1997; Fox et al., 2002; Turnbull & Rief, 1996, 1997).

Positive behavior support (PBS) has received increased attention as a means to reduce problem behaviors of students with disabilities (Carr et al., 2002; Carr et al., 1999; Horner, 2000; Horner et al., 1990; Sugai & Horner, 2002; Sugai et al., 2000). However, the ultimate goal of PBS is not simply to reduce or control problem behaviors, but to facilitate and promote comprehensive lifestyle changes for enhancing quality of life of both the individual with problem behavior(s) and his or her family (Carr et al., 2002; Carr et al., 1999). In this respect, PBS has been an effective framework for developing interventions to address problem behaviors at home (Carr...
et al., 1999; Frankland, Edmonson, & Turnbull, 2001; Lucyshyn, Honer, Dunlap, Albin, & Ben, 2002; Turnbull, Turnbull, & Wilcox, 2002). PBS is especially useful in home contexts because it suggests interventions in natural settings and by unskilled intervention agents (Carr et al., 1999; Horner & Carr, 1997).

As PBS interventions are considered to be such a highly effective approach to address problem behaviors of individuals with disabilities in family contexts, partnerships between families and professionals have been acknowledged as a critical key for implementing PBS with families at home (Buschbacher et al., 2004; Fox et al., 1997; Frankland et al., 2001; Park & Turnbull, 2002). Professionals should consider individual families’ contexts and circumstances to develop the partnerships with families for better application of PBS at home. Since the home setting includes complex and dynamic interactions, PBS interventions with families at home should be embedded within family routines and activities to enable a good contextual fit with family life (Lucyshyn et al., 2002). In their research that investigated family perspectives on problem behaviors and challenges related to addressing the behaviors, Turnbull and Ruef (1996) report that incorporating structure in home routines and sustaining energy level are some of the main challenges that families have in addressing problem behaviors especially considering the busy schedules of family members. Other research which investigated family perspectives on problem behavior and parent-professional partnership also reveals the importance of considering the individual family context and understanding family perspectives and concerns when applying PBS interventions with families at home (Fox et al., 1997; Fox et al., 2002; Turnbull & Ruef, 1996, 1997). Given these findings, understanding family perspectives and concerns about problem behaviors and PBS interventions is a starting point for building partnerships with the family. In spite of the importance of partnering with families in PBS, there is little research that explores families’ perspectives regarding problem behavior and PBS. Furthermore, there is little research that addresses families’ specific perspectives and concerns directly related to implementing PBS interventions with family members within the home. In this respect, the purpose of this article is to provide the authors’ perspectives on concerns and lessons learned from implementing a PBS intervention in the home of a student with autism and problem behavior. Additionally, we present a brief description of the intervention and its outcomes.

**Who We Are and Our Concerns**

We introduce ourselves to enable you to have a sense about who we are and our concerns regarding PBS intervention at home. As we each fill a different role: practitioner/researcher, parent, person with a disability, we each have different perspectives and concerns.

**Individual with Disability**

I am AJ. I am 17 years old. I don’t want to get ready for bed. I want to play games and watch DVDs. Mom interrupts me, makes me mad. I want to brush my teeth in the morning, not at night. I like Suk-Hyang to come to see me. Some day in the future, I want to be mature and independent so I can live in my own apartment.

**Family Member**

I am Denise. I am AJ’s mom. My main goals for AJ have consistently related to increasing his independence and decreasing his challenging behavior. His nighttime routine has, for quite some time, been a source of tension, often causing or escalating aggressive behavior. I also want him to be able to get ready for bed independently because I am hoping he will be living in a supported situation with typically developing peers (college age students) soon. When Suk-Hyang approached me with this idea, I was thrilled, but I was also concerned because AJ’s behavior is difficult and I thought focusing on a non-preferred activity and prompting him might even escalate his behavior and a couple of times it did. Suk-Hyang was able to help me calm him down by massaging his hand and talking quietly with him. I was interested to see how PBS intervention, with data collection, would work in our crazy home environment.
Practitioner/Researcher

My name is Suk-Hyang. I would like to introduce myself as both a practitioner and a researcher who is interested in narrowing the gap between research and practice. I wanted to help AJ do his nighttime routines by himself, which was one of Denise’s main desires for AJ. However, I have several concerns regarding this intervention for AJ such as: (a) what kinds of interventions would be best for AJ, (b) how to implement the intervention effectively and making sure there is generalization after the intervention, (c) what to consider while working with AJ and Denise at home so as not disrupt their regular family routines, and (d) how to have a good relationship with AJ and Denise beyond being a researcher or practitioner for the intervention itself.

What We Did: Implementing Self-Management

Self-Management

For several years, AJ had been having trouble initiating and completing a nighttime routine to get ready for bed. To enhance AJ’s ability to get ready for bed independently, we decided to use self-management, which is one of the PBS interventions (Dunlap et al., 2003; Fodor, Campbell, & Flinn, 2002; Sugai & Horner, 2005). Self-management stems from the concept of self-control (Baer, 1984). There are several subcomponents related to self-management such as: self-monitoring, self-assessment, self-observation, self-recording, self-evaluation, self-instruction, and self-reinforcement (Browder & Shapiro, 1985; Fowler, 1984; McDougall, 1998). Even though there are some differences in the descriptions of the subcomponents of self-management depending on the researcher, self-monitoring, self-reinforcement and self-instruction are the most common components (McDougall).

Above all, we chose a self-management strategy because we expected this strategy to have four main benefits (Baer, 1984; Browder & Shapiro, 1985; Fowler, 1984; McDougall, 1998; Quinn, Swaggart, & Myles, 1994; Wehmeyer & Shogren, in press), which, in turn, are well matched to characteristics of students with autism by addressing their needs as follows: First, self-management is an important tool to change students’ behaviors by empowering them to control their behaviors as an active agent instead of relying on parent or teacher prompts or intervention. Considering some students with autism lack self-regulation and self-management of their behavior (Bieberich & Morgan, 2004; Turnbull, Turnbull, Shank, Smith, & Leal, 2002), self-management can be used for student empowerment as well as behavior management. Second, in addition to changing behavior, self-management has been widely used for generalizing what students learned into various natural settings. This is why self-management contributes to addressing the desire for sameness that is considered one of the hallmarks of autism (Newman, Reinecke, & Meinberg, 2000), which in turn is an obstacle to generalizing acquired skills (Bieberich & Morgan; Turnbull, Turnbull, Shank, et al.). Third, self-management is useful to facilitate the inclusion of students by permitting teachers to spend more time on instructional tasks rather than on classroom or behavior management. Given that teaching students with autism who have social and behavior problems in general classrooms has become a great challenge (Boyer & Lee, 2001), self-management is a promising practice for dealing with the challenge. Lastly, self-management can facilitate students’ self-determination, a core dimension of quality of life (Fullerton, 1995; Turnbull & Turnbull, 2001; Wehmeyer & Schwartz, 1997, 1998). A meta-analysis that investigated the efficacy of self-management in increasing appropriate behavior of children and youth with autism also supports the effectiveness of self-management as an intervention for students with autism (Lee, Simpson, & Shogren, 2006).

Implementation

The intervention was implemented at AJ’s home at night from 9:30 to 10:00 pm to improve the independent performance of AJ’s routine to get ready for bed, which includes four sequential behaviors: (a) taking a pill, (b) washing his face, (c) brushing his teeth, and (d) setting the alarm. Self-management in this study consisted of two parts: self-reinforce-
ment and self-monitoring. For the self-reinforcement component we considered AJ’s interests and identified hand massages, Star Wars pictures, and one dollar bills as reinforcers. We designed a self-monitoring sheet to include the four target behaviors and the date so that AJ can monitor his performance across behaviors every night. Along with increasing AJ’s independent performance of his nighttime routine, intervention targeted decreasing verbal prompts and inappropriate behaviors. After discussing who should implement the intervention, we decided that Denise should implement the self-management intervention considering the following factors: (a) his night time routine occurs in a natural home setting where AJ interacts mainly with his mother, (b) interaction with his mother can facilitate generalization of future target behaviors (AJ will listen to and follow his mother’s direction), and (c) the intervention may help Denise deal with AJ’s behavior problem in a more effective way. Before beginning the intervention, Suk-Hyang observed AJ’s nighttime routine, interviewed Denise and collected preliminary data to explore AJ’s reaction to a new intervention. Considering AJ’s negative reaction to the verbal prompting and Denise’s concerns, we modified the way we collected data (described in next section). We met on three different occasions to orient Denise to the self-management strategy and to discuss appropriate reinforcers for AJ.

We used a withdrawal design (ABAB) across behaviors to investigate the effect of self-management on AJ’s independent performance of his nighttime routine. During the baseline (A), Denise’s only prompt was to say to AJ, “It’s time to get READY for bed,” without any intervention. If AJ did not listen to the first verbal direction, Denise provided additional verbal prompts for each target behavior in one minute intervals according to a cue from Suk-Hyang. A maximum of five prompts were given per each target behavior. The intervention condition (B) was identical to the baseline condition except for the implementation of the self-management strategy. The intervention consisted of several steps as follows: (a) explaining self-reinforcement and self-monitoring to AJ, (b) asking him to choose his favorite item for reinforcement, (c) encouraging him to do each target behavior, (d) asking him to mark on the self-monitoring sheet after doing each behavior, and (e) providing his chosen reinforcer. Withdrawal condition (A) was identical to the first baseline condition. That is, there was no self-reinforcement and self-monitoring sheet. Intervention (B) was reinstated. This condition was exactly the same as the first intervention stage for two sessions. We conducted two probe sessions that included only self-monitoring without self-reinforcement to facilitate generalization. We then conducted follow-up sessions four days after the second intervention. The first session of follow-up was identical to the intervention, but the second session was the same as the probe session (only self-reinforcement). To generalize what AJ learned though intervention in a natural way, a calendar was used to monitor AJ’s nighttime routine instead of the weekly self-monitoring sheet that we developed.

In terms of data collection, his independent performance for each behavior was scored on a likert scale from 0 to 3 depending on the level of independence with 3 being the greatest degree of independence. Frequencies of Denise’s verbal prompts were collected except the initial verbal command (“It is time to get ready for bed.”). AJ’s inappropriate behaviors which included growling, gruffly repeating meaningless verbalizations, yelling, and putting both hands over his ears were recorded using 10 s time sampling.

Outcomes/Results

As seen in Figure 1, the changes in the level and trend of the data can be observed; Table 1 illustrates the changes in means (Kazdin, 1982). These results collected across phases revealed that the self-management strategy was effective in increasing independent performance of AJ’s nighttime routine. Also, it decreased verbal prompts and inappropriate behaviors, except one day. On that day (session 12), AJ was very angry and showed serious aggressive behavior because Denise had refused to order pizza that night. But, there was a day (session 15) when AJ did a perfect job, 100% level of independent behavior, zero prompts, and no inappropriate behavior. He continued to perform independently during the probe and the follow-up sessions. The gen-
Figure 1. Percent of student’s independent performances, inappropriate behaviors and the number of verbal prompts.
eralization plan was not very effective because AJ did not like marking his calendar.

Follow-up Story: 18 Months Later

Eighteen months after the self-management intervention, there was a big transition for AJ. First, AJ graduated from high school. Second, he moved out of Denise’s house and lives with two roommates in an apartment now. Even though he became better at doing his nighttime routines independently, the impact of this intervention was not fully generalized to his life not because he did not have enough skills but because he was not fully motivated to do it. He still does not like the nighttime routines. He thinks that it is sufficient to brush his teeth and wash his face in the morning.

What We Learned: What Should Be Considered

There were several lessons that we learned in the process of implementing this intervention, especially regarding the concerns we shared in the beginning of this article. Based on our experiences, we would like to focus more on what should be considered in the process of implementing PBS especially in a home setting with family members.

Pre-exploration to Address Student’s Reaction and Concerns of Family

The first lesson we learned is that any intervention should consider the family context and be adjusted considering the family members’ concerns and the student’s reaction to it by exploring those concerns and reactions in advance. Besides pre-observation of AJ at home and interviews with Denise, we collected the preliminary data to explore Denise’s concerns and AJ’s reactions to the self-management intervention. The pre-exploration process was helpful because it allowed us to adjust the intervention based on the reactions and concerns of AJ and Denise. For example, the initial interval of verbal prompts for preliminary data collection was 30 s. But, verbal prompts provided by Denise every 30 s directly stimulated AJ’s serious aggressive behaviors and made Denise exhausted. Considering Denise’s concerns and AJ’s reactions, we decided to provide verbal prompts in one minute intervals instead of 30 s. Additionally, we set a maximum number of verbal prompts (5 prompts) for each step in the nighttime routine.

Balance Between Flexibility and Strictness

The intervention was to be implemented consistently at the same time every night. However, because the experimental environment was a home, there were many uncontrolled situations such as AJ’s moods and behaviors, as well as unexpected events that occurred just before his nighttime routine. To help respond to AJ’s mood and desires, the intervention was flexibly implemented by adjusting the intervention time. It is also important to strike a balance between flexibility and strictness in the process of collecting data. For example, Denise used various natural verbal expressions to prompt AJ’s target behaviors for his nighttime routine. But, the flexible prompts were provided strictly every minute according to Suk-Hyang’s cue.

Role and Responsibility Clarity

In an intervention within a family, it is very important to determine who will be the pri-
mary implementer by considering the family structure and interaction. In AJ’s case, AJ listened better to what others said than to his mother but his mother was the only adult in the home at bedtime. So it was necessary to focus on better interactions between AJ and Denise. Once we decided who would be the primary implementer, we divided our roles. Denise was in charge of implementing the intervention and Suk-Hyang provided cues for verbal prompts every minute and collected all data including AJ’s independent performances, inappropriate behaviors, and the number of verbal prompts.

**Student Involvement and Empowerment**

We also learned that it was very important to provide AJ with an opportunity to decide how to monitor and self-regulate his own behavior as well as to choose the reinforcements. For example, for the generalization plan, AJ’s favorite Star Wars calendar was introduced instead of a self-monitoring sheet because it is considered more natural. However because it was his favorite calendar, AJ did not want to mark on it. We learned how easy it was to overlook the student’s desires when we did not provide the opportunity for him to express what he really wanted to do.

**Keys for Generalization**

Finally, we learned about important keys for generalizing the impact of an intervention. Even though we planned to generalize AJ’s nighttime routine after the follow-up session, we did not make enough effort to facilitate his keeping up his nighttime routine. This teaches us the importance of long term planning for generalization. In addition, AJ’s perspectives and reluctance to do his nighttime routine allowed us to realize that his motivation is another critical key, which affected the generalization of what he did and learned. That is, we need to make an effort to generalize the impact of a PBS intervention by having a long term plan for a students’ life and enabling them to act from their internal motivation. Fortunately, AJ is getting more motivated to do his nighttime routines to keep himself clean and looking nice in order to meet a pretty girlfriend. He has, however, chosen to start taking a shower (complete with soap and shampoo) and shaving in the morning before school instead of washing his face at night before bed.

**Final Researcher’s Perspectives**

We have addressed our concerns about this intervention and several lessons that we learned through implementation of the intervention that should be considered when implementing PBS with families at home. Even though there are limitations of a case study using a single subject, especially in terms of generalization, we believe that those concerns and lessons are valuable for professionals and families who are interested in PBS interventions with family members at home.

Personally, as a senior researcher and practitioner, it was a wonderful experience to work with AJ and Denise to improve AJ’s nighttime routines. Aside from the lessons outlined above, this study continues to remind me of two ideas. The first thought is related to the value of collaboration between home and school. In fact, this can be considered one of limitations of this case study. While working with Denise and AJ on AJ’s nighttime routine, there was a lack of collaboration or communication with school personnel, such as AJ’s special education teacher. Sometimes, AJ called his special education teacher especially when his mood was not good. Talking with her helped him reduce and release his anxieties. Even though we targeted behaviors at home, it would have been great if we could incorporate input from a teacher of AJ’s when designing and implementing the self-management intervention in order to be consistent in managing AJ’s behavior at both home and school. Second, this study has challenged me to think about striking an ideal balance between consistency of research and flexibility/responsiveness to family context and routines. Consistency of research and treatment fidelity is very important for good research. However, as long as the effect of intervention is not contaminated, professionals should be flexible enough to consider families’ situations, their concerns and needs when they apply PBS interventions at home. In a sense, we might need to develop a clinical or practical ‘effect size’ of PBS intervention at home,
which would consider multiple factors such as family context/routines, family concerns/needs, family’s reactions to intervention, and anticipated outcomes, going beyond a fixed statistical effect size to a more ‘quality of life’ effect size. In other words, does the outcome of the intervention warrant the disruption of family routines, hassles with data collection, and the presence of interventionists in the home at all hours? If the answer is yes, then the effect size is large, if the answer is no, then it is small. Especially, as in this case study, when a family member had to play a primary role as intervention implementer, the ways of collecting data and delivering the intervention should reflect family’s preferences, desires and their concerns. This may be the first way to enter into trusting partnerships with students with disabilities and their families. In this respect, I can certainly say that the most precious thing I obtained through this case study is that I became a friend to AJ and Denise.

References


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