

CHAPTER 5

CONSIDERATIONS FOR FUNCTIONAL ASSESSMENT OF PROBLEM BEHAVIOR AMONG PERSONS WITH DEVELOPMENTAL DISABILITIES AND MENTAL ILLNESS

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It is now accepted that the range of psychiatric disturbances occurs among persons with developmental disabilities (Matson & Frame, 1986), perhaps at higher rates than in the general population (Russell, 1988; Singh, Ellis, & Axtell, 1998). Problem behaviors such as aggression and self-injury are frequent among this population, which commonly result in return of individuals to more restrictive settings, such as institutions or secure settings (Borthwick, 1988; Bruininks, Hill, & Morreau, 1988; Davidson et al., 1995; Rudolph et al., 1998). Rudolph et al. (1998) reported that 82% of persons receiving a service from a community-based behavior crisis intervention team in Minnesota had a psychiatric diagnosis in addition to a developmental disability. Clearly, occurrence of problem behaviors among individuals with developmental disabilities and mental illness is a major, long-standing concern in the provision of community-based support.

Supporting this population in the community presents particular challenges, including the lack of clinical professionals familiar with unique needs present in relation to differential diagnosis. Furthermore, staff in residential and employment settings face challenges in adapting their skills acquired from supporting individuals with developmental disabilities and learning new skills needed to respond to the unique behaviors exhibited by persons with the dual diagnoses of developmental disabilities and mental illness (Davidson et al., 1995). Among the key needs is making adaptations to behavior support strategies. Functional assessment is a process for identifying causes for problem behaviors and has been a key element in supporting persons with developmental disabilities who present challenging behaviors. As psychiatric illness may be a cause for, or a factor contributing to, problem behavior, it is logical that functional assessments should consider the role that mental illness may play in occurrence of problem behavior. This does not always occur, however, and represents an area of great potential. Functional assessment for a person with dual diagnoses can contribute to understanding of how the psychiatric illness interacts with problem behavior, and thus may assist in creating effective behavior support strategies and interventions. This chapter will focus on strategies for adapting functional assessment of problem behavior to application with persons with dual diagnosis.

Overview of Functional Assessment **Understanding Why Problem Behavior Occurs**

The technology of functional assessment is based on functional analysis methodologies developed in the formative years of applied behavior analysis (Ayllon & Michael, 1959; Bijou, Peterson, & Ault, 1968). These research efforts emphasized the importance of analyzing the interaction between behavior and environment in order to understand the variables that maintain such problem behaviors as aggression, self-injury, destructive behavior, pica, and tantrums (Carr & Newsom, 1985; Mace, 1994; Mace & Knight, 1986; Mace, Page, Ivancic, & O'Brien, 1986; Slifer, Ivancic, Parrish, Page, & Burgio, 1986; Wacker et al., 1990). Functional assessment refers to a process for gathering information about an individual's behavior and the environmental variables that influence that behavior, and includes a number of strategies (Foster-Johnson, & Dunlap, 1993; Shores, Wehby, & Jack, 1999). In this chapter, we refer to functional analysis as one type of functional assessment strategy that involves the manipulation of environmental events under experimental conditions (Horner, 1994; Repp, 1999; Shores et al., 1999).

The information gathered during the functional assessment process is used to build effective intervention strategies (Carr, Langdon, & Yarbrough, 1999; Horner, 2000; Mace, 1994). A primary goal of both functional assessment and functional analysis is to identify the reasons why an individual is engaging in problem behavior (Horner & Carr, 1997; Iwata, Dorsey, Slifer, Bauman, & Richman, 1982). Although there are a number of functions that may maintain problem behavior, they are frequently maintained by negative reinforcement or positive reinforcement (Carr, 1977; Iwata et al., 1982; Mace & Lalli, 1991; O'Neill et al., 1997; Reichle & Johnston, 1993).

For instance, a considerable amount of research in applied behavior analysis has provided evidence that problem behavior may occur when an individual is trying to escape from demands, unpleasant situations, or specific people (Carr & Newsom, 1985; Iwata et al., 1994; Taylor & Carr, 1992a, 1992b). In some cases, an individual may be attempting to escape internal stimulation, such as physical pain, illness, or discomfort due to the side effects of medication (Carr & Smith, 1995; Kennedy & Thompson, 2000; O'Reilly, 1997).

Some individuals engage in problem behavior to gain attention from their staff, teachers, family, or peers. In other cases, problem behavior may occur to obtain preferred items or events (Derby et al., 1992; Durand & Crimmins, 1988). An individual's problem behavior also can be maintained by internal stimulation, as is the case when a person repetitively engages in a behavior to obtain sensory or tactile stimulation (Favell, McGimsey, & Schell, 1982; Koegel & Koegel, 1989). The functional assessment process aims to identify important environmental events that precede the occurrence of problem behavior. These environmental variables are referred to as antecedents and setting events.

Events Preceding Problem Behavior. Functional assessment methods identify the variables that can be used to reliably predict problem behavior. Antecedents are events that immediately precede the occurrence of problem behavior and are assumed to be controlling relations. Demands, critical feedback, or the types of tasks presented to an individual are all examples of antecedents that may evoke problem behavior. Setting events (or establishing operations), on the other hand, are broader contextual variables that increase or decrease the likelihood of problem behavior by altering the reinforcing or aversive properties of stimuli (Horner, Vaughn, Day & Ard, 1996; Michael, 1982). Although both antecedents and setting events precede problem behavior, setting events do not trigger problem behavior by themselves (Horner, Albin, Sprague, & Todd, 2000). However, setting events can increase the likelihood that an antecedent cue will trigger problem behavior (Carr, Reeve, & Magito-McLaughlin, 1996; Horner et al., 2000). Research indicates that setting events can include environmental, social, or physiological factors (Brown, 1991; Carr & Smith, 1995; Dadson & Horner, 1993; Gardner, Cole, Davidson, & Karan, 1986; Horner, 1980; Horner et al., 1996). Environmental setting events may occur when a person's routine is disrupted and he or she is unable to predict upcoming events.

Social setting events may include being left alone for a period of time or fighting with a family member or roommate. Illness, pain, sleep deprivation, hunger and medication changes are just a few examples of internal events that increase the likelihood of problem behaviors.

In some cases, the occurrence of psychiatric illness may be considered an antecedent or setting event for the occurrence of problem behavior in individuals with disabilities (Singh et al., 1998). Psychotropic medications also have the potential to alter an individual's response to environmental stimuli (Singh et al., 1998; Thompson & Symons, 1999). For instance, researchers are currently recommending that selection of psychotropic medications include consideration of specific pharmacological treatment effects on an individual's response to environmental stimuli maintaining both adaptive and problematic behavior (Thompson & Symons, 1999). Numerous recent publications have investigated the combination of functional assessment with drug treatment (Mace & Mauk, 1999; Northup, Fusilier, Swanson, Roane, & Borrero, 1997; Thompson & Symons, 1999), signaling growing attention to a long-ignored concern (Schall & Hackenburg, 1994).

Identifying Adaptive Behavior. In addition to identifying environmental variables that precede and follow problem behavior, the functional assessment gathers information about an individual's communication and social skills. This information can be used to design interventions to teach the individual new skills effectively competing with a problem behavior (Carr, 1988; Homer, Sprague, O'Brien, & Heathfield, 1990; Mace & Roberts, 1993; Mulick, Hoyt, Rojahn, & Schroeder, 1978). For instance, an individual may engage in disruptive behavior at work to avoid persisting on a difficult task. The functional assessment process may indicate that the individual does not know how to ask for assistance or how to complete the task. In other cases, an individual may have strong social and communication skills that are not being used in settings where problem behaviors are occurring. Information related to an individual's social and communication skills will provide the foundation for selection and teaching of new adaptive skills that may function to replace problem behaviors or reduce the motivation to perform them.

Outcomes of Functional Assessment. Although the types of assessment tools that are used may differ, the functional assessment process typically involves a basic information gathering stage leading to the formulation of hypotheses regarding the functions maintaining problem behavior (Horner et al., 2000; Iwata, Vollmer, & Zarcone, 1990). These hypotheses are then tested using direct observation (O'Neill et al., 1997). A functional assessment is considered complete when the following outcomes are accomplished: (a) there is a clear and measurable definition of the problem behavior, (b) the events, times, and situations that predict both the occurrence and nonoccurrence of problem behavior are determined, (c) consequences that maintain problem behavior are identified, (d) one or more hypotheses regarding the function maintaining problem behavior are developed, and (e) direct observation identifying and confirming the function of the problem behavior is conducted (O'Neill et al., 1997).

Functional Assessment Methods. Three types of functional assessment methods help to identify the function of a problem behavior: indirect assessment, direct assessment, and functional analysis. The number of methods used and the complexity of the functional assessment depend upon the needs of the individual and complexity of the situation. Any combination of functional assessment methods may be appropriate depending on the individual case (Tilly et al., 1998). The functional assessment process, however, remains the same whether a problem behavior is mild or severe in nature, although the strategy used may be constrained by problem severity. This section will provide a brief summary of functional assessment methods.

"Indirect assessment" information is gathered by conducting interviews, reviewing written records, using checklists and questionnaires, or by a combination of these methods (Drager et al.,

1998). Interviews with key people are used to determine the concerns regarding an individual's problem behavior and help to identify and narrow the range of variables that may be influencing the behavior's occurrence (O'Neill et al., 1997). Individuals interviewed should include people who are usually present when problem behavior occurs, or those who know the person well. The individual engaging in problem behavior may also be interviewed, although this varies depending upon communication skills and interest levels (Lewis-Palmer, Sugai, & Horner, under submission). Record reviews help to provide information on past history, while quality of life measures highlight the social aspects of the individual's life that may need attention (Baker, Sappington, Ard, Kelsch, & Horner, 1999; Kennedy, Horner, & Newton, 1990; Schalock & Keith, 1993). Finally, checklists and rating scales are available that provide insight into the function of the individual's problem behavior, aid in the classification of both adaptive and problematic behavior, or identify the factors that may predict problem behavior (Achenback & Edelbrock, 1988; Durand & Crimmins, 1988; Gardner et al., 1986; Iwata & DeLeon, 1996). The reliability of indirect assessment measures (such as interviews and rating scales) can be questionable, however, and these methods should be utilized in conjunction with direct observation or functional analysis procedures (Zarcone, Rodgers, Iwata, Rourke, & Dorsey, 1991).

"Direct methods" of assessment involve observing the individual in order to clearly identify when problem behavior occurs, what happens right before problem behavior, what problem behavior looks like, and how people respond to the occurrence of problem behavior (internal events). As such, these measures omit the consideration of possibly relevant private events. There are many types of direct observation methods available. Measurement methods can document the frequency, duration, latency and intensity of problem behavior. An interval recording method, the scatter plot, is frequently used as a functional assessment documentation tool (Touchette, MacDonald, & Langer, 1985). Data are collected during specific time intervals across the day, allowing one to identify whether problem behaviors occur at predictable time periods. Narrative data can be collected to help identify and confirm the immediate events in the environment that precede and follow the occurrence of problem behavior (Bijou et al., 1968; Doss & Reichle, 1989; Touchette et al., 1985). Descriptive methods of data collection will often involve documentation of identified setting events, antecedents, and maintaining consequences. Functional analysis, another functional assessment method, provides an empirical way to test the hypothesis developed. A "functional analysis" systematically tests hypotheses by manipulating the variables or events that are thought to be associated with the occurrence of problem behavior (Horner, 1994; Horner & Carr, 1997; Iwata et al., 1994). A functional analysis is implemented in order to determine whether the target behavior changes as a function of the variable hypothesized to be maintaining or occasioning it, while holding other variables constant (Alberto & Troutman, 1999; Axelrod, 1987; Iwata et al., 1982). A functional analysis is a formal test of the relationship between environmental variables and the occurrence and nonoccurrence of problem behaviors, testing the effects one variable has on another. Each variable that is suspected to contribute to the occurrence of a problem behavior is isolated and presented in the absence of other potentially competing sources of variation in target responding. Researchers often use this approach because it is the most precise and controlled method for demonstrating the functional relationship between environmental events and problem behavior (Iwata, et al., 1994; O'Neill et al., 1997), and it has become a standard in functional assessment research (Mace, 1994).

The extent to which the functional analysis simulates the individual's natural environment is an important consideration (Carr et al., 1999; Shores et al., 1999). A major challenge is to design analogue settings that accurately reflect the actual conditions occurring within the natural environment and to sample all of the variables that may be contributing to the occurrence of problem behavior (Carr et al., 1999). Indirect and direct functional assessment methods are often used to generate the information needed to design the analogue functional analysis conditions.

Characteristics of Functional Assessment

The major focus of functional assessment is to gather information that will be used to redesign the environment, while considering the complex interactions an individual may have with others in their environment. It is important to remember that problem behavior does not occur in a vacuum; it occurs within a social network or system (Carr, Langdon, & Yarbrough, 1994). To support an individual who engages in problem behavior, clinicians must consider the interaction between the individual and at least one other person. The responsibility for change is shared by those concerned with the individual's problem behavior. Teaching an individual new skills requires family or support staff to create opportunities for these skills to be used with appropriate responses. Even when problem behaviors are maintained by physiological events such as the presence of illness, pain, or mental illness, the manner in which individuals within the social network respond may have an impact on the occurrence and intensity of problem behaviors.

The situations and experiences encountered by individuals in one environment can naturally carry over into other settings where they live and socialize. For instance, a job coach may discover a worker consistently engages in problem behaviors when he or she has not had enough sleep the night before. This information can then be used to design intervention approaches that may address potential setting events which influence behavior in other settings and to create a consistent approach that may influence the effectiveness of behavioral support efforts. Therefore, functional assessment information should take into consideration the individual's life, across home and school or work environments (Freeman et al., 1999).

A functional assessment allows one to gain information needed to improve the quality of life for both the individual engaging in problem behavior and for the members of his or her social network. Functional assessment information is used to provide a wider range of options within the community to individuals who engage in severe problem behavior (Horner, Sprague & Flannery, 1993; Meyer & Evans, 1989; Turnbull & Guess, 1986). Strategies for improving quality of life may be more effective in reducing challenging behaviors than focusing on problem behavior in isolation (McGee, 1996) and can be viewed as an important value that should be included in ongoing behavioral consultation efforts (Carr, 1997).

Is Functional Assessment Appropriate for Assessing People with Dual Diagnosis?

A major strength of the functional assessment process is the attention paid to the whole individual's life instead of focusing narrowly on the problem behavior alone. This is particularly important when supporting an individual with both developmental disabilities and mental illness. Functional assessment can be a valuable process for gathering information about the relationship between physiological variables influencing an individual and environmental events. One way to understand how functional assessment addresses issues related to dual diagnosis is by emphasizing the interaction between physiological and environmental influences.

Physiological influences can be seen as internal events within a person's biological system that partly determine an individual's response to the environment (Carr & Smith, 1995; Schroeder, Reese, Hellings, Loupe, & Tessel, 1999). When a physiological event increases the likelihood that a person will engage in problem behavior, it is referred to as a setting event (Carr et al., 1996; Horner et al., 1996). In other cases, physiological arousal may be seen as an antecedent event for problem behavior (Freeman, Horner, & Reichle, 1999; Romanczyk & Mathews, 1999). Antecedents including physiological arousal often

immediately precede the occurrence of problem behavior. Thus, for example, highly anxious people might become more likely to engage in aggression or self-injury when their hearts are racing and they are breathing fast, especially if these events have historically coincided (Freeman et al., 1999; Romanczyk & Mathews, 1999).

The functional assessment process may aid in identification of times or situations that are associated with higher levels of physiological arousal (i.e., setting events or antecedents). This information can be used later to design intervention approaches to change the time of day an activity occurs or to teach an individual to identify signs of increasing arousal and engage in a relaxation routine (Cautela & Baron, 1973; Cautela & Groden, 1978; Freeman et al., 1999; Steen & Zuriff, 1977). In addition, problem behavior initially maintained by physiological influences can become reinforced by subsequent social outcomes (Carr & McDowell, 1980; Durand & Carr, 1987; Guess & Carr, 1991). For example, self-injurious behavior associated with a short-term illness (psychiatric or otherwise) may result in a higher level of attention from caregivers. The problem behavior may continue after the illness has abated if the individual is reinforced by the extra attention from caregivers.

Functional assessment also can provide important data relating to cyclical patterns of problem behavior (Kennedy & Thompson, 2000; Lewis, MacLean, Johnson, & Baumeister, 1981). For instance, cyclical behavioral patterns can become apparent during the functional assessment process, providing information that can be used by an attending physician or psychiatrist when assessing an individual's mental status. Identifying relationships between physiological influences and the environment is critical, especially when an individual is receiving psychopharmacological intervention (Singh et al., 1999; Thompson & Symons, 1999). There is a growing concern that more attention to these issues is needed (Romanczyk, Lockshin, & Harrison, 1993). Diagnoses based upon existing nosological schemes such as the *Diagnostic and Statistical Manual of Mental Disorders (4th ed.*, American Psychiatric Association, 2000) are often successfully assigned for individuals with mild or moderate retardation (Thompson & Symons, 1999). However, differential diagnoses may be more difficult to assign for an individual with more severe mental retardation because there may be significant communication limitations, making it difficult to obtain reliable self reports (MacLean, 1993). However, it is possible to observe clinical features that are correlated with presumed disordered neurotransmitter systems, and functional assessment strategies can utilize this information to provide better clinical support (Mace & Mauk, 1999).

Readers should bear in mind that the cornerstone of applied behavior analysis and functional assessment is the premise that behavior is lawful and predictable. If the assumption is made that the behavior follows some lawful patterns, despite its seeming "senselessness" to staff or family around the person, a set of interventions becomes available, and care providers are able to intervene in a planful and proactive manner. In functional assessment, clinicians appraise the effects of potential controlling constellations of events; in escape motivated behavior, for example, clinicians would detect through functional assessment that escaping from a situation is highly rewarding to that individual. The clinician would not necessarily pass judgement on whether the person should or should not want to escape from the situation. Here, we authors present mental illness as a potential setting event that alters the behavior of an individual. Here, setting events are defined as broad contextual variables that increase or decrease the probabilities of problem behavior by changing the salience of current environmental events. The following example presents an instance in which this may occur.

TWO CASE EXAMPLES

Ng was an individual with moderate mental retardation, physical disabilities, and an anxiety disorder. In nontechnical terms, Ng experienced events in daily

life as producing far greater levels of anxiety than was appropriate or typical for people in this culture. For example, Ng was waiting for the bus with a staff member from his group home when he noted that another person who used a wheelchair was up the street from him, also waiting for the bus. Busses in his town only had room for two wheelchairs at a time, so he worried that there would be no room for him and that he would have to wait until the next bus came, approximately 20 minutes later. He began screaming obscenities regarding the potential bus problem until the staff person recommended that they return home in order to calm down and prevent any problem behaviors from occurring on the bus, which might have triggered police involvement. At the time, the staff person was perplexed as to why Ng became so upset over a seemingly trivial and uncertain event. Upon later review of the situation, however, Ng's team inferred that Ng's anxiety disorder increased the aversiveness of (potentially) having to wait for the next bus, and escaping from the aversive situation motivated the occurrence of the problem behavior (screaming and cursing). In this case, an understanding of the setting event, the anxiety disorder, enabled the team of care-providers to better understand the reason for the problem behavior. An incident that previously seemed irrational becomes a little easier to understand. And that understanding enabled staff to intervene in a more proactive manner. In this case, the anxiety disorder appears to meet the criteria for a setting event.

Consider a second example: Juanita was a middle-aged woman who had previously experienced sexual abuse. She had a diagnosis of post-traumatic stress disorder (PTSD). When people who reminded her of her abuser approached her during periods when she was more agitated, Juanita was much more likely to become aggressive toward them. The setting event in this case was the prior abuse and PTSD. The antecedent was the presence of a person reminding her of her abuser which she found terribly aversive. Juanita's aggression was maintained by the removal of an aversive stimuli (i.e., the presence of a person reminding her of her abuser).

While this explanation does not seek to oversimplify mental illness or place too much explanatory power on this model, it allows for a way of understanding how mental illness interacts with environmental events.

The Problem of Diagnosis and Differential Diagnosis

Meaningful diagnosis of mental disorders can be difficult when adequate information is not present, or when important data are not considered by mental health professionals. Often, individuals with developmental disabilities will be referred to mental health professionals by the staff in residential or vocational programs due to behaviors that are disruptive in those settings. These individuals may not be given a comprehensive medical or psychiatric evaluation due to the presence of their developmental disability, and may instead merely be prescribed medications for "behavior management." The case of Chris is illustrative of this problem.

Chris had been referred to a psychiatrist by the staff at his group home due to aggressive behavior that included verbal threats, use of profanity, and property destruction. Chris also refused to participate in self-care tasks and recreational activities. He was prescribed a major tranquilizer. After several months, when Chris' aggression and refusals had not abated, he was referred for behavioral consultation.

In the course of functional assessment, the consultant learned that Chris was frequently irritable, spent long periods of time in bed, displayed a lack of appetite, and no longer seemed to take pleasure from activities he previously enjoyed. Chris

seemed to have very little energy, and staff requests that he perform self care activities consistently appeared to trigger aggression. Interviews with Chris revealed that he frequently felt lonely, sad, and frustrated with his physical disabilities.

The consultant, being familiar with the possibility of mental disorders, surmised that Chris was experiencing depression, and suggested to Chris' psychiatrist that a trial on anti-depressant medication might be helpful. A behavior support plan was designed as well, based on the hypothesis that Chris' depression was a significant setting event for both his aggression and refusal to participate in activities of daily living. Chris was more likely to engage in problem behavior to escape activities that he no longer found reinforcing. The staff of the group home now had a logical and compassionate understanding of his behavior. Within one month, incidents of aggression had decreased significantly, as had refusals to participate in daily activities. Chris' mood appeared brighter, and he resumed hobbies and community activities he had previously abandoned.

The problem of accurate diagnosis of mental disorders often requires a differential diagnosis. Differential diagnosis involves making clinical distinctions between types of mental disorders that may share common features, or between a mental disorder and a non-psychiatric condition that may have similar symptomatology. For example, in the case of mental disorders that share common features, individuals with a generalized anxiety disorder may display excessive worrying similar to the obsessive thoughts characteristic of a person with an obsessive compulsive disorder. In this case, it is helpful to distinguish between excessive concerns about real life situations which would point toward a generalized anxiety disorder and the non-reality based obsessional thoughts a person with an obsessive compulsive behavior might display, such as intrusive thoughts that "God" spelled backwards is "dog" (American Psychiatric Association, 2000), or compulsive behavior of gathering and retaining newspapers.

In the case of major depressive disorder and dysthymic disorder, differential diagnosis can be difficult because differences in onset, duration, persistence, and severity are not easy to evaluate retrospectively. In both of these examples, the information that would likely be obtained from a comprehensive functional assessment could help to distinguish among the types of disorders that potentially could be diagnosed and treated. The detailed information about the topography of a person's problem behavior, health and medical status, communication, daily routines, preferred and non-preferred activities, and social networks can provide an abundance of diagnostic information. Moreover, the hypotheses generated by functional assessment may describe, as in the case of Chris, a logical explanation of problem behavior that is clinically compelling to mental health professionals. This is of particular importance because in the field of mental health, as in medicine, diagnosis informs the treatment that is provided (Schall & Hackenburg, 1994).

Integrating Psychiatric Approaches into Functional Assessment

The clinician or behavior specialist who desires to work with dually diagnosed individuals should become familiar with the clinical literature regarding mental illnesses and their treatment. An understanding of psychiatric diagnoses and pharmacological treatments is essential. The *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) and a pharmaceutical desk reference, respectively, are necessary references for the behavior specialist. In the mental health literature, it is generally accepted that the most important support for families of the mentally ill is information about the mental illness (Torrey, 1997). Care providers need to know how the mental illness will likely affect the behavior of the person. Additionally, support providers need to

be informed about pharmacological treatments and their side effects (Singh et al., 1998). Often, information about psychiatric hospitalization and crisis services is needed by care providers.

When working with individuals who have dual diagnoses, the role of the clinician or behavior specialist is expanded to include: (a) educating families and other care-providers about the features of the type of condition with which the person is diagnosed, and the likely effect of the condition upon the person's behavior, (b) educating mental health practitioners about developmental disabilities and effective approaches for working with developmentally disabled persons, and (c) expanding behavioral services to include an effective linkage with psychiatric treatments, perhaps including mental health crisis services. The behavior specialist who is knowledgeable about mental illness and psychiatric treatments is uniquely positioned to design effective supports, educate the various participants on the treatment team, and coordinate and evaluate the effectiveness of interventions. As discussed earlier, individuals who are dually diagnosed often present a complex constellation of problem behaviors that may appear to be without meaning or purpose. These behaviors often frighten, confuse, or puzzle the person, family, and support team. Behaviors of concern may appear to be embedded in a confusing web of interactions that is seemingly impossible to untangle. The process of functional assessment can be a strategy to demystify the relationships between critical behaviors, the context, and both antecedents and consequences, so that effective support can be viewed as viable and meaningful to all persons involved. The authors recommend a minimum of the following steps in behavior support.

Step 1: Meet with the Person, Family, or Team

The practical first step in the process of functional assessment is to meet with the person and those who know him or her best. Whether the individual lives independently, within a family, or in a group residential setting, the creation of a support team is a good idea. As the behavioral support process progresses, this team should expand to include all of the important participants in the support and treatment of the person (e.g., family members, friends, staff, case managers, and mental health professionals). When conducting the initial meeting, the behavioral specialist or clinician should discuss the logic of functional analysis and describe the process of functional assessment, the development of the support plan, and the process of intervention and maintenance. This discussion will help to begin to demystify the behavior of the person and the concept of "treatment." Perhaps most importantly, a calm and informative discussion of functional assessment and behavioral intervention likely will begin to engender feelings of hope and empowerment in the members of the team.

Step 2: Gather Data Using Direct and Indirect Functional Assessment Methods

A comprehensive process of data collection is essential to functional assessment. At a minimum, the initial data gathered should include: (a) functional assessment interview data, (b) observation of the person across a variety of settings, and (c) review of any available records including psychological assessments, medical records, psychiatric treatment records, school documents, or work reports. The reader is referred to previous sections of this chapter for a discussion of functional assessment strategies. The clinical experience of the authors suggests that the functional assessment interview process should include both an interview of the person and an interview of his or her support team members, either individually or as a group.

The individual may appear to be a poor historian and unable to describe his or her behavior, interactions or routines. Even if this is the case, the authors believe that interviewing the person is an important step, and it typically provides useful information. Interviewing support team members or those who know the person well is essential. A group interview format can be both effective and efficient. In a group process, individuals offer various perspectives on the history of the problem, how behaviors

occur (or do not occur) across settings, and group members often assist each other to recall relevant details, clarify issues, and begin to come to an understanding of the functional relationships between the person, the environment, and problem behaviors.

The process of group interviewing can be challenging. Consultants should have some experience in facilitation of groups or obtain experience with the support of a more experienced person. Individual interviews are also an effective way to obtain functional assessment information. If the behavior specialist chooses to interview persons individually, at least two individuals who has known the person well should be interviewed. The authors recommend developing a hypothesis regarding the function and nature of problem behaviors and then confirming the hypothesis through direct assessment methods, as described earlier.

Step 3: Present Functional Assessment to Team, Family, or Care Providers

Once the functional assessment is completed, the behavior specialist should present the findings to the team and secure feedback regarding the findings. Baker, Dean, and Sprague (1997) present a more complete set of recommendations regarding consultation efforts in work with care providers.

Step 4: Assist with Brainstorming to Develop and Provide Behavioral Intervention

The consultant should use the findings of the functional assessment in order to develop a set of recommendations for improving behavior support. The following areas are recommended for consideration. First, environmental interventions should be considered. Functional assessment information about the influence of a person's environment upon problem behavior can lead to relatively straightforward and effective interventions.

For example, Sandy, a young woman diagnosed with a borderline personality disorder, displayed self-mutilating behaviors almost exclusively at night. Interview data revealed that she had intrusive thoughts concerning fears that intruders might break into her home and assault her at night when support staff were not present. Self-mutilating behaviors appeared to function to compete with these intrusive thoughts and her feelings of a lack of safety. Questions about the environment revealed that Sandy was concerned that people could see into her apartment through her venetian-style blinds. Sandy's support staff replaced the blinds with opaque curtains that covered the entire window. A bolt lock was installed on her front door, and a key was provided to on-site support staff in the event of an emergency or behavioral crisis. Sandy was given the telephone numbers for the local mental health crisis lines and instructed to call these if she felt fearful. Sandy told the behavior specialist and her on-site staff that these interventions made her feel safer in her home and less isolated. Following these simple environmental interventions, Sandy's self-mutilating behavior diminished significantly.

Second, instructional interventions should be considered. Dramatic, bizarre, explosive, or unexpected behavior of dually diagnosed individuals may effectively divert attention from problems that are maintained by the presence of simple skill deficits. Consider the case of Luanne, a young woman diagnosed with schizophrenic disorder and mild mental retardation living in a group residential setting.

Functional assessment information revealed that when Luanne had long periods of unstructured time with little or no attention, she would begin to display hallucinating behavior, or talk to individuals who were not present. These dialogues often resulted in loud arguments, and when staff responded, Luanne sometimes would begin screaming or become physically aggressive. An instructional intervention was designed that: (a) assisted Luanne to develop and use a daily schedule that provided predictable activities and routines, and times for individual attention from preferred staff members, (b) taught Luanne to ask for attention at times when she felt "nervous" or thought she was going to engage in hallucinating behavior (the plan also instructed support staff to respond appropriately to her request), and (c) taught Luanne to engage in self-relaxation as a regular daily exercise and to respond to staff prompts to "take a relaxation break" when she appeared agitated or displayed aggression. These instructional interventions were practiced in weekly training sessions conducted by direct care staff. Overtime, Luanne's hallucinating behavior and aggression decreased and her functional communication improved.

Third, counseling approaches may be very useful. The authors have found that counseling, particularly with cognitive-behavioral approaches, can be an effective part of comprehensive behavioral support for persons with dual diagnoses. When counseling is based on functional assessment information and focuses on the development of personal awareness, communication, and interpersonal skills, it can be an effective form of instruction and serve to reinforce the acquisition of new skills.

Finally, pharmaceutical interventions may be considered. When a comprehensive functional assessment has been completed and behavioral intervention strategies alone have not been successful, appropriate pharmaceutical interventions can contribute to success.

For example, Larry, a 33 year old man diagnosed with moderate mental retardation and a seizure disorder, was living in a group home. For a few months, Larry refused to eat most foods and lost significant weight. He was sleeping an average of 12 hours each day and refusing to get out of bed. He refused to care for his hygiene and grooming and refused to go to work. A functional assessment had been performed and a support plan implemented. The behaviors of concern included: (a) refusals to get out of bed in the morning and perform self-care activities, (b) social withdrawal and refusal to participate in previously preferred activities, and (c) angry outbursts directed toward care providers. The support plan emphasized offering choices, encouraging communication, increasing the predictability of routines, and reinforcing adaptive behavior. When the problem behaviors did not change, a behavior specialist with knowledge of mental illness was asked to consult. The consultant suspected that Larry should be evaluated to rule out the presence of a major depressive disorder. Following the evaluation, Larry was given this diagnosis and prescribed an anti-depressant medication. Within a few weeks, Larry was participating in his behavior support plan, sleeping less, eating more, gaining weight, going to work and caring for his hygiene and appearance.

A couple of problem areas have been noted in the clinical work of the authors which are particular to this population. First, difficulties are often encountered in working with other professionals due to the differing intervention approaches. People working from behavioral points of view may discount the contributions from psychiatric professionals, and *vice versa*. Of course, both behavioral and psychiatric points of view may be correct, and all professionals must work together (Guess & Carr, 1991). Second, staff, family, or care providers working with this population often are most familiar with supporting people with developmental disabilities, and they often are unfamiliar with the additional or differing requirements for support associated with presence of mental illness. In both of these common

problems, a functional assessment completed by a clinician with experience in both disability and mental illness may assist with identifying interventions required for behavior change and training for care providers. The interdependence of physiological and environmental factors requires clinicians to adopt an interdisciplinary approach to functional assessment (Guess & Carr, 1991; Kennedy & Thompson, 2000). A clear understanding of the problem behaviors presented by people with dual diagnosis requires both behavioral and psychiatric points of view, as learned by the authors in their consulting roles with families, schools, residential programs, employment programs, and mental health outpatient settings. A functional assessment often is invaluable in bridging these seemingly disparate points of view.

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