Enhancing Accountability in Behavioral Consultation Through the Use of Single-Case Designs

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Abstract

Single-case design and progress monitoring methodologies are efficient and cost-effective strategies for increasing accountability for indirect service provision. Single-case design conceptualizes the treatment of an individual as an experimental process that can be monitored over time and evaluated for effectiveness. Increasingly in clinical, counseling, and educational settings, interventions are administered through indirect service (i.e., behavior consultation) due to the large unmet need within children's mental health and the limited number of child-focused professionals available to address these challenges (Kataoka, Zhang, & Wells, 2002; Meyers & Nastasi, 1999). Single-case methodologies offer clear feedback and treatment evaluation through charted progress monitoring that consultees can understand and interpret.
Keywords: behavior consultation, single-case designs, accountability, visual analysis.

Historically, psychological service provision has most often occurred without direct accountability for service outcomes. Practitioners report that the techniques that they use in clinical practice were learned during their training and then altered based on trial-and-error experience (Hayes, Barlow, & Nelson-Gray, 1999). This subjective practice of altering and administering treatment techniques may occur due to the need to adapt known techniques to an individual client's needs given resource constraints. While the primary goal of any treatment is that the client benefits, designing a treatment that facilitates the quantitative analysis of treatment change results in the ability to both a) establish a correlation between the client's treatment and outcome and b) develop empirical support for the future use of the treatment for a similar presenting problem and client.

One way to address the need for increased accountability for service outcomes in applied settings is through single case design outcome and progress monitoring methodologies. Single case design conceptualizes the treatment of an individual as an experimental process that can be monitored over time and evaluated for effectiveness. Rather than relying on anecdotal evidence of change as a result of the intervention, single case interventions are designed for the unique presenting needs of a client, and then the impact of the individual's intervention is monitored over the course of implementation using data collection and analysis techniques.

The past 10 years have witnessed an increasing commitment to evidence-based practice within the fields of education and psychology. The "evidence-based practice" movement developed out of calls for increased accountability and transparency in service provision. The field of psychology has committed to researching and documenting the usefulness of psychosocial treatments for mental health problems (Kazdin & Weisz, 2003). Similarly, in the field of education, recent legislative mandates such as the No Child Left Behind Act have emphasized the need for educational practitioners to use instructional techniques that have research-based support (U.S. Department of Education, 2007). As professionals involved in the cognitive and social-emotional development of the nation's youth, psychologists, social workers, and educators need to develop efficient systems for evaluating and documenting the effectiveness of their service provision. This article presents a model for using single-case design methodology to evaluate the effectiveness of interventions, and in particular interventions delivered through indirect service approaches.

Models of Treatment Evaluation

Various criteria have been developed to formalize the evaluation of interventions. In 1995, the American Psychological Association (APA) published the first template for evaluating interventions for mental disorders. This template was revised in 2002 and the current Criteria for Evaluating Treatment Guidelines (American Psychological Association, 2002) emphasize the need for treatments to demonstrate both efficacy and effectiveness, or clinical utility (Presidential Task Force on Evidence-Based Practice, 2006). Efficacy is measured though examination of whether or not treatment results in change in a research setting and effectiveness change in an applied setting such as a community clinic. The APA criteria highlight the commitment that the field of psychology has made to the careful and ongoing evaluations of treatments from the stages of research and development to the stages of implementation in daily practice.

This call for linking science and practice was further refined by the APA Division 12 Task Force on Promotion and Dissemination of Psychological Procedures which published specific criteria for rating the quality of psychological treatments and identified eighteen empirically supported treatments (EST; Chambless & Hollon, 1998). Treatments were identified as "well-established" on the basis of having two or more experimental or nine or more single-case design research studies establishing the treatment as superior to placebo or an already established treatment. Research studies had to clearly define the subjects receiving the treatment, the treatment had to be manualized, and the findings had to be replicated by an independent research group. Treatments were identified as "probably efficacious" when the treatment was shown to be superior to a wait-list control in two or more studies or when the study findings were yet to be replicated by an independent group.

More recently, the Task Force on Evidence-Based Interventions in School Psychology developed a procedural and coding manual for reviewing psychological and educational interventions for school-aged children and their families (Kratochwill & Stoiber, 2002). The Procedural and Coding Manual for Review of Evidence-Based Interventions evaluates interventions on the basis of nine key criteria, including 1) measure quality, 2) type of comparison group, 3) change in outcome measures, 4) educational/clinical significance of change, 5) durability of effects, 6) identified treatment components, 7) implementation fidelity, 8) replication, and 9) implementation of intervention at a school or field-based site (Task Force on Evidence-Based Interventions in School Psychology, 2003).

An increasing number of practitioners in the fields of psychology and education are being called on to implement research-based treatments into their own practice. However, simply implementing a treatment or intervention on the basis of its evidence-based status does not guarantee that a client will have similar success. Variability across clients and settings and adaptations made to interventions to facilitate implementation in applied settings, all influence the treatment outcomes achieved. All clients exist within a unique biological, social, and psychological context. Although treatments should be selected for use with clients based on previous data suggesting that the treatment is likely to result in positive outcomes for the client, treatment outcomes must be monitored and evaluated on an individual basis in applied settings such as schools or clinics as each provides their own set of unique circumstances. Each of the evaluation templates reviewed above emphasize the importance of clearly identifying key characteristics of the client and the intervention, collecting data about the client's functioning over the course of the intervention, and analyzing the data to determine the impact of the intervention on the client.

Behavioral Consultation

Although several models have been developed (e.g., Keller, 1981; Piersel, 1985; Tharp & Wetzel, 1969), Bergan's (1977) model of behavioral consultation has dominated the field of psychology (Brown, Pryzwansky, & Schulte, 2006). This model, which is based on principles of operant learning theory, was

later revised by Bergan and Kratochwill (1990). The methods used in the process of behavioral consultation stem from theories of behavior modification, including applied behavior analysis and social learning theory (Elliott & Busse, 1993). Systems theory also has been identified as being a major influence on behavioral consultation methodology. More recently, the importance of incorporating assessment and intervention strategies from multiple theoretical origins to expand the application of traditional behavioral consultation across multiple settings has been articulated (Kratochwill, Elliott, & Stoiber, 2002).

Behavioral consultation is a structured problem-solving process characterized by indirect service delivery, such that the consultant delivers a service to a client indirectly through a consultee. The process includes a series of four stages, including problem identification, problem analysis, treatment implementation, and treatment evaluation, which are guided by structured interviews between the consultant and consultee (Bergan & Kratochwill, 1990). The use of assessment and intervention occur throughout the consultation process. The first stage of behavior consultation is problem identification. Consistent with behavioral principles, the focus centers on objectively defining the problem behavior in terms of concrete, observable behaviors through a problem identification interview. Rather than focusing on within-client deficits, the problem is defined as the discrepancy between the client's expected level of performance and the level at which the client is actually performing. This permits the consultant and consultee to conceptualize the problem from an ecological framework and to identify any existing discrepancy between the client's current behavior and the environmental expectations for the client. Problem identification has been cited as the most critical stage of consultation because it guides the development and implementation of an effective treatment (Kratochwill et al., 2002).

The second stage of behavioral consultation is problem analysis, which focuses on identifying the conditions and variables which influence the behavior. The goal is to determine what the functional relationship is between the behavior, its antecedents, and its consequences. This stage is completed by the consultant and the consultee via a problem analysis interview and using functional assessment procedures (e.g., functional behavior assessment). At the end of the problem analysis stage, the consultant should be able to use the assessment and interview data do identify an appropriate intervention for the consultee to use with the client.

Following problem analysis, the third stage of behavioral consultation is the treatment implementation process which involves the consultee carrying out the intervention plan developed during the problem analysis stage. It is important for the consultant to consider the consultee's skill development during the process of treatment implementation and to provide the necessary training and support to the consultee so that the she is able to implement the intervention with integrity, or as designed. This third stage of consultation is further characterized by progress monitoring and treatment revisions. The client's behavior is monitored repeatedly throughout the implementation of the intervention, and information yielded from this data can be utilized to support decisions to either maintain the current treatment plan or to alter it (Kratochwill et al., 2002).

The fourth and final stage of behavioral consultation is treatment evaluation during which a formal treatment evaluation interview is completed to determine whether or not the goals of consultation have been met and how effective the treatment plan was (Bergan & Kratochwill, 1990). To evaluate treatment effectiveness, data collected during the treatment implementation stage may be compared with the specified level of performance which was operationalized during the problem identification stage. In addition, data collected during the treatment implementation stage may be compared with baseline data collected during the problem analysis stage. If the goals of consultation have been met, the behavioral consultation process and the intervention may be terminated; however, if the goals have not been met or new problems have emerged, the process typically reverts back to the problem analysis stage. Finally, if the client is responding to the intervention but has not yet met the goal, a consultee may terminate the

consultation process while still continuing the intervention if she feels competent to proceed independently from the consultant.

Collaboration

Depending on the specific problem, the process of behavioral consultation may be enhanced if it incorporates multiple individuals from different environments in the client's life (e.g., home, school). Conjoint behavioral consultation has emerged as an effective approach to bridge the gap between home and school settings (Sheridan, Kratochwill, & Bergan, 1996; Wilkinson, 2006). This method of consultation is rooted in behavioral consultation and seeks to link educators and parents in a collaborative-problem-solving process. Problems are not considered to reside exclusively within the child or within one environment; rather they are conceptualized as a result of complex interactions among the multiple environments in a child's life. Some advantages of conjoint behavioral consultation include providing services to a client across multiple environments simultaneously, increasing opportunities for data collection, and enhancing generalization and maintenance of treatment effects.

Barriers

Treatment integrity, acceptability, and adherence are related to whether or not the consultation process is successful (Zins & Erchul, 2002). Treatment acceptability refers to the consultees' perception that the treatment plan is reasonable. It is important that a consultee buy-in to the proposed intervention plan in order to enhance the likelihood that the intervention will be implemented fully and appropriately. Treatment adherence refers to the willingness of the consultee to carry out the intervention as designed. Treatment integrity refers to the extent to which the treatment is implemented as intended. Both treatment adherence and integrity are related to treatment effectiveness because treatment effectiveness will be compromised if the consultee does not adhere to or implement the treatment as indicated.

Data Collection

The use of standardized data collection procedures during both the baseline and treatment phases is essential to the behavioral consultation process. Data collection and analysis permits meaningful inferences to be made regarding the effectiveness of an intervention for both the consultee and client. Data collection procedures may center on assessing the frequency, intensity, and/or duration of the identified behavior (Brown et al., 2006). The effectiveness of a treatment can be evaluated in relation to baseline data or progress toward desired level of performance for a specified behavior (Kratochwill et al., 2002). In order to draw inferences about the effectiveness of a treatment, the data collection methods that occur during the treatment implementation and/or evaluation phase need to parallel those utilized during baseline data collection which occurs prior to treatment implementation. Incongruent data collection across baseline and treatment phases will preclude the ability to evaluate the effectiveness of a given treatment because it will not be possible to determine whether or not behavioral change occurred as a result of the treatment. In this way, baseline data collection serves as a type of a "no-treatment" control group. In addition, data collected during the treatment implementation phase can be utilized to monitor the client's response to the intervention over time as a form of progress monitoring.

Since the consultee often assumes responsibility for data collection, it is important that the data collection procedures are clearly defined, the behavior to be measured is unambiguous and observable, and the data does not require significant time to collect. Overly extensive data collection requirements can hinder the success of the consultation process. If the consultee is required to collect an overwhelming amount of data, the consultee may resist this process through inaccurate or incomplete data collection. Without accurate or sufficient data, one cannot appropriately assess the effectiveness of the treatment.

Evaluation Methods

Two common evaluation methods used in behavioral consultation include summative and formative evaluation procedures (Brown et al., 2006). Formative evaluation refers to ongoing progress monitoring by collecting data repeatedly over the course of treatment implementation. Data collected

during formative evaluation procedures is used to determine if changes to the treatment plan are necessary. Summative evaluation is consistent with outcome evaluation and provides data to guide the assessment of treatment effectiveness. This type of evaluation utilizes data collected throughout the treatment implementation phase and involves comparing client treatment implementation data with baseline data or assessing the extent to which the data meets the desired level of performance identified by the consultee during the problem identification stage. Relative to other models of consultation (e.g., mental health, organizational), behavioral consultation lends itself well to empirical study using data analysis techniques and it has a strong research base in the fields of psychology and education (Martens, 1993). It has been recommended that single-case design is an ideal method for evaluating the effectiveness of behavioral consultation in applied and clinical settings (Bergan & Kratochwill, 1990; Kratochwill et al., 2002).

Single-Case Research Designs

Outcome data from traditional group research designs tend to be presented as population means and provide little information relevant to treating individual clients in clinical practice (Hayes et al., 1999). Alternatively, single-case designs allow for the careful assessment of an individual which provides significant implications for clinician's practice (Kazdin, 1992). There are three major types of single-case designs: *within-series*, *between-series*, and *combined-series* which all involve a number of strategies that increase the likelihood that changes in behavior are a result of treatment. The following experimental controls are included in single-case designs: (a) continuous or repeated assessment of the individual, (b) baseline assessment, and (c) monitoring stability of performance, which examines trends and variability in the data (Kratochwill, 1992). Additional advantages of single-case designs include their flexibility (i.e., alterations in experimental control can be made) and their replicability (i.e., return to baseline and reintroduce treatment).

Within-series designs

Within-series designs involve evaluation of behavior across phases [i.e., baseline (A), treatment (B)]. Stability, level, and trend are compared across different phases of a single data series. Thus, each data point is seen in the context of those that precede or follow it. Examples of this type of design include the basic time-series or AB design. This design is most similar to what occurs across the baseline and treatment phases of Bergan and Kratochwill's Behavior Consultation Model (1990), yet the uncertainty of potential confounds or threats to the internal validity of a treatment remains a distinct limitation of this approach. Other within-series designs that work to increase the likelihood that the treatment is truly the variable that is impacting changes in the client include the ABA time-series design which includes an intervention withdrawal phase, and an ABAB design which greatly reduces threats to the internal validity of results by replicating the intervention effect (Kratochwill, 1978). Unfortunately such designs are often impractical and potentially unethical within the clinical setting given the need to temporarily withdraw treatment to insure that the treatment itself was responsible for the change in the client's behavior.

Between-series designs

Between-series designs are often utilized when conditions change too rapidly for there to be several levels of a given condition. These designs do not require the withdrawal of treatment or lengthy treatment periods to determine which treatment is most effective. An example of this type of design is the alternating treatments design, which involves the rapid and random alteration of two or more conditions (i.e., cognitive-behavioral treatment sessions with homework or no homework randomized across sessions). Comparisons in treatment are based on the divergence and overlap between the series. These types of designs pose a number of challenges to implement in practice and typically don't involve a baseline phase recommended in the problem identification phase of behavioral consultation procedures. Other important considerations within *between-series designs* are the potential for multiple-treatment interference. Thus, it is difficult to determine if one treatment in isolation would be as effective if it is not

implemented at the same time as another treatment.

Combined-series designs

Combined-series designs involve both between-series and within-series elements. These designs involve the coordination of simple phase changes (i.e., AB) in which the phase change occurs at different points in time across different series, or clients. In essence, the treatment occurring at different times reduces the threats to validity by ruling out the effects of extraneous events on changes in behavior. An example of this type of design is the multiple baseline design across cases. Thus, persons are subjected to treatment after varying baseline lengths and data are compared both within and between the series. These designs allow for modest interpretations to be made regarding treatment generalization (Kazdin, 1992; Kratochwill, 1978).

Data Analysis Methods. Visual analysis is most commonly used to investigate changes in the trend, level, and stability of data collected from single-case research designs (Barlow & Hersen, 1984). This analysis method prevails as the method of choice for two reasons: (a) clinically relevant changes are thought to be distinctly apparent when visually inspecting plotted data, and (b) traditional statistical tests can not be used in analyzing data collected from repeated measurement (i.e., each data point is not independent of the others).

Implementing Single-Case Design within the Behavior Consultation Process: Case Examples

Within-Series AB Design Case Example

Background Information. Ashley is a five-year-old girl with typically developing language skills and no history of developmental concerns. Her parents sought treatment from the school psychologist due to concerns about her peer interactions. Specifically, Ashley did not spontaneously initiate social interactions with other children. Ashley attended a 45-minute morning playgroup three days a week during which she engaged in parallel play and responded if children invited her to play, but she was otherwise reserved and withdrawn. Her parents were hesitant to enroll her in kindergarten until she was "more successful" with children in social situations.

Problem Identification. During the problem identification interview (PII) Ashley's mother reported that she rarely initiated conversations or social interactions with other children. Ashley typically played alone or with her parents, although she would engage in reciprocal game-playing if it was initiated by her peers. This behavior was most apparent to her mother during the play group. Her parents reported that Ashley responded to social bids from other children appropriately, and she seemed to prefer playing with peers rather than alone. The target behavior was identified as initiating social interactions with peers. This was further operationalized as any instance when Ashley spontaneously posed a question or made a statement that evoked a response from a peer (i.e., inviting a peer to join an activity or asking what a peer was doing). Following the PII, Ashley's mother collected baseline data for two weeks to monitor the frequency of Ashley's social initiations during the playgroup by recording the number of times Ashley verbally initiated reciprocal interactions with peers. Events preceding and following any social initiation were also recorded.

Problem Analysis. Following two weeks of data collection, the consultant met with Ashley's mother for a problem analysis interview (PAI) to review the baseline data, conduct a functional analysis of the behavior, establish goals for behavior change, and design a treatment plan. The data revealed that Ashley only initiated interactions on two occasions when she initiated play with a younger girl who was described as quiet. Her peer responded positively and engaged in the activity that Ashley presented. No patterns of behavioral antecedents or consequences emerged from the data as triggers or reinforcers of her behavior. Ashley's mother expressed her desire to develop a treatment for Ashley that would help her meet a goal of initiating a minimum of five social interactions during *each* play group.

Treatment Implementation. The treatment plan centering on the use of positive reinforcement and behavioral training was implemented for an 8-week period while Ashley's mother continued to collect data on Ashley's social initiations during play group. Ashley received verbal praise from her mother and the mother of the peer every time she initiated a social interaction with a peer. For the first two weeks of the intervention, Ashley's mother prompted her to initiate social interactions and Ashley's mother stopped playing with her during the play group. Because Ashley had expressed a desire to play with her peers, a smiley face sticker chart was utilized to allow Ashley to monitor her progress. When Ashley met her goal of earning five smiley faces each day for five days, she received a predetermined reward (e.g., trip to Chuck-E-Cheese's).

Treatment Evaluation. The treatment evaluation interview (TEI) revealed that Ashley's parents were satisfied with the outcomes of the consultation process. An AB design was used to evaluate the treatment effects in this case. Based on a summative analysis of the results presented in Figure 1, the goal of consultation was met. A visual analysis of the data collected during the treatment implementation showed that Ashley made steady gains with respect to the frequency with which she initiated interactions with peers, an improvement from baseline was evident, and the goal of five initiations per play group was met. Based on the data, Ashley's mother and the consultant decided to terminate consultation, however, Ashley's mother decided to continue providing verbal reinforcement when Ashley initiated social interactions. A one-month follow-up indicated that although her mother had not continued to collect data, she felt that Ashley had continued to initiate social interactions with increased frequency.

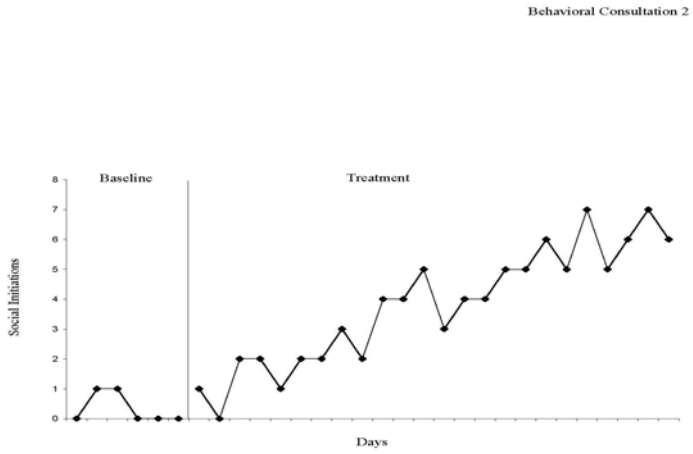

Figure 1: Within-series AB case design example illustrating increases in social initiations following treatment implementation.

Replicated AB Design Case Example

Background Information. Dr. Beene is a clinical psychologist who specializes in treating children with ADHD. Over the course of two years, he had more than a dozen preadolescent clients, ranging in age from 6 to 10 that were diagnosed with ADHD with predominantly hyperactive symptoms. While most of Dr. Beene's clients seek psychosocial treatment as an adjunct to pharmacotherapy, in five of these cases, parents were resistant to medication and sought alternative treatment options for oppositional and defiant home and school behaviors.

Problem Identification. During initial intake interviews with the children and families, parents reported varying degrees of concern over their children's failure to follow directions, lack of organization, and quick tempers. Children tended to recognize that they were often in trouble at home and three of five children reported having difficulty making friends in school. Parents reported different parenting techniques, but all parents expressed frustration and confusion about how to make their relationships with their children more positive. Parents attributed the tension at home to be a result of their child's ADHD symptoms. In order to get a clinical picture of the child's behaviors and functioning, Dr. Beene asked the parents to fill out a BASC rating on their child three times during the next two weeks and prior to meeting again to make a treatment plan.

Problem Analysis. Following two weeks of data collection, Dr. Beene met with each family for a problem analysis session during which they reviewed the baseline data they had collected using the BASC. In particular, families focused on the hyperactivity scale of the BASC because this was the greatest concern that parents reported. Following a discussion of each child's functioning and need for intervention, families established goals for behavior change in collaboration with Dr. Beene who was able to educate parents about generally age-appropriate behaviors, and they discussed treatment options. Dr. Beene was familiar with efficacy studies suggesting that Incredible Years Parent Training Program (IYPTP; Webster-Stratton, 2002) resulted in significant reductions in externalizing behavior symptoms, and based on this clinical data, he encouraged families to consider using the self-administered version of the IYPTP as a primary, home-based treatment technique that they could use in consultation with him.

Treatment Implementation. Four of the five families decided to consult with Dr. Beene while completing the IYPTP program with their children in the home, while one family decided that they were more interested in having their child participate in individual therapy sessions with Dr. Beene without active parental involvement. Parents watched the IYPTP videotapes and implemented the program as consultees and had brief weekly phone consultations with Dr. Beene about the impact of the program on their children's functioning during which they answered questions from the BASC hyperactivity scale and received support to answer questions about program implementation. Every two weeks Dr. Beene met in person with the child and parent(s) for a 30-mintue session to review treatment progress. Parents were responsible for watching the Parent Training videotapes while reviewing an accompanying manual with questions for review and homework assignments to complete with their children. Parents were expected to watch and implement the suggestions provided in the one-hour long videos every two weeks, with a total of five videos to complete prior to treatment evaluation.

Treatment Evaluation. Following approximately ten weeks of IYPTP implementations, the treatment was evaluated by Dr. Beene and each family. In each case, parents reported high satisfaction with the IYPTP and they felt that suggestions and strategies provided had resulted in improvements in their relationships with their children. Beyond subjective evaluation, each family also reviewed changes in their child's hyperactivity symptoms as measured by the BASC. Visual representations of Clients A through D are presented in Figure 2. Within-case visual analyses suggested that in three of four cases, children's hyperactivity symptoms were reduced as a result of the IYPTP. Based on the data, three families decided to terminate consultation with Dr. Beene, although two families decided to follow-up

with Dr. Beene on their continued progress on a monthly basis. The family of Client D, who did not demonstrate reductions in hyperactivity, felt that the parenting techniques taught through the IYPTP had been useful; however, they reported that their son was easily upset by redirection and he was unable to calm down himself, making it difficult to implement the IYPTP suggestions. Based on these concerns, the family decided to pursue another treatment course that focused more on individual behavioral therapy between Dr. Beene and Client D.

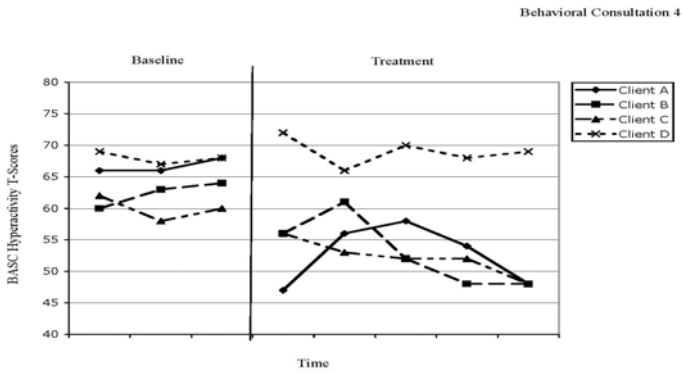

Figure 2: Replicated AB case design example illustrating client hyperactivity symptoms following IYTPT treatment initiation.

Finally, Dr. Beene used the data collected during the course of the four consultation cases to better understand how effective IYPTP is for families with pre-adolescent children diagnosed with ADHD who are not interested in medication treatments. A between-case visual analysis of the four cases suggested that the IYPTP demonstrates utility for families who are interested in decreasing their children's symptoms of hyperactivity. In three of four cases, treatment resulted in reductions in hyperactivity symptoms from a clinical to normal range of functioning. In addition, Dr. Beene was encouraged that parents found the treatment to be acceptable and reasonable to implement on their own time. Given these encouraging findings, Dr. Beene determined that the IYPTP was a promising treatment tool for this client population, and he decided to continue offering it as a treatment option to future clients.

Implications for Practice

As these two cases above illustrate, using single-case design methodologies in the context of behavioral consultation can facilitate data-based problem-solving within-cases and can provide clinicians with valuable data about the effectiveness of their practice and treatment techniques. Within the context of an individual behavioral consultation case, single-case methodologies offer clear, data-driven feedback

on treatment effectiveness for all parties, including the consultant, the consultee, and the client. As was the case with Ashley, the consultant was able to work with Ashley's mother to successfully implement a behavior change plan that resulted in increases in social interaction for Ashley. By collecting baseline data and data repeatedly across the treatment implementation phase, Ashley's mother was able to closely monitor her daughter's progress and was able to determine that the treatment was effective in supporting behavioral change. Although Ashley's mother did not have expertise in psychology or data-analysis, working within a consultation framework and using single-case design methodologies for data-collection was acceptable to her and it facilitated treatment evaluation. Since she had collected baseline data about her daughter's rate of social interactions, and she continued collecting the same data following treatment implementation, Ashley's mother and the consultant felt confident that their treatment implementation was associated with Ashley's increase in social interactions and they did not have to rely on subjective impressions of the treatment utility.

Within the context of clinical practice, using single-case methodologies in combination with behavioral consultation offers practitioners an efficient method for evaluating the utility of their treatment practices and for considering what variables may influence differential treatment outcomes across clients. According to studies of clinician practices, treatments used with clients are often selected based on clinician training experiences and trial-and-error alterations rather than data-based decision making based on individual client needs and presentation (Hayes et al., 1999). The use of a replicated AB design clients presenting similar clinical presentations enabled Dr. Beene to conduct a data-based analysis of the effectiveness of his treatment methodology across multiple clients. That is, by using the same treatment techniques and collecting the same data over time with multiple clients, the clinician builds a set of data that can be used to evaluate his treatment techniques. This data can help clinician's make generalizations about the utility of certain treatment techniques for specific client populations. In addition, the repeated nature of this within-series design, allows for intensive local observation, or the examination of the treatment effect within clients. By examining the data across and within clients, the clinician can explore why a treatment may have been more or less effective for different clients.

Ultimately, the integration of behavioral consultation and single-case design methodologies facilitates enhanced accountability in practice and it answers the call for evidence-based practice by bridging the gap between traditional research and practice. Individual client practice is supported by data-based decision-making that can occur using visual analyses of repeated measurements across baseline and treatment phases of consultation. In addition, the potential exists for clinicians to greatly increase their contribution to the applied research literature. By evaluating, documenting, and disseminating findings about the effectiveness of their service provision, practicing psychologists, social workers, and educators, can greatly increase the research base on treatment effectiveness. In turn, practitioners will have more tools and knowledge to collaborate with consultees in providing high quality care to clients in need.

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