Chapter 3

The Integrated Biopsychosocial Approach To Challenging Behaviours

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Learning Objectives

Readers will be able to:

1. Explain limitations of unidimensional assessment and the benefits of multimodal assessment and treatment approaches for complex behaviours,
2. Identify strengths of an integrated biopsychosocial model, and develop a case formulation based on the integrated biopsychosocial model.

Introduction

Persons with psychiatric disorders who present complex challenging behaviours require complex assessment and intervention strategies. Often challenging behaviours appear to have a pattern, but the pattern often is not totally predictable or consistent in time, place, frequency, duration, or severity (Gardner, 1998). In most cases, there is no single cause or solution to these challenging behaviours. Gardner (1998) has noted that a number of different conditions may influence expression of the behaviours at different times, and in different situations. In fact, it is not uncommon for persons who know

individuals with a dual diagnosis to hold different opinions about the causes of the behavioural challenge.

The reality is that complex challenging behaviours may reflect the influences of multiple medical, psychiatric, psychological and environmental conditions. It is difficult to determine which combinations of conditions represent the most critical influences. If more than one hypothesis about conditions of influence is correct, such related issues as the following may be raised: "What is the magnitude of influence of each?" "How do the separate effects interact with each other to influence the occurrence and severity level of the behaviour?"

Historically, treatment for challenging behaviour has been unidimensional and unidisciplinary in nature. The type of treatment provided often reflected the professional discipline of the clinician rather than being based on a comprehensive case formulation of the challenging behaviour. Resulting treatments derived from the case formulation would be matched to each of the multiple relevant features of the individual and/or the environment.

In this chapter, a multimodal (bio-psycho-social) model that fosters integration of both diagnosis and treatment for challenging behaviours is described. This model represents a state of the art integrative approach in the field of dual diagnosis. Other models are discussed and compared to this integrative approach**.** The following case example illustrates the need for such an integrative model.

The Case of Mr. Jones

Mr. Jones has a long history of periodic self-injury. The episodes increased following a new vocational placement. In 1992, Mr. Jones was sent for an IQ test in order to be eligible for funding. His IQ had decreased considerably and as a result he was placed in a programme with persons with more severe challenges.

Following this change his self-injury increased in frequency. He also had other behaviours that were problematic at work, such as leaving the work area and wandering around. The vocational staff collected frequency data on the behaviours at work and found self-injury occurred an average of fifteen times a week, and leaving the work area occurred about 5 times a day. Self-injury was more frequent in certain situations such as upon arrival at work, during lunch and breaks, and when doing assembly tasks. Following each self-injurious episode, he was sent out of the room and told to calm down. The staff believed that this approach was appropriate because the behaviour stopped when he was removed. However, the behaviour did not change in frequency, and in fact increased in severity.

In 1993, noise and disruption of other clients were noted as relevant antecedents. When another client would scream or cry, Mr. Jones would begin to self-injure. As a result, he was placed in a relaxation training programme offered at the vocational setting. All persons presenting challenging behaviour took part in this 4-week programme. Mr. Jones appeared to enjoy the class. But the relaxation failed to demonstrate a

change in his behaviour when in the work setting,

In 1997, his vocational counsellor noted that Mr. Jones appeared very anxious prior to the self-injury. This occurred when working across from other workers in the workshop or when required to have eye contact and during lunches and breaks. He was referred to a psychiatrist who sent him for genetic testing for fragile x syndrome due to discernible physical features and anxiety problems. The test was positive. Mr. Jones was provided medication for excessive anxiety that often is associated with fragile x. His self-injury decreased somewhat, but continued to occur. The family discontinued the medication after finding it ineffective in eliminating his behaviour.

In 1998, a behaviour analyst completed a functional analysis and determined Mr. Jones was self-injuring to escape from the three undesired situations (a) noise, (b) assembly tasks, and (c) routine changes. The behaviour analyst suggested that Mr. Jones should be taught an alternative way to escape undesired activities. Staff, however, did not believe it was appropriate for Mr. Jones to be able to escape these situation. They discontinued the time-out programme and began a positive reinforcement program to motivate him to stay in the undesired activities. Mr. Jones went into crisis.

Mr. Jones' situation is not that unusual. Persons with dual diagnosis often have long histories of challenging behaviour and related lists of interventions that have been tried with varying degrees of success. Why were none of these successful? Prior to addressing this and related questions, a brief review of various treatment models used with persons with developmental disabilities and significant mental health concerns is provided as background information.

Models of Intervention for Challenging Behaviour

In recent decades, significant attention has been given to the treatment of challenging behaviour in persons with developmental disabilities who present mental health concerns. Two major models-- *psychopharmacological and behavioural*-- have guided most treatment efforts. An unidimensional approach to treatment of behavioural challenges in persons with a dual diagnosis too often has resulted in behaviourally-responsive symptoms being inappropriately treated with medication, and biomedically-responsive symptoms being treated with behaviour reduction procedures (Gardner, 2000). The field has experienced an overuse of medications and a misuse of behavioural procedures to suppress symptoms in the absence of an adequate comprehensive diagnostic understanding (Gardner, 2000). The psychopharmacological and traditional behavioural approaches, while reducing the frequency of some behaviours, seldom have been successful in changing the conditions producing the behaviour or taught functional alternative skills (Gardner, 2000). Dissatisfaction with this unidimensional approach to intervention for persons with mental health concerns has prompted the field to embrace an integrative biopsychosocial model.

An integrative biopsychosocial model is based on the premise that behavioural and emotional challenges faced by persons with developmental disabilities represent the *dynamic* influence of biomedical, including psychiatric and neuropsychiatric, psychological and social environmental factors (Griffiths, Gardner, & Nugent, 1998). Each factor not only may play an individual role in the expression of symptoms, but also may interplay to influence features of the behavioural challenges. It is this understanding of the dynamic interplay that brings the field to a new level of focus on the complexity of the behavioural challenges presented by persons with a dual diagnosis. The integrative biopsychosocial model has been described by Gardner and colleagues in a number of publications (e.g., Gardner & Cole, 1984; Gardner & Sovner, 1994; Gardner, 1996; Gardner & Whalen, 1996; Griffiths, Gardner, & Nugent, 1998).

This model differs initially from behavioural models in how behavioural challenges are viewed. The challenging behaviour, rather than being the focus of assessment and intervention, is viewed as a symptom of other conditions. In viewing behavioural challenges as a symptom, the diagnostic and intervention attention immediately is shifted from the behaviour to those conditions that produce the behavioural symptom. The behaviour itself tells us nothing about the controlling conditions that influence its occurrence, severity, variability, or durability. Self-injury, for example, may be influenced by medical, psychiatric, and neuropsychiatric influences, social interactions, physical and programme environmental events, psychological needs or distress, or may reflect the absence of alternative ways to deal with any of the above. Thus, reduction or elimination of the behavioural challenge is not the goal of the clinical approach. Rather, identification and modification

of the various conditions (causes) do represent the focus.

Nature of an Integrated Biopsychosocial Assessment

Gardner (1996) suggested that a challenging behaviour is a non-specific symptom relative to controlling influences and remains so until a thorough assessment has been completed of conditions that influence its occurrence, severity, variability, and durability. The assessment would include careful analysis of potential biomedical, social-environmental and psychological factors that influence the behaviour, and the interplay of those factors. Results of this integrative comprehensive bio-psycho-social assessment provide the needed basis for deriving diagnostically-based interventions.

Areas of Assessment for the Integrated Biopsychosocial Model

BIO (medical)- ***medical, psychiatric, medication reactions, syndromes, neurological state***

PSYCHO (logical)- ***current psychological features and skill deficits***

SOCIAL- ***environmental, interpersonal, programmatic, physical***

A biopsychosocial perspective is not new in the literature (Engel, 1977; Sadler & Hulgus, 1992). However, the application of this model to the field of dual diagnosis often has led to singular hypotheses (e.g., psychopharmacology vs. behavioural) or linear applications (e.g., medical then psychophar-

macology then behavioural). Complex clinical cases, particularly involving persons with a dual diagnosis, seldom reflect unidimensional or unrelated influences. Thus, the separate biopsychosocial assessment and intervention efforts were not integrative in nature. To repeat, this approach fails to account for the roles assumed and magnitude of effects exerted by the different sources of influence, or the interactions of these various influences. This dynamic interplay of influencing factors frequently accounts for the seemingly unpredictable and bewildering behaviours commonly observed in persons with a dual diagnosis (Gardner, 1998).

A brief example will demonstrate the nature of this interplay.

The Case of Mr. Abrahms

Mr. Abrahms is 32 years old. He experienced severe depression following the sudden death of his mother in a car accident. Mr. Abrahms had lived with his mother since the death of his father when he was 15 years old. Mr. Abrahms and his mother were inseparable. Since finishing school at age 21 years, he worked with his mother in their corner store. He was in the local bowling league, and was a regular church member. Following his mother's death, he was moved into a residential program on an emergency basis. The home was transitional in nature, and often persons remained for only short periods. Often, the persons in the home presented severe challenging behaviours. In the past seven months, Mr. Abrahms has almost stopped eating, rarely sleeps at night, does not bathe or change his clothes, and has been highly irritable. He recently was observed hitting one of the other residents, a behaviour never be-

fore seen. He currently spends most of his days in his room, and comes out to the living room at night when everyone else is sleeping. He seems to have no interests, and says he wants to die so he can be with his mom.

Mr. Abrahms meets the criteria for a major clinical depression (DSM-IV, APA, 1994). His irritable mood, diminished interest in all activities, lack of interest in food, insomnia and recurrent thoughts of death clearly are symptoms of a depressed mood. However, the symptoms were not present until after the death of his mother. Although the physician prescribed medication to address these mood symptoms, the death and the resulting bereavement precipitating the depressive episode were not addressed. Mr. Abrahms appears to be lacking skills to deal with grief and loss. Further, he has not been afforded the counselling and support needed for him to understand, and to cope with his grief. He was not allowed to go to his mother's funeral because his uncle felt that Mr. Abrahms might become disruptive and would not understand.

Reduction in the dysphoric mood and related somatic symptoms through psychopharmacology, although helpful, represents only one aspect of a more comprehensive set of needed interventions. Counselling and support are needed to deal with the grief regarding his mother and the other multiple losses in his life. He lost his mother, job, home, lifestyle, and best friend. Moreover, the environment that he lives in is transient, disruptive, and not structured to provide long term support. One of the other residents taunts and pinches him. In his irritable state, Mr. Abrahms responds by hitting back. Placement in a safe and comfortable home, meaningful work, leisure activities that offer pleasure and success, and positive relationships with others whose interactions provide emotionally satisfying

experiences all represent components of a more comprehensive treatment strategy. None of the programme components in isolation will meet his multiple medical and psychosocial needs. To illustrate, drugs alone will not address his psychosocial needs; counselling alone will not address his psychiatric, social, or environmental needs; a healthy life-space alone will address only one component of the multiple factors that influence his depressive condition.

For more in-depth analysis, let's revisit Mr. Jones, described earlier, and translate what we know from our case notes into the integrated biopsychosocial perspective. We know the following aspects about Mr. Jones:

BIO (medical)- ***Mr. Jones has fragile x syndrome, and demonstrates anxiety symptoms typical of persons with fragile x.***

PSYCHO (logical) - ***Mr. Jones has limited coping skills. He appears to have a low tolerance for certain stressors.***

SOCIAL- ***Mr. Jones self-injures and wanders more in certain situations (i.e., at lunch or breaks, upon arrival at work, when doing assembly tasks) and self-injury follows certain events (i.e., noise, demands for eye contact, change in routine). The behaviours appear to allow him to escape from undesired situations.***

Although it is of value to sequentially list these various assessment insights, this information is incomplete in describing the various roles and magnitude of effects, and the interaction effects on the challenging behaviour. Previous efforts with Mr. Jones showed that anxiety medication on its own was insufficient to eliminate the behaviour. Relaxation training in isolation failed to have an impact on the behaviour. Attempts at punishing him appeared to have actually strengthened the behaviour. In this case, no single diagnostic insight or intervention in isolation was sufficient. A comprehensive programme that integrates insights from different modes of influence, viz. biomedical, environmental and psychological, appears to be warranted. It is not sufficient, however, simply to treat each area independently since the influences are dynamic or interactive in nature. To accomplish an integrative treatment approach, it is valuable to determine the role that each plays in influencing the behaviour. This assessment step provides information to account for why the behaviour occurs with the frequency and pattern that it does.

Various influences having their origin in medical, psychiatric, psychological, or environmental conditions may act as (a) *instigating* conditions (b) *vulnerabilities/risk* influences, and (c) *maintaining* conditions for the behaviour. Following brief explanation of each circumstance, interventions based on each are suggested for Mr. Jones.

Instigating Conditions

Instigating conditions are "stimulus events that signal occurrence of challenging behaviours" (Gardner, 1998). Instigating conditions can exist in many forms:

- *physical environment* (e.g., noise, smells, heat, crowding)

- *social environment* (e.g., specific people, types of interactions, change or withdrawal of social contact)
- *programme environment* (e.g., changes in routines, unpredictability, excess leisure time, terminating a preferred activity or programme time)
- *psychological conditions* (e.g., specific fears, boredom, arousal states)
- *medical conditions* (e.g., those that create psychological distress resulting from pain, disorientation or irritability)
- *psychiatric/neuropsychiatric* conditions (e.g., those that produce cognitive, perception, motor, somatic, or affective symptoms that create psychological distress)

Instigating stimulus conditions can exist as either *triggering* stimulus conditions, or as *contributing* stimulus conditions. Triggering stimulus conditions refer to those events that precede and prompt behavioural occurrence. The behaviour does not occur unless antecedent triggering events specific to an individual are present. Contributing stimulus conditions, while not sufficient in isolation to produce a specific challenging behaviour, may serve to increase the likelihood of occurrence when combined with a triggering event. The influence of antecedent conditions is demonstrated by Mr. Jones in the following example:

The triggering conditions for self-injury include noise, demands to engage in eye contact, or unexpected change in his routine or care-providers. In the presence of these events, and only in the presence of one of these events, self-injury occurs. However, there are additional events that contribute to the behaviour. The challenging behaviour is more likely to occur when he is confronted with one of these contributing events in situations that are crowded and noisy. These

situations, while serving to increase the likelihood of the challenging, are insufficient in isolation to produce the behaviour. Only when the triggering events occur does self-injury result.

Vulnerability Conditions

A vulnerability may reflect either a personal feature of the individual, or a feature of the environment that places the person at increased risk for challenging behaviours. Personal features may reflect psychological deficits (e.g., limited communication or coping skills) or pathologies (e.g., inflexibility, suspiciousness, ritualism), and biomedical abnormalities (e.g., sensory or neurological impairments, psychiatric disorders). Environmental features representing either deficient or excessive conditions may be physical (e.g., limited sensory stimulation level), social (e.g., limited opportunity for social contact or excessively crowded classroom), or programmatic (e.g., type, frequency or pacing of activities) in nature. To repeat, vulnerabilities represent features of the person (biomedical and psychological) and/or the environment (physical and social) that create *increased risk* for challenging behaviours when a person is exposed to conditions of instigation. As examples, Miss Smith may have low frustration tolerance; Mr. King may have limited anger management skills; Miss Brown periodically gets migraine headaches; Mr. Alexander has manic-depressive episodes; Miss Craighead lives with abusive parents. All represent vulnerability conditions that increase the risk of the challenging behaviour when these individuals are exposed to those instigating conditions that control occurrence of their challenging behaviours. As noted, some vulnerability features represent personality characteristics (e.g., suspiciousness), others reflect skill deficits (e.g., limited anger management skills), while

others reflect medical (e.g., migraines) or psychiatric (e.g., bipolar disorder) conditions. At times, features of the social environment may represent vulnerability conditions (e.g., crowded classroom, abusive parents).

In sum, vulnerabilities may represent features of:

- *physical environment* (e.g., noisy, crowded, potentially aversive temperature variations)
- *social conditions* (e.g., abusive, taunting or demanding interactions, absence or infrequent positive social interactions or feedback)
- *programme conditions* (e.g., unpredictability, limited or excessive stimulation, limited or excessive structure),
- *psychological conditions* (e.g., limited or absence of skills of coping, communication, problem solving, daily living; motivational features such as excessive dependency on a specific type or limited range of reinforcing events, emotional over-arousal on exposure to numerous social or environmental cues)
- *medical conditions* (e.g., recurring migraine headaches, chronic arthritis, recurring episodes of general fatigue, recurring earaches)
- *psychiatric/ neuropsychiatric conditions* (e.g., Bipolar Mood Disorder, anxiety disorder, compulsive rituals, episodes of irritability.)

Sometimes vulnerabilities representing several modalities may be present and interact both to produce and strengthen behavioural challenge. Mr. Jones presents the following vulnerabilities that increase the risk of behavioural challenges when he is exposed to triggering conditions.

Fragile x syndrome presents a biomedical vulnerability, which can explain certain behavioural phenotypes, such as loss of IQ (which is not a loss of skill but a lack of acquisition of new skills), short-term memory and anxiety problems, aversion to eye contact and sequencing tasks, and the tendency to be over-aroused to noise and crowds. This explains the vulnerabilities the person is experiencing and helps in identifying possible contributing and triggering events for the self-injury. Therefore in situations of excess crowding or activities involving sequencing, he responds with high levels of anxiety with which he lacks the skills to cope. He is vulnerable to engage in behavioural challenges due to his (i) fragile x syndrome and the resulting tendency to become easily over-aroused,, (ii) repeated exposure to aversive environmental conditions (i.e., excessive noise, and sequencing tasks requiring short term memory), and (iii) lack of appropriate skills to cope with the distress.

Maintaining (Reinforcing) Conditions

Challenging behaviours increase in likelihood of being repeated as a result of consequences produced by the behaviour. Challenging behaviours can be reinforced by the attention or reactions from other individuals, by environmental pay-off such as tangibles or activities, sensory stimulation, or environmental change (Feldman & Griffiths, 1997). These and similar *positive reinforcers* may be viewed as pleasant or desired by the person. As noted, these consequences increase the likelihood that behaviour producing these effects will be repeated. Additionally, behaviour may be strengthened through a process of negative reinforcement if the behaviour results in avoid-

ance, termination, reduction, or delay of an event or situation that is unpleasant, painful, unwanted or aversive to the person. In summary, both positive and negative reinforcement experiences increase the likelihood that the challenging behaviour that produces these effects will be repeated.

Reinforcing influences may involve a range of medical, psychiatric, psychological, and social and physical environmental conditions:

- *physical environment* (e.g., removal, reduction, or avoidance of unpleasant physical conditions such as noise, heat or access to desired environment)
- *social* (e.g., avoidance of undesired social contacts, access to desired social interactions, creating distress in others)
- *programme* (e.g., avoidance of boring or difficult programme, access to desired changes in programme activity)
- *psychological* (e.g., pleasant sensory stimulation, decrease in discomfort or anxiety)
- *medical* (e.g., reduction in physical pain or distress)
- *psychiatric/neuropsychiatric* (e.g., decrease in aversive events related to disorientation, hallucinations, or dysphoria; increase in comforting social attention during periods of depression)

It should be noted that reinforcing factors are quite individual in nature. For example, Barrett et al. (1989) suggested that self-injury in a 12-year-old girl with autism and mental retardation was reinforced by the endogenous production of opiates which provided her a biological source of sensory reinforcement. A number of writers also have suggested that challenging behaviour, while frequently treated by behavioural procedures, actually may be instigated by aberrant neurological or

neurochemical influences as seen in temporal lobe epilepsy or other poorly understood neurological conditions (e.g., Matson & Gardner, 1991; Mace & Mauk, 1999).

As noted earlier, reinforcing influences cannot be examined independent of the specific antecedents involved in the occurrence. It is insufficient to report that a person's behaviour is strengthened by "negative reinforcement" without describing what the individual is avoiding, and why this is aversive to him or her. The reinforcing condition must be examined in its contexts. As described earlier, Mr. Jones did not always attempt to escape from the work area. What were the internal or external conditions that activated the escape behaviours at a specific time? There were specific times of the day when he was more likely to be self-injurious, and this behaviour appeared to be reinforced by his being able to leave the room. Why did he wish to leave the room—too warm, too noisy, fearful of peers, bored, too crowded? It is important to collect information about situations in which behaviours occur in order to establish the contextual instigating-maintaining dyads, and then to understand these in the context of vulnerability conditions.

Gardner and Sovner (1994) and Gardner (1998) describe the use of small index cards to collect valuable observational data for later analysis. For each incidence of a specified behavioural challenge, the situation, triggering events, behaviour, consequences, and the possible contributing instigating influences are recorded at the time of the occurrence. The cards can later be examined and sorted into categories depending on the type of antecedent instigating condition, features of the behaviour (e.g., type, severity, victim), and the possible maintaining or reinforcing consequences. These data, as well as other situ-

ational conditions such as time of day, location, programme being provided, physical location, presence of specific peers or staff, and the like, are used to develop hypotheses about instigating conditions and related consequences influencing the behaviour. Vulnerability influences can be added to provide a number of diagnostic hunches to guide treatment programme development.

Sample Incident Recording Card for Mr. Jones

Name: Mr. Peter Jones Observer: A. Staff
Date: Feb 8/00 Time: 9:00 a.m.
Situation: *Peter arrived at work.*
Triggering Event: *There was a lot of noise and crowding in the lobby. Two clients were fighting.*
Behaviour: *Peter tried to leave the building but was stopped. He began to bite himself.*
Consequence: *Peter was taken into the building and sent immediately to an empty workroom to calm down.*
Possible Contributing Instigating Factors: *Peter became very anxious and started to rub his hands together.*

With this background information, incidents occurring throughout a day's attendance at a vocational setting in the life of Mr. Jones are offered to illustrate the use and value of lodging these behavioural occurrences in their various contexts. Typically in clinical settings, one would collect data for at least a week or two for relatively high frequency behaviours, and often several weeks for low frequency behaviours.

Data Collection for Mr. Jones

Mr. Peter Jones **Date: Mon. Feb 8, 2000**
Setting: St. Andrews Workshop

Instigating Events	Behaviour	Maintaining Events
9 a.m.: Peter arrived at work. Two clients were fighting. Note on Possible Contributing Factors: Peter appeared anxious and was rubbing his hands.	Peter tried to leave the building but was stopped. He began to bite his hand.	He was brought into the building and sent immediately into the empty workroom to calm down.
12 noon: Peter entered the lunch room. Staff directed him to sit down to eat his lunch. He resisted and was physically guided. Note on Possible Contributing Factors: Peter appeared distressed by the music that was playing.	Peter bit his hands.	Staff warned him that if he did that again he would be sent to the sick room to calm down and miss lunch.
12:06: Peter quickly ate his lunch. A staff member approached to ask him to slow down.	He got up and walked out of the room.	Staff followed and directed him to the sick room. Note: Peter seemed less anxious once outside the lunchroom.
1:55: Peter assigned to an assembly task . 2:05 He was redirected back to work. The instructor sat across from him and requested he look at her while she instructed him in the task.	Peter got up and left the work area. Peter began to bite his hands.	He walked around for 10 minutes outside of the work area then was redirected back to work. Peter was sent to calm down in the quiet room

Instigating Events	**Behaviour**	**Maintaining Events**
2:25: Peter was told that his favourite counsellor was sick and he would be working with someone else. He began to pace and rub his hands. Note on Possible Contributing Factor: Sally was screaming .	Peter began to bite himself.	He was removed from the area and a staff counselled him about his behaviour
2:30: At break, several clients were playing a game and so he could not sit in his favourite spot in the corner.	Peter began to rub his hands and began to bite his hands.	He was removed from the group.
4:20: After getting ready to go home, the clients had to wait twenty minutes in the hallway because the bus was stuck in the snow. Note on Possible Contributing Factors: Peter was pacing back and forth and rubbing his hands together. Several peers were yelling at each other.	Peter began to bite his hands.	He was taken to the classroom until the bus arrived.

A summary of the multiple conditions presumed to influence Mr. Jones' behaviours is located on the following page.

Biopsychosocial Analysis of Peter

	Instigating Factors Triggering/ Contributing	Vulnerabilities	Reinforcing Conditions Positive/ Negative
Biomedical •Medical/ •Medication •Psychiatric/ neuro psychiatric	Anxiety when faced with social instigating conditions.	Fragile x syndrome and the resulting tendency to anxiety and overarousal.	Negative Reinforcement: Self-injury results in his escape to a less stressful environment. Anxiety (physical and psychological) discomfort is reduced.
Psychological •Current features •Skill deficits		Peter lacks appropriate means of coping with anxiety and overwhelming environmental stimulation.	Self-injury serves to produce the desired reduction in anxiety level
Social •Physical •Social •Programmatic	Excess noise, forced eye contact and changes in routines trigger self-injury. Being required to attend to an assembly task and presence of lots of people in one area can trigger escape behaviour and contribute to self-injury.	His current work environment is very noisy, crowded and has many individuals who also have behavioural challenges.	Negative Reinforcement: His self-injury and wandering behaviour allow him to escape from undesired social, programmatic and physical influences.

From Hypotheses to Intervention

Hypotheses relating to the instigating (both triggering and contributing), vulnerability, and maintaining conditions for Mr. Jones's self-injury suggest, as illustration, interventions that:

- Reduce the internal contributing instigating influence of anxiety by providing anti-anxiety medication and periods of relaxation that compete with anxious arousal.
- Remove or reduce the contributing instigating events for self-injury (socio-environmental changes such as increased structure and an adapted schedule).
- Alter his reactions to the instigating stimulus events by teaching alternative ways of coping with these events via coping skills training.

Sample Consultation Using the Integrated Biopsychosocial Model

Name: Mr. Peter Jones

<u>Consultation Members</u>:

Mr. and Mrs Jones (parents) and Peter Jones, Day Programming Staff of the Workshop, Dr. Adams (psychiatrist), Mr. Frazer (behaviour analyst), and Mrs. Dufour (social skills instructor).

Selected reports were also reviewed prior to the visit. Mr. Peter Jones was observed in his day programme environment. A contextual analysis was conducted of his behaviour for a two week period.

<u>Presenting Challenges</u>:

Mr. Jones demonstrates a number of challenging behaviours:

•*Self-injury*
•*Avoidance, escape from programming environment*

<u>Background</u>:

Mr. Jones is a 21 year old man with fragile x syndrome He has longstanding behavioural challenges. Many programmes have been attempted without significant alteration of his behaviour. Several strategies had been tried. However, the key to success appears to involve reduction in his vulnerabilities, including those created by fragile x syndrome, and how these interplay with his environment. This interplay will be essential in developing a proactive management plan and an appropriate replacement teaching programme.

<u>Integrated Biopsychosocial Intervention Plan</u>

- *<u>Biomedical Formulations:</u>*

Hypothesis: Fragile x syndrome creates various vulnerabilities which contribute to Mr. Jones's challenging behaviours:

- *Anxiety*
- *Sensory overloading*
- *Problems with noise sensitivity, crowding and space*

- *Attention and short term memory problems*
- *Gaze aversion*
- *Difficulty with assembly tasks*
- *Challenges learning new things*

Programme Objectives:

To minimize levels of anxiety and overarousal

Interventions:

1. *Dr. Adams will reintroduce the medication for anxiety.*

2. *Provide options for Mr. Jones and his family to learn about fragile x syndrome, connect with support groups and access genetic counselling (if desired).*

3. *Training for staff about the unique issues facing a person with fragile x syndrome.*

<u>Environmental Formulations</u>:

Hypotheses:

- *Sensitivity to over-stimulation caused by crowded situations and demands to do sequencing (assembly) tasks are common challenges for someone with fragile x syndrome. In this case, exposure to these conditions increases anxious arousal that serves as a trigger for Mr. Jones's wandering and self-injury and contributes to self-injury.*

- *There are triggering events for self-injury:*
  - *pressure to directly look at people*
  - *excess noise, and changes in routines*
  - *expectations and people in his life*

Programme Objectives:

To minimize and/or eliminate those aversive environmental (physical, social, programmatic) conditions that contribute to the hitting.

Interventions:

The workshop environment is very noisy and overstimulating especially at transition times, such as during the morning or at break-times. Mr. Frazer (behaviour therapist) will assist the workshop staff to adapt the routine and environment to accommodate Mr. Jones' anxiety related to his special sensitivities.

1. *Develop one room in the building that Mr. Jones could CHOOSE to use during times that are unusually busy or during transition or break times.*

2. *Mr. Jones would benefit from daily structure. Develop a predictable written daily routine that is based on his strengths (expressive communication, daily living and domestic skills, enjoyment of the outdoors, physical activity, and music), and does not weigh heavy on his weaknesses (short-term memory or sequencing problems).*

3. *Provide a programme to teach alternative ways of*

dealing with anxiety (such as deep muscle relaxation , music relaxation, or an exercise programme). He should have access to these routinely throughout the day as needed and upon request. Previously he was unable to apply his relaxation approach in the face of the anxiety triggers; this approach allows him to remove himself appropriately to a setting where he can use a variety of relaxation techniques.

Psychological Formulations:

Hypothesis: Deficit skills in social coping with changes in expectations, routines (especially when changes occur or during transitions) and frustration represent vulnerabilities.

Hypothesis: Mr. Jones's wandering and self-injury serve several functions:

- *Escape from an undesired activity, interaction, environment or demand*
- *Avoidance of an undesired activity, interaction, environment or demand*
- *Reduction in anxiety-provoking stimuli (i.e., crowding, sequential task demands).*

Programme Objectives:

1. *to teach Mr. Jones's alternative ways of coping with aversive events*

2. *to establish reinforcement for the new coping skills*

to ensure both maintenance and generalization of the skills

3. *to teach tolerance for reasonable delays.*

Interventions:

Mrs. Dufour, a social skills instructor, plans to develop a programme to teach Mr. Jones alternative strategies to cope with aversive events. She has outlined the following steps she will follow:

***Step One**: Perform a complete contextual analysis to identify the specific instigating conditions (both triggering and contributing) and the maintaining conditions for his challenging behaviours.*

***Step Two**: Select for each condition a method of that is appropriate for Mr. Jones to use as an alternative way to self-manage the situations where he is currently wandering or self-injuring.*

***Step Three**: Initially set up an individual training programme to ensure that he learns the new coping strategies. Because of his fragile x, the programme will include the use of imitation and modelling, which are his best learning approaches. He needs to be given time to respond to auditory cues; responses may be delayed.*

***Step Four**: Transfer the new coping skills to the natural environments.*

***Step Five**: Provide staff and parent training to ensure*

consistent reinforcement for the new skills. For the skills to be used in the natural environment, it is critical that skills be generalized to the natural environment and reinforced there. As example, Mr. Jones demonstrates early signs that indicate that he is getting anxious, and may need to use his new coping system (i.e., he rubs his hands). At those times, it is important that the early signs be detected and that prompts be provided for him to use one of his coping strategies rather than resorting to self-injury.

***Step Six**: Insure that Mr. Jones finds the new behaviours to be more effective than self-injury at gaining him escape or avoidance from aversive situations.*

***Step Seven**: Once the new behaviours are well established, Mr. Jones will be taught to tolerate reasonable delay. However, this would only begin once the new skills are well established as alternative ways of coping with the triggering conditions that currently produce self-injury.*

Staging the Changes

There are both pragmatic and empirical reasons for producing a staging plan. Practically, it is difficult to initiate all segments of a complex multimodal plan simultaneously. Empirically, changes that are progressively sequenced allow for assessment of the relative influence of the various interventions. However, there is a risk that caregivers may lose interest or motivation if short-term interventions produce reduction in the behavioural challenges. If these initial intervention approaches are well

designed and implemented, the challenging behaviour may be significantly reduced. This reduction may reflect the effects of (a) changes in the instigating stimulus conditions, (b) presentation of stimulus conditions for alternative prosocial behaviours, and (c) consequences that have been altered to reduce reinforcement or to inhibit occurrence of the challenging behaviours. However, these initial procedures, while supportive of long-term therapeutic effect, frequently do not produce durable changes (Gardner & Cole, 1987). These authors suggest that short-term behaviour management effects, when used independent of active treatment, neither provide the person with competency skills nor ensure durable behaviour change across times and conditions.

Best Practice Features of an Integrated Biopsychosocial Model

The integrated biopsychosocial model:

1. Incorporates the roles and magnitude of effects of biomedical and psychosocial factors on occurrence, severity, variability, and durability of challenging behaviours, and how these influences interrelate.

2. Uses assessment information to guide selection of diagnostically-based interventions.

3. Identifies the skills and related emotional/motivational supports required by the individual to cope effectively with the multiple biopsychosocial influences involved in producing the challenging behaviours.

4. Is proactive in focus.

5. Provides for translation of multiple modalities of influence into a common explanatory paradigm, i.e., conditions of instigation, vulnerability or risk influences, and maintaining influences.

6. Provides an integrated multimodal treatment and management plan.

7. Recognizes that mental health consists both of the presence of personal contentment, and the relative absence of psychological distress. The major treatment focus is that of improvement in quality of life via enhancing the competencies of the person, and providing a person-centred environment. Reduction in behavioural challenges is a natural result of these routine changes.

Summary

Persons with developmental disabilities who also demonstrate mental health needs represent a complex challenge to clinicians and service providers. In the past, intervention has often been overly simplistic and narrow. The complexity of the individual and the relationship of biomedical, psychological and social influences were often lost in a hurried attempt to eliminate a behavioural symptom. Too often, the personal experiences of the individual were not explored, and a cookbook strategy to treatment was considered selected.

Current philosophy and related practice emphasize the personal experiences of the person with a dual diagnosis as the key to assessment and treatment. Best practice requires comprehensive biomedical assessment, psychological and skill evaluation, and social-environmental investigation as a basis

for understanding the multiple contexts in which the person expresses various behavioural challenges. Intervention programs derived from this understanding represent the essence of the integrative biopsychosocial model.

Do You Know?

1. Behavioural symptoms typically are not the direct product of neurochemical abnormality, and thus do not completely subside following treatment with medication.
2. There is a growing feeling among clinical researchers that there has been too much behaviour modification in the field, and not enough comprehensive multimodal contextual analysis.
3. Comprehensive assessments include a thorough contextual analysis of the behaviour including the antecedent instigating conditions, vulnerability influences, and consequences. These influences may reflect a range of biomedical and psychosocial conditions.
4. The most successful treatments include multiple components of intervention (both behavioural and psychopharmacological), environmental manipulation and education.
5. The integrated biopsychosocial model is based on the understanding that the behavioural and emotional challenges faced by persons with developmental disabilities reflect the *dynamic* influence of these biomedical, including psychiatric and neuropsychiatric, psychological, and social environmental factors.

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