Positive Behavior Support for Individuals with Behavior Challenges

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Abstract Individual positive behavior support (PBS) is a process that combines evidence-based practices from applied behavior analysis (ABA) and other disciplines to resolve behavioral challenges and improve independence, participation, and overall quality of life of individuals living and learning in complex community environments. Its features include lifestyle enhancement, collaboration with typical caregivers, tracking progress via meaningful measures, comprehensive function-based interventions, striving for contextual fit, and ensuring buy-in and implementation. This article will summarize the features and illustrate with a case example.

- Engaging caregivers to take an active role in behavioral intervention
- Designing interventions that work effectively within natural routines
- Addressing lifestyle changes, as well as more discrete behavior changes
- Creating strategies that are durable, reducing dependence on professionals

Keywords Positive behavior support · Quality of life · Collaboration · Comprehensive function-based interventions · Contextual fit

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Introduction

Positive behavior support (PBS) emerged in response to concerns over the use of aversive and humiliating procedures to manage behavior and advocacy for inclusive home, school, work, recreational, and community settings for individuals with disabilities (Lucyshyn et al. 2014). The goal was to maintain adherence to the principles of applied behavior analysis (ABA), while devising approaches that could be acceptable and sustainable across settings (Dunlap et al. 2008). To that end, PBS researchers and practitioners have embraced theories and practices from other disciplines such as ecological and community psychology to bolster the effectiveness of the interventions (Carr et al. 2002). Admittedly, not all of the elements of PBS have been fully investigated or applied in practice (Snell 2005), but the research base is growing. The purpose of this article is to define the features of PBS for individuals with behavioral challenges, focusing on how implementation is intended to occur in the context of typical routines and settings. This article will not contrast ABA and PBS; instead, the features, methods, and literature described will represent a blending of science and practice.

PBS Process

Positive behavior support may best be described as an individualized, problem-solving process grounded in ABA principles. The process includes (1) identification of broad goals and behaviors of concern, (2) gathering and analyzing of information to identify probable patterns affecting behavior, (3) selecting and delineating strategies based on the patterns and integrating them into a comprehensive plan, (4) implementing the plan across settings and caregivers, and (5) monitoring outcomes (Sugai et al. 2000). Although the process is

consistent, the outcomes at each step are truly individualized to the person whose behavior is of concern, the caregivers, and the situations in which intervention is necessary. The process is cyclical, with steps revisited to enhance interventions and outcomes. The core principles of PBS described below should be evident in all steps in the process.

PBS Principles

A central concern in PBS is implementation in “real-world” settings in which there are often multiple competing priorities, frequent changes, and complex circumstances (Carr et al. 2002). Regardless of the potential of an intervention itself, strategies need to be designed to foster consistent implementation by natural caregivers to achieve the level of implementation fidelity required to produce desirable outcomes (Hieneman and Dunlap 2014). The challenge is to maintain integrity to PBS principles and processes, while adapting particular research-based practices in order to improve the social validity, relevance, and sustainability of interventions. The principles of individualized PBS have been described in numerous sources (e.g., Anderson et al. 2007; Carr et al. 2002; Horner et al. 1990; Koegel et al. 1999; Sailor et al. 2009). Although there may be a degree of variability in the definitions provided across resources, the core characteristics are described in the paragraphs below, and illustrated in Kendrick’s story.

Kendrick’s parents sought assistance for his behavior following a terrible holiday season in which his behavior escalated to the point that they cancelled a family gathering. Kendrick was hitting his brother and children at his preschool; throwing and damaging toys and educational materials; crying loudly and dropping to the floor; and perseverating on topics. He was not completing tasks at school and therefore falling behind his peers. His preschool had suggested that ‘another placement might be better’. Kendrick and his family were becoming socially isolated and stressed, and his teacher and other professionals were not able to provide sufficient guidance or support.

Focus on Lifestyle Enhancement

A defining feature of PBS is a focus on improving individuals’ quality of life (QoL). QoL is defined as the degree to which individuals experience personal well-being in terms of participation in valued activities and settings, physical health, and overall satisfaction with their surroundings and relationships (Schalock et al. 2007). Because QoL is a central focus, the intervention process does not begin with defining target

behaviors but, instead, with identifying broad lifestyle goals. This occurs through person-centered planning, a collaborative process for creating a positive vision for the individual; identifying his strengths, challenges, and needs; and establishing action steps for achieving particular goals (Freeman et al. 2014). Person-centered planning has been associated with improvements in quality of life such as increased choices, social interaction, and community participation (Holburn et al. 2004; Robertson et al. 2006). Target behaviors and specific skills to be taught are then identified because they will allow the individual to make progress toward the QoL outcomes.

Guided by their new PBS practitioner/behavior analyst, Kendrick’s family, teacher, therapists (i.e., speech, OT), participated in a person-centered planning process. The behavior analyst spoke with Kendrick prior to the meeting to get his ideas on what he wanted to achieve (because he was currently unable to tolerate participation). The team established a 3-year positive vision for Kendrick and themselves, building on current strengths and resources to achieve the following goals:

- *Participate in family events, community excursions, and vacations successfully*
- *Develop friendships, including play dates and electronic communication*
- *Complete all academic assignments and homework, remaining on grade level*
- *Engage in sporting activities (since athletics was important to the entire family)*
- *Increase joy and reduce stress for everyone involved, accepting no limits*

Collaborating with Typical Caregivers

Collaborating with typical caregivers is another foundational characteristic of PBS (Carr et al. 2002). Although the PBS process may need to be facilitated by someone with knowledge and experience with behavioral principles, support teams—comprised of parents and other family members, educators, direct service providers, and others involved in the individual’s life—participate fully in goal setting, assessment, plan design, implementation, and evaluation of outcomes (Bambara and Kunsch 2014; Hieneman and Dunlap 1999). Team members are active contributors and decision-makers. The ultimate goal is for typical caregivers to apply PBS principles to resolve challenges on their own, thereby reducing dependence on outside professionals. The effectiveness of engaging caregivers has been demonstrated in work with families (Fettig and Barton 2014) and educators (Cook et al. 2012), with studies indicating that typical caregivers can be engaged as partners in the assessment, be responsible for the

implementation of the resulting function-based interventions, and produce improvements in child behavior.

As described above, Kendrick's team was engaged through the person-centered planning process. They each "signed on" to his plan, making a commitment to respect one another's contributions, communicate openly, and contribute to the overall vision. They agreed to work as a team to assist with the assessment process by gathering information, participate in selecting and implementing strategies (at a next meeting), and track outcomes to ensure that interventions were successful.

Tracking Progress via Meaningful Measures

Any application of ABA requires that decisions are made based on measureable changes in behavior (Sugai et al. 2000). Given that PBS occurs in the context of natural routines, the way in which data are collected must be tailored to the environmental circumstances and feasible for typical caregivers. This may mean simplifying the data collection procedures for parents, teachers, or direct care staff, e.g., having them complete a daily checklist or rating scale (Hieneman and Dunlap 2014), while engaging others with more training, time, and experience (e.g., behavior analysts) to collect more robust and objective data. Assessing fidelity of intervention is essential as well, with the focus being on implementation by natural caregivers across the circumstances in which the individual participates. Since a primary focus of PBS is quality of life changes, practitioners are encouraged to record broad changes such as the frequency of the individuals' participation in community activities and quality of social interactions, in addition to data on target behaviors. Indirect and self-report measures may be combined with direct observation to capture qualitative changes (Summers et al. 2005). Combining data collection procedures in this way may be necessary to capture generalization and maintenance of behavior change within real-life circumstances.

The behavior analyst recorded detailed data when present, but was only available a few hours per week. Therefore, it was important for Kendrick's parents, teacher, and therapists to capture progress across settings and activities. His teacher agreed to complete a daily behavior rating and track assignments he started and completed. His therapists verbally shared their behavior rating with the parents. Kendrick's parents recorded all major incidents (e.g., aggression, property damage, and lengthy "meltdowns"), including events preceding and following them because they wanted to understand the patterns.

Assessment of Contexts and Functions

Assessing patterns of behavior in complex community environments offers a significant challenge, requiring strategies that capture a broader array of variables and variability over time and across circumstances. Camp et al. (2009) described an array of factors that appear to affect behavior in natural settings. Assessments must be designed to identify not only the likely functions of behaviors such as obtaining attention, items, activities, stimulation, or opportunities to escape, delay, or minimize unpleasant circumstances (Hanley et al. 2003), but also the specific conditions in which those functions occur (O'Neill et al. 2014; Wacker et al. 2011). To do so, practitioners use various indirect and direct methods to identify commonly occurring patterns and idiosyncratic variables influencing behavior in typical daily routines and settings (O'Neill et al. 2014). Within natural routines, it is difficult—if not impossible—to manipulate all pertinent variables, necessitating the creation of hypotheses based on "best guesses" of the relevant patterns. The validity of the patterns is supported by the individual's response to the interventions (O'Reilly et al. 2000).

The behavior analyst knew she needed to use her time efficiently and therefore asked Kendrick's parents to identify the best and worst times of day, scheduling ABC observations during those periods. Kendrick's parents and teacher completed lengthy functional assessment questionnaires (O'Neill et al. 2014), but his therapists and others (e.g., baby sitter, grandparent, brother) simply shared anecdotal data related to the possible variables affecting his behavior. Combining all of this input, the behavior analyst shared the following proposed patterns with the team for additional input and to obtain consensus:

Antecedent	Behavior	Consequence
Unstructured social situations (e.g., free time, sports, games, family events)	Repetitive comments or questions, crying, dropping to floor, hitting others	Avoids situations and social demands
Difficulty completing tasks with precision (e.g., makes errors)	Crying, throwing, or destroying materials, refusing to complete activities	Obtains assistance or task is modified or delayed
Setting Events: Unclear expectations related to social interactions or tasks, changes in routine or schedules – especially involving changing caregivers		

Comprehensive, Function-Based Interventions

PBS plans are multi-component in nature, with specific strategies aligned with patterns identified during the assessment

(Carr et al. 2002; Horner and Carr 1997). Given that behavioral patterns may be context-specific (e.g., a child only hits when her sibling removes her toys) and multi-functional (e.g., screaming occurs both to obtain parental attention and to delay having to complete chores), it may be necessary to combine strategies, connecting them to particular circumstances. Practitioners use the competing behavior model by O'Neill and colleagues (2014) as a framework to select intervention components. Examples of the *proactive strategies*, *replacement behaviors*, and *functional consequences* incorporated in plans are included in Table 1 and described below.

Proactive strategies Proactive strategies are antecedent-based procedures designed to avoid problematic situations (e.g., chaotic environments), modify features of circumstances (e.g., tasks) to make them more “tolerable”, and add cues for appropriate behavior (Loman and Sanford 2014). Proactive strategies are commonly used for behavior that is maintained

by escape, delay, or avoidance (Geiger et al. 2010), but are also used to embed reinforcement in the social or physical environment (making problem behavior unnecessary) and prompt appropriate responding related to other functions (increasing the likelihood of desirable behavior). Examples of strategies that have been demonstrated to be effective include curricular revisions (Dunlap and Kern 1996), providing opportunities for choice making (Dunlap et al. 1994; Shogren et al. 2004), visual schedules and other supports (Koyama and Wang 2011), behavioral rehearsal, e.g., social stories (Kokina and Kern 2010), and noncontingent reinforcement (Holden 2005).

Replacement behaviors Replacement behaviors include skills that offer individuals alternative ways to achieve the function of their behavior of concern and respond more effectively to his circumstances (Carr et al. 2002). Replacement behaviors must be functionally equivalent (meet the “fair-

Table 1 Examples of the *proactive strategies*, *replacement behaviors*, and *functional consequences* incorporated in plans

Proactive strategies	Replacement behaviors	Functional consequences
Getting attention		
Increase noncontingent attention throughout day	Request attention such as proximity, interaction, or physical contact	Increase level, frequency, and/or quality of attention following positive behavior
Communicate when your attention will be available	Wait for attention and/or engage in other activities	Minimize attention (e.g., by ignoring and walking away) when problem behavior occurs
Provide person independent activities when busy		
Prompt person to request attention appropriately		
Avoiding demands		
Modify characteristics of settings or activities	Say “no” or “later,” request assistance, take breaks, or employ other methods to escape/delay demands	Allow breaks, escape, changes in environment, or reductions in demands for appropriate behavior (e.g., participation)
Allow opportunities to choose activities or timelines	Remain on task or in the designated area	Withhold or delay escape for problem behavior
Shorten activities or provide periodic breaks		
Remind person how to request break/stop/help correctly		
Obtaining items/activities		
Clarify what items/activities are available to the person	Request or obtain appropriate items/activities	Provide tangibles/activities only following appropriate behavior (e.g., requests)
Temporarily remove off-limit items from surroundings	Accept “no,” wait, and/or negotiate access to alternative items/activities	Withhold items/activities after problem behavior
Offer alternatives to items/activities denied		
Prompt person to request or negotiate alternatives		
Gaining stimulation		
Provide appropriate sensory stimulation (e.g., keep engaged in other activities)	Obtain stimulation through appropriate actions (e.g., exercise and hobbies)	Allow access to activities that provide appropriate sensory stimulation
Block access to inappropriate stimulation	Tolerate boredom or appropriate time and place	Block access to inappropriate activities
Prompt appropriate forms of stimulation		

pair” criteria) and be efficient and effective (based on the “matching law”). Replacement skills commonly include communication and self-regulation (Hansen et al. 2014) but may also focus on development of other skills related to quality of life (e.g., independence). These skills are taught using effective instructional procedures such as defining skills or task sequences, prompting, chaining, and shaping—embedding opportunities to use the skills to the greatest extent possible within the context of natural routines. Approaches such as incidental teaching (McGee et al. 1999), functional communication training (Durand and Merges 2001), and pivotal response training (Koegel et al. 1999) are designed to develop such skills in context.

Functional consequences Functional consequences are strategies for responding to behavior, or allowing natural consequences to occur, which have previously been associated with problem behavior (e.g., attention, tangible, sensory, and escape) to reinforce desired behavior. They simultaneously include withholding reinforcement for problem behavior, in essence combining differential reinforcement (Chowdhury and Benson 2011) and extinction (Iwata et al. 1994) to maximize the effectiveness of functional consequences. Function-based interventions have been well documented in terms of their effectiveness across populations and settings (Gage et al. 2012; Geiger et al. 2010; Goh and Bambara 2010; Kliebert et al. 2011; Newcomer and Lewis 2004). Functional consequences are often combined with other reinforcers to encourage desired as well as replacement behaviors (O’Neill et al. 2014). The challenge is, of course, managing access to reinforcers in unpredictable natural environments. This often requires increasing the salience, frequency, or quality of reinforcers for desired behavior to offset natural reinforcement that automatically occurs for problem behavior (e.g., patrons in a grocery store commenting on an individual’s attention-motivated behavior).

Based on the patterns identified for Kendrick’s behavior, his parents, teacher, and therapists designed the following strategies with the guidance of the behavior analyst:

<i>Proactive Strategies</i>	<i>Replacement Behaviors</i>	<i>Functional Consequences</i>
<i>Provide written expectations and examples of completed work</i>	<i>Request breaks, assistance, and/or explanations (e.g., What do you want? How does this work?)</i>	<i>Respond to communication, providing information, assistance or breaks from activities</i>
<i>Develop and review social stories (i.e., when, where, who, and what will be expected) for complex upcoming interactions</i>	<i>Identify other people’s needs and perspectives and adapt his behavior accordingly (e.g.,</i>	<i>Provide feedback on social interactions, especially peers</i>
		<i>Allow him to check off his</i>

<i>Provide personal space for “cooling off” when agitated</i>	<i>She simply wants to play with me)</i>	<i>work when completed</i>
<i>Engage in conversations (e.g., asking questions) and play games of interest to other people</i>	<i>Engage in conversations (e.g., asking questions) and play games of interest to other people</i>	<i>Delay exit from activities until he requests appropriately</i>
<i>Reduce academic demands and then gradually increase</i>		<i>Provide choice of activities for completing work</i>

In addition to these immediate strategies, Kendrick’s teacher created a daily checklist for him so that any changes could be noted. His parents developed a family calendar that displayed upcoming events, travel plans, and when each of them would be absent due to work obligations. His teacher decided to modify lessons to provide additional structure and redefined expected behavior across activities for all children since she found these strategies to be helpful for her entire class.

Contextual Fit of Interventions

Implementing comprehensive, function-based interventions in a collaborative fashion to achieve quality of life outcomes is not easy. To address this challenge, PBS practitioners must strive to develop interventions with “social validity” (Schwartz and Baer 1991) or “contextual fit” (Albin et al. 1996). This means that strategies can be implemented within natural routines and are selected based on the available resources, needs, and preferences of the individual and caregivers. Although it may make sense to supplement the instruction embedded in natural routines (e.g., for difficult to establish skills), PBS minimizes interventions that must occur in highly controlled or segregated settings. If the settings or systems do not support implementation of PBS, advocacy may be necessary to improve the plan’s effectiveness and sustainability of outcomes. Aligning interventions to improve their fit has been shown to improve implementation and outcomes (Benazzi et al. 2006; Hieneman and Dunlap 2000; Moes and Frea 2002).

As described above, Kendrick’s team participated fully in the design of the strategies, improving their contextual fit. They did, however, find that they needed to adjust how strategies were implemented across circumstances. His teacher did not have time to construct social stories and therefore shared the details of upcoming events with Kendrick’s parents so that they could prepare him. Peers varied in their willingness to patiently explain circumstances to Kendrick and therefore were hand-picked as work partners and play mates. Kendrick’s parents tried a variety of extracurricular and sports activities before

finding options that naturally provided the structure that Kendrick needed to be successful.

Ensuring Buy-in and Implementation

People charged with implementing interventions (namely, parents, teachers, and other typical caregivers) must be empowered to do so. Empowerment is associated with two critical concepts: (a) knowledge and skills and (b) self-efficacy (Nachshen 2005). Training of parents and direct support providers has been a staple of ABA since the field was defined (Alberto and Troutman 2009; Kazdin 2005). In practice, this means creating understandable and feasible protocols for implementation and teaching both principles and procedures. Effective coaching in context is typically required to promote fidelity in using the procedures (Hendricks 2009). We have learned, however, that simply teaching skills may be insufficient to fully engage the caregivers in implementation, even when offered the most effective and contextually relevant strategies (Allen and Warzak 2000). This may be related to impeding or competing motivations and perceptions (e.g., when parents believe they or their children are not capable of change). In an effort to address caregiver self-efficacy and buy-in, research is emerging that combines cognitive-behavioral methods and PBS (Durand and Hieneman 2008; Durand et al. 2013).

As is evident in this case example, Kendrick's parents bought into the process quickly. They did not, however, know how to analyze circumstances affecting Kendrick's behavior or design and implement effective strategies. The behavior analyst provided them with user-friendly reading materials on the principles of PBS, tools for gathering information, and step-by-step guides for implementing the strategies within each targeted routine (e.g., family gatherings, sports activities). With these resources, the parents became expert problem-solvers. The teacher and administration at Kendrick's school did not engage in the process as readily. During initial contacts, they were hesitant to deviate from their typical practices and to 'do all this for just one student'. With support of the rest of the team, they gradually learned that the new strategies were more efficient than what they were currently doing (e.g., counseling Kendrick on his behavior; managing crises) and that the principles could be applied to all of their students.

As a result of this collaborative process, Kendrick met all of his goals within one year. He was completing at least 90 percent of his tasks at school and monitoring his own progress. He also began doing chores at home. He was able to enjoy time with his brother and peers, without requiring constant adult supervision or aggression. Kendrick had two sleepovers, attended birthday

parties, and played online video games with friends. He began competing in running events with his father. His family resumed their busy social life, traveling to visit relatives and hosting events. Kendrick learned to devise his own social stories by asking the right questions. The need for behavioral services diminished to a consultative basis, but the team continued to work effectively together to plan and address concerns as needed.

Conclusion and Future Directions

Positive behavior support combines evidence-based approaches to support individuals with behavioral challenges in a range of community environments. When implemented with fidelity, coordination with natural caregivers, and in a way that respects the integrity of settings and systems in which services are provided, true life-changing results can occur (Lucyshyn et al. 2009). Unfortunately, this vision has not been fully realized in practice, and elements of PBS still need to be subjected to rigorous scientific inquiry. As we move forward, researchers and practitioners are challenged to continue enhancing and expanding PBS processes and procedures that are showing promise. Recommendations in this regard include the following:

1. Improve methods for measuring quality of life improvements, linking observable changes in behavior to more subjective methods for evaluating progress.
2. Refine assessment processes and methods to more effectively and efficiently capture idiosyncratic variables contributing to behavior, as well as multiple, overlapping functions that occur in natural environments for individuals.
3. Continue research to build empirical support for intervention components, building our arsenal of evidence-based practices that work within natural routines.
4. Develop approaches for more effectively engaging families and direct service providers, possibly extending our functional behavioral assessments to understand caregiver motivation.
5. Expand our knowledge regarding how to align PBS principles and practices across tiers of implementation, ensuring support for individual PBS interventions from the systems in which individuals participate.

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