Chapter 15

Dual Diagnosis In Children

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Learning Objectives

Readers will be able to:

1. Identify specific factors contributing to emotional and behavioural problems in children and youth with developmental disabilities.
2. Describe manifestations of emotional disorders at different ages and stages of development.
3. Discuss different treatment approaches towards emotional and behavioural disorders in children and youth with developmental disabilities.

Introduction

Matthew is a 6-year-old boy with Down Syndrome. Both the school and the family are concerned because he is very active, impulsive, and resistant to appropriate behavioural management strategies despite being supported by an educational assistant in school. The family has followed through on recommendations of the behaviour management team. They ask if there are any other interventions that might help since the be-

haviour is interfering significantly with his social interactions. They wonder if it is possible for a student with Down Syndrome to have an attention problem.

There are a number of emotional and behavioural problems in children that have different frequencies, courses and manifestations when compared to an adult population. As well, service delivery systems for children may have separate linkages and different resources. Issues and demands related to education and to family evolution are dynamic, changing factors that require consideration and collaboration both for assessment and intervention when dealing with children with a potential dual diagnosis.

About 15 percent of children and youth without developmental disabilities have significant emotional and behavioural problems (Cadman, Boyle, Szatmari, & Offord, 1987). When this concerning number was discovered in Ontario, in the early 80's, only 15% of children with significant problems had received services to address them. Although the frequency of problems, in general, is fairly consistent throughout the childhood years, the types of problems do change as children evolve into adolescents. In younger children, disruptive behaviours are more prevalent and affect males more frequently. In adolescence, emotional disorders such as anxiety and depression become more common, affecting females more often than males. The same study showed that children with chronic conditions and some form of disability have three times the frequency of a behavioural or emotional problem compared to their non-disabled peers. In another survey, 41% of children age 4-18 years with a developmental disability also had a severe emotional or behavioural problem (Einfeld & Tonge, 1996). It is quite clear that professionals dealing with children

and adolescents with developmental disabilities will inevitably come in contact with a number of children with significant behavioural and emotional challenges.

What is 'normal' behaviour?

It is expected that many, if not most, young children will present some behaviour challenges to their parents and caregivers. Attention-seeking behaviour, non-compliance, tantrums and aggression are relatively frequent occurrences. Such skills and strategies such as positive approaches to changing behaviours, setting limits, and giving consistent messages, are helpful in caring for all children. Community initiatives to develop parenting skills and the training of care providers of all children are significant investments that allow straightforward problems to be addressed, and permit specialized services to address complex situations in a timely way.

Dealing with the concept of dual diagnosis in children must therefore range from usual and common issues to problems that are extremely complex. The range of services to support emotional and behavioural problems in children with problems of development will need this same type of overlay to respond to individual needs.

Family issues and needs

Parents experience a wide range of emotions when they receive information about their child's condition. A supportive, family centred approach can greatly assist parents as they come to as much acceptance as possible of the implications of the problems in both the short and long term (King, Rosenbaum, & King, 1996). In infancy and early childhood,

strategies that focus on attachment, and that give parents as much information as possible, in a manner that they are able to assimilate, are investments in the prevention of problems later on.

As children get older, parents often feel very self-conscious that their child's behaviour is a reflection of their parenting skills. Experiencing a care system that allows them to express their concerns and frustrations without a sense that they are major contributing factors, will allow them to develop confidence in their own problem solving skills to deal with difficult behaviours, as well as to build positive relationships with support services.

Assessment/diagnostic issues

When a condition or problem is serious enough to cause significant impairment, there is often a search for a diagnosis of a "disorder". Current approaches to classifying childhood behaviour and emotional problems use particular terminology based on some of the manuals and tools that are currently in use. The term "Disorder" is used when a child's symptoms meet the criteria for a diagnosis of an entity that is listed in the Diagnostic and Statistical Manual of the American Psychiatric Association Fourth Edition (DSM-IV) (American Psychiatric Association, 1994). The criteria regarding the various disorders have come from that manual. To be diagnosed, an assessment by a qualified professional must occur. In Ontario, this would be a licensed medical doctor or psychologist. When terms like Attention Deficit Hyperactivity Disorder (ADHD), or Obsessive Compulsive Disorder (OCD) are used, the implication is that a process of diagnosis has occurred. The statistics quoted above regarding the prevalence of significant emotional

and behavioural problems reflect children and adolescents who actually have one of these disorders.

The boundaries between “problems” and “disorders” are fuzzy. Questions such as “When does active behaviour become hyperactive behaviour? or “Are habits a compulsion?” are difficult to answer clearly or quickly for children without developmental disabilities. This reality suggests that the implementation of strategies known to help or change behaviours when they are issues, keeping track of their outcomes and looking for assistance and further assessment when the problems are getting worse, or continuing to significantly interfere with function, are very appropriate courses of action.

Approach to classification

Sally is a 6-year-old girl who is non-verbal. In the morning when getting dressed for school, she is very angry, yells a lot and hits her mother. This pattern of behaviour has been present for about a month.

Another way of looking at emotional and behavioural problems in children is to classify them as either internalizing or externalizing. Internalizing problems are symptoms felt within oneself such as anxiety, sadness or depression. Externalizing problems are acting out behaviours such as aggression, arguing or defiance. The interventions for internalizing problems are different than for externalizing problems. Counselling and individual therapy might help a child who is sad where behaviour modification could reduce aggression.

Since the development of the classification of behavioural/ emotional problems, we have come to realize that many chil-

dren experience both types of problems simultaneously. The term used to describe this phenomenon is co-morbidity. As well, one issue can lead to another. For example, Sally has aggressive tantrums in the morning. She may be extremely anxious about the school bus ride or an issue in her educational programme. The anxiety, an internalizing problem, is leading to the aggressive behaviour, an externalizing problem. The most appropriate intervention would be to reduce the anxiety, and potentially modify some parts of the academic programme. In addition, the teaching of alternative ways to Sally to express frustration could be important to prevent a recurrence when encountering a new frustration. This situation illustrates the complexities of supporting children with a dual diagnosis, and emphasizes the need for a careful assessment of multiple factors when deciding on an intervention programme.

There is a strong relationship between behaviour and expectations of people in the child's environment. It is important to have a sense of a child's developmental level in order to make judgments about whether one is dealing with expected behaviour for a child around that functional level, or whether the behaviour is clearly atypical. Even when the behaviour is consistent with the child's developmental level, it may be interfering with his or her success in a particular environment; and therefore, may be felt to need some modification.

An understanding of the child's specific developmental strengths and weaknesses is also relevant. Children with developmental disabilities very frequently have difficulties with the use of language. Adults use language to give instructions, and to make requests, and they often have an expectation that a child will follow through with communications directed at them. This is often the source of frustration and concern. Chil-

dren who have trouble communicating verbally may express their frustration through behaviour such as irritability, aggression, tantrums or withdrawal from the situation. If the environment continues to be overly demanding, or a high level of frustration continues for a period of time, maladaptive behaviour patterns can become established and be difficult to change, even when the communication abilities improve.

The possibility of a significant additional attention problem is often considered by caregivers. Children with weaknesses in specific areas such as fine motor skills will show limited attention to fine motor activities, reflecting a natural tendency to avoid activities that are difficult. Although, in this situation, the concern is raised about attention abilities, the key strategy would be to modify either the task or the caregiver's approach in order to have the child participate for a gradually longer period of time.

The achievement of developmental milestones leads both to a sense of accomplishment as well as new challenges. For example, parents of children around the age of one year focus on the development of skills such as walking. There is a sense of pride when this is accomplished, but the child now is able to run and climb and escape from the parents' attention much more quickly. This will require new strategies to protect the child from dangers to which he or she now has access. Since a child may not have a good concept of danger, child proofing would be the recommended intervention.

Biological issues

Biological issues associated with developmental disabilities may be identified at birth, in early infancy, or during an

evaluation for causes of delays in development. There are a number of conditions where certain behaviours and personality styles are quite common. It is now felt that certain genetic disorders such as fragile x or Williams Syndrome lead to patterns of behaviour that are neurologically based and associated with the specific genetic diagnosis, a so-called behavioural phenotype. Some examples of syndromes or conditions are listed in Table 1 along with their common behavioural issues, and some implications for the development of remedial strategies.

It is also known that injury to certain parts of the nervous system can be associated with specific behavioural manifestations. For example, damage to the right side of the brain may lead to specific problems analyzing and responding to body language. Injury to the front part of the brain may be associated with very impulsive behaviour.

This background information is important when a professional or caregiver is considering what issues may be leading to specific behavioural concerns, and is selecting strategies that may be helpful in changing the behaviour.

Specific Psychiatric Disorders

The criteria used to make a diagnosis of a specific disorder are the same in children and adults for the internalizing and emotional disorders such as anxiety and depression. Children with developmental disabilities may express their emotions through their overt behaviour. However, the issues may be more difficult to sort out since an individual may not have established a consistent pattern of behaviour where change in behaviour can lead someone to suspect a specific, significant emotional problem. It can be important, therefore, to suspect an additional or

Table 1- Examples of Syndromes and Behavioural Issues

Problem	Common Behavioural Characteristics	Developmental Issues	Intervention Implications
Down Syndrome	Externalizing behaviour including ADHD (25%) Autism more frequent (7%) Task avoidance	Specific difficulty with pronunciation	Need for behaviour support to parents early when requested May need assessment for psychiatric disorder
Fragile X Syndrome	Up to 80% ADHD Over stimulation may lead to aggression Gaze aversion and repetitive behaviours Shy and anxious in social situations Hand biting Females - anxiety and social avoidance	Delays in language and motor skills. Pronunciation and conversational problems	Intervention must consider anxiety Treatment for ADHD
Prader - Willi Syndrome	Strengths in visual organization and perception 50% behavioural outbursts Anxiety Skin picking	Motor and coordination problems Articulation problems Weakness in auditory processing	Strategies to reduce anxiety and prevent behaviour
Klinefelter Syndrome	Social withdrawal pre adolescence Impulse control and over assertive in adolescence	Speech and language delay Auditory processing problems, reading, spelling problems	Direct intervention for learning issues Hormonal treatment may be needed in adolescence
Williams Syndrome	Attention problems, anxiety, eating and sleeping problems, very perceptive of feelings of others.	Motor abilities much weaker than language	Intervention considers anxiety
Tuberous Sclerosis	Hyperactivity Autism in up to 50%. Sleep disturbance	Difficult to control seizures	Medication for seizures can affect behaviour
Angelman Syndrome	Poor attention Episodes of laughing	Limited expressive language	Behaviour strategies to improve attention Augmentative communication techniques

new problem when usual interventions and appropriate developmental programming have not been successful.

The following section will discuss problems where the diagnosis is usually made in childhood.

Pervasive Developmental Disorders

The Pervasive Developmental Disorders (PDD) are characterized by significant problems in three major areas:
1. verbal and non-verbal communication
2. reciprocal social interaction
3. restricted interests, preoccupations, fascinations and repetitive behaviours.

Onset is typically before the age of 2-2 ½, but rarely may develop in a child over this age who has shown normal development to that point. PDD includes Autistic Disorders, Rett's Disorder, Childhood Disintegration Disorder, and Asperger's Disorder. Each of the disorders presents differently.

The diagnosis of autism implies that the individual has significant problems in all three of the major areas; atypical autism is used when one of the major areas of difficulty is not present or if the course is unusual. Rett's Syndrome only occurs in girls, and is associated with poor head growth, seizures and deterioration in motor abilities. Asperger's Disorder occurs in children who have fairly normal language developmental milestones and intelligence. When it is felt that the child has PDD, but it is not possible to identify the subtype, the term PDD not otherwise specified or PDD NOS is used.

The functional areas that are evaluated to make a diagnosis are

listed in Table 2:

Table 2– Autistic Disorder Criteria
For compete diagnostic categories for Autistic Disorders of the DSM IV (APA, 1994, pp.70-71).

Impairments in Social Interaction *There is impairment such that there is not the development of typical social and emotional interaction and engagement with peers. The person tends to present non-verbally in a distinct manner with regard to facial expression, body movements and gestures and eye contact.*

Impairments in Verbal And Non-Verbal Communication *Conversation is delayed or missing or typified by language that is stereotyped, repetitive or idiosyncratic. There is little developmentally typical play behaviour.*

Problems with Restrictive, Repetitive and Stereotyped Behaviour, Interests and Activities *This is typified by preoccupation, and inflexibility, to change.*

About 80% of children with autism also have a significant delay in their cognitive abilities; some have quite a severe delay. It is unclear what proportion of children with the other subtypes also have a significant delay since the definition of these subtypes is relatively recent. It is important to emphasize that the delay and PDD are two issues that require an intervention plan. This chapter will not deal specifically with the treatment of PDD. Different strategies and more intensive interventions will be needed if PDD and a significant delay in development co-exist. The age of diagnosis of PDD has decreased as research has suggested that the presence of autism at age 2 will

continue through early childhood. Children who meet some but not all of the criteria at an early age may have a different, more positive course (Lord, 1995).

Attention Deficit Hyperactivity Disorder

There is good evidence that at least 4% of the childhood population has ADHD (Landgren, Pettersson, Kjellman, & Gillberg, 1996; Wolraich, Hannah, Baumgaertel, & Feurer, 1998; Wolraich, Hannah, Pinnock, Baumgaertel, & Brown, 1996). The frequency is more common in children with developmental disabilities, particularly with some specific entities such as fragile x syndrome. It is difficult to make a definitive diagnosis in young children of preschool age, since active behaviour, frustration in communication, and difficulties following rules are all very common, and often exist in the same child simultaneously. The structure and routine of many preschools and the training and skills of preschool teachers provides a supportive environment for many children who have attention weaknesses. The issue often becomes more focused as the child enters the school system.

ADHD is thought to be caused by differences in the brain functions responsible for paying attention, inhibiting impulses and inhibiting motor activity. Current evidence suggests that these traits may be inherited. Children who have had a brain injury, either before or after birth, that damages the front part of the brain, also often have ADHD.

There are thought to be three subtypes of ADHD: (1) ADHD primarily inattentive type, (2) ADHD primarily hyperactive-impulsive type, and (3) ADHD combined. The diagnosis is best made by ensuring that other contributions to behaviour

have been identified, using behavioural rating scales that measure these behavioural traits, ensuring the child meets criteria for the diagnosis, and implementing behavioural interventions that change difficult behaviour.

The domains that are evaluated to make a diagnosis are listed in Table 3. It is important that the child exhibits the symptoms extensively or very often. Too many children will be identified if the symptoms only are present some of the time.

Table 3- Attention Deficit Hyperactivity Disorder Criteria
(For complete criterion refer to the DSMIV (APA, 1994, pp. 83-85).

Attention Deficit Hyperactivity Disorder includes 2 major subtypes: primarily Inattentive and primarily Hyperactive Impulsive

Onset must before the age of 7 years and be evidenced in more than one environment. The disorder must be sufficient to significantly impair the individual socially, academically or occupationally..

Inattention *This includes frequent presentation of a range of symptoms including distractibility, difficulty organizing or remembering daily activities, loss of objects, inability to sustain attention, listening or tasks to completion.*

Hyperactivity *This includes fidgeting, over-activity and restlessness, impulsivity in turn-taking, interruption or intrusion, and difficulty in quiet activity.*

Children with ADHD will have another psychiatric disorder associated at least 30 % of the time. (August, Realmuto, Mac Donald, Nugent, & Crosby, 1996).

Other Disorders

Oppositional Defiant Disorder (ODD)

A summary of behaviours exhibited by children with ODD are listed in Table 4. This term is used to identify children who are frequently angry, argumentative, and frustrating for caregivers. It is felt that environmental issues more frequently contribute to oppositional behaviour than to ADHD behaviour. Many of these behaviours are thought to be part of ADHD, but it is important to view them separately since the approach to dealing with them is different.

Table 4- Oppositional Defiant Disorder Criteria

For complete criterion on Oppositional Defiant Disorder refer to the DSM-IV (APA, 1994, pp. 93-94).

Oppositional Defiant Disorder *This is typified by frequent outbursts including anger, temper, arguments, noncompliance, defiance and resentment.*

A cluster of behaviours must be frequently observed over a period of 6 months; the behaviours must be of such severity to cause significant impairment.

The behaviours must not be otherwise related to mood disorder or conduct disorder.

Obsessive behaviour

Children with developmental disabilities of all types frequently have pre-occupations, fascinations and repetitive behaviours. Whether the child has PDD or not, professionals are often asked about or become concerned about these behaviours, particularly when they have lasted a long time, or may be interfering with other expected activities. Some adults may use the child's repetitive behaviours as a barometer of the child's condition, seeing their reduction as a sign of improvement. There is controversy about the mechanisms for these behaviours, and whether direct intervention is needed to change them.

Obsessive Compulsive Disorder (OCD) may have its onset in childhood. The symptoms include obsessive thoughts that intrude and cause significant anxiety and stress, attempts to suppress the thoughts, and the person recognizing that the thoughts are the product of his or her own mind. The compulsions are behaviours that the person feels driven to perform, and they are aimed at preventing or reducing stress. The symptoms cause significant difficulties. Since children with developmental disabilities may not have the verbal skills to describe their thoughts, it is extremely difficult to clearly define the mechanisms behind their behaviours. Definition may be important, however, to decide the most appropriate interventions (AACAP, 1998).

Intervention and Treatment

When there are concerns about a behaviour or emotional disorder, the first question is to define the importance of intervening. For example, although a child may tend to be anxious, (and when very anxious may display a tantrum), if the caregiv-

ers have skills to recognize the signs of anxiety and reduce the stress, no direct intervention may be necessary. This also illustrates an important principle of intervention: prevention. It can be very appropriate to agree that a certain behaviour does not need direct intervention at a given point in time, but a strategy applied to a group or a family can actually prevent, decrease or eliminate negative behaviours that may have an emotional basis. An example of a group strategy is peer mediated schoolyard conflict resolution, which can reduce aggression in the schoolyard, and decrease modeling of this behaviour for all children, including the anxious child with a developmental disability.

An overall approach to intervention is to consider a layered system. The layers include: (1) universal, population based intervention, (2) targeted interventions to certain groups, and (3) individual interventions, which can be group or individually delivered.

A universal intervention is delivered to a population or programme such as a day-care where all children regardless of the presence of a problem are involved. An example is class-wide social skills, where outcomes such as increased cooperation occur among all children. An example of a targeted intervention is a group education programme for parents who would use the information to help with behaviour. This could be directed at all families or families of children with a developmental disability. An example of the individual approach is a behavioural assessment and programme for a child with aggressive behaviour who is quite anxious.

Most regions of the province have programmes for assessment of children with developmental delays, and behaviour inter-

vention programmes for children, adolescents, and adults with developmental disabilities. There are physicians in many centres who are aware of specific psychiatric and emotional disorders and medical options for treatment. The development of a treatment plan is best done through a coordinated approach from these services.

There are many situations where medical therapies are suggested. There are instances where there is research supporting the effectiveness of medication such as in ADHD. There are other situations where appropriate behaviour programmes and support have not been successful, and the symptoms are interfering with the child's success. Finally, there will be rare situations where there is a crisis and nobody is coping. Care must be taken since there is always the potential for side effects from medication, and there is limited information about the use of a number of medications in children. It is also important to be cautious of the long-term use because children's nervous systems are constantly changing as they mature. Due to these concerns, there is an increasing tendency to try "natural" or alternative substances. Since these therapies also are thought to affect the nervous system, the same cautions are appropriate.

When a specific entity has been diagnosed, there are ranges of treatment options that may be suggested or indicated. This next section will discuss some of the options related to specific disorders.

Attention Deficit Hyperactivity Disorder (ADHD)

The 3 main components of intervention for ADHD are: (1) parent education, (2) behaviour modification and (3) medication. Each one of these components has been demonstrated to

be helpful. The nature of ADHD is that it may well be present over a long period of time. This implies that long term planning and support to the family may well be required. Also important, interventions must be applied when the behaviour is occurring. If the child is having significant problems on the school bus, a behavioural intervention must focus on motivating and rewarding appropriate behaviour on the school bus.

Parent education has been proven to be most effective when done in a group format (Cunningham, Bremner, & Boyle, 1995). Behavioural interventions must promote motivation for appropriate behaviours and monitoring the reinforcement value of the rewards, since this fades much more quickly for children with ADHD compared to those without ADHD.

The medical options for treatment of ADHD include the stimulants, methylphenidate (Ritalin), and dextro-amphetamine (Dexedrine), as the first choice medications. Other medications are considered when these are not effective, but it is important to obtain thorough diagnostic information in order to ensure that ADHD is the condition leading to the behaviours. Each dose of methylphenidate or dextro-amphetamine lasts about 4 hours unless a long acting form is used. The dosage is decided by age, weight and titration of the medication based on improvement in the core symptoms of ADHD. Medication can be given one, two or three times per day. The common side effects include headaches, abdominal pain, loss of appetite and difficulties falling asleep. Side effects occur in approximately 50% of children who take stimulant medication. There is a suggestion that the appetite and sleeping problems are slightly more common with dextro-amphetamine.

Sometimes, stimulants are not effective, or other behaviours

such as aggression and conduct problems are resistant to usual intervention. One medication that has been used in children in this situation is clonidine. This appears to reduce agitation, and can help children fall asleep who have significant sleeping problems. There is less research on its use and safety than with the stimulant medications.

Anxiety

It is quite difficult to make a definitive diagnosis of an anxiety disorder in young children or youth with limited verbal skills. Where this is a hypothesized mechanism, transition times and new or very stimulating situations can lead to significant stress and difficult behaviours. Strategies such as warning regarding transitions, visual cues, a calming, supportive tone of voice, and relaxation techniques taught to caregivers and ultimately to the individual, are often effective in reducing the perceptions of stress, leading to more enjoyable and positive experiences. It is important to be aware of some of the subtle signs that an individual is becoming anxious, and to intervene early with such tactics as distraction and redirection. Cognitive behavioural therapy is emerging as an effective therapy for older children and adolescents with anxiety and OCD (Barrett, 1998), but it is unclear how applicable this therapy may be for individuals with a dual diagnosis. There is limited information on the use of medical therapies for children with anxiety disorders, let alone with a dual diagnosis that includes anxiety (Labellarte, Ginsburg, Walkup, & Riddle, 1999). There is some preliminary evidence of medications like fluoxetine (Prozac) being helpful (Fairbanks et al., 1997). In older adolescents, the approaches found useful with adults may be worth consideration. In children who are taking other medications such as anti-seizure medications, drug-drug inter-

actions are common, and great care must be taken when adding a new medication. As well, some anti-depressants can lower the seizure threshold, leading to a greater risk for seizures in children who have a tendency toward them.

Depression

Again, a clear diagnosis of depression in young children is extremely difficult. Attempting to provide the child with a supportive, success oriented environment, and facilitating positive family development will prevent the occurrence of reactive depression, but this can still occur related to loss, stress, or disruption outside the family's control. When there are concerns a child may be depressed due to environmental factors, dealing with and removing stress, providing positive support and opportunities for clearly positive social experiences often will be effective. There is, again, limited information on the use of medical interventions in children and young adolescents with depression (Masi, Favilla, & Mucci, 1998). It is unclear if antidepressant medication is effective in children and young teenagers.

Aggressive behaviour

Aggressive behaviour is often the issue that leads to high levels of concern and requests for assistance. The tolerance for this behaviour is very low in society, particularly in schools, and the occurrence will lead to requests for urgent intervention. There may be a tendency to use restraint as a way of controlling young children's aggression, but this often cannot be done safely in older children and adolescents. Restraint may aggravate the behaviour, and should only be done under careful supervision where safety is a concern. This chapter has em-

phasized considering behaviour as a form of communication, and thus it is essential to give careful consideration to the multiple issues when developing intervention strategies.

There are some medications such as the newer anti-psychotic medications risperidone and olanzapine that can reduce aggressive behaviour in specific instances. They may also have side effects such as weight gain. There is little information about their long-term use. With prolonged use of the medication, there is a risk of development of long-term difficulties with motor co-ordination, a problem called tardive dyskinesia.

Adolescents and transitional age young adults

The spectrum of emotional disorders changes in and after pubertal development to a pattern consistent with adults. Educational programmes and expectations shift to an emphasis on community, employment and life skills, and are more consistent. Anxiety and depression become more common, and thought disorders and schizophrenia begin to emerge. Bipolar disorder can be more easily defined as patterns of behaviour change can be tracked. The interventions for bipolar disorder are very similar to those for adults. Personality styles and traits have been observed over time, so that significant deterioration associated with the emergence of a significant emotional disorder will be clearer.

Care in children is usually delivered with parents being the major informants and decision makers. Adolescents increasingly acquire this responsibility. It is important to include the adolescent when making decisions about treatment, and to respect their decision about participation, if they are able to provide this information. In Ontario, the primary mandate for chil-

dren's mental health services rests with the Ministry of Community and Social Services (MCSS); whereas, in adults, there is a blend between the Ministry of Health Mental Health system and MCSS support services. This requires families to learn to negotiate a whole new set of services and systems of care delivery when their children reach the age of 16-18 years. Additional support to the families and assistance with linkage to new resources and systems during this transition is often required.

Summary

Issues related to dual diagnosis in children and youth change over time, and there is a need to consider the expectations of the child's environment. Emotional and behavioural problems are common. The development of an understanding of the mechanisms leading to problems will lead to the most appropriate interventions. Certain conditions are diagnosed in children, where others may emerge in adolescence and early adult life. Knowledge of the biological contributions to behavioural and emotional problems will also support the prioritization of intervention strategies.

Do You Know?

1. What factors may lead to aggressive behaviour in young children?
2. Name two biological entities and name a behaviour that may be an expression of the problem.
3. What are treatments for Attention Deficit Hyperactivity Disorder?
4. Name two types of Pervasive Developmental Disorder.

Resources

Angelman Syndrome http://rigel.phys.ualberta.ca/cass
Autism/Pervasive Developmental Disorders
http://www.autismsociety.on.ca/main.html
Down Syndrome http://www.cdss.ca/
Fetal Alcohol Syndrome http://www.ccsa.ca/fasdir.htm
Fragile X Syndrome http://www.fragile-x.ca/
Klinefelter Syndrome http://www.genetic.org/ks/index.html
Prader Willi Syndrome http://www.pwsausa.org/
Williams Syndrome http://www.bmts.com/~williams/
Tuberous Sclerosis
http://epilepsyontario.org/links/condlinks/ts.html

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