UNIT 4 CHILDHOOD MENTAL DISORDERS

Structure

4.0 INTRODUCTION

Although it is sometimes assumed that childhood and adolescence are times of carefree bliss, many children and adolescents have one or more diagnosable mental disorders. Most of these disorders may be viewed as exaggerations or distortions of normal behaviours and emotions. Like adults, children and adolescents vary in temperament. Some are shy and reticent; others are socially exuberant. Some are methodical and cautious, and others are impulsive and careless. Whether a child is behaving like a typical child or has a disorder is determined by the presence of impairment and the degree of distress related to the symptoms. First, we will discuss various types of pervasive developmental disorders as prominent childhood mental disorders. This will be followed by a description of Attention Deficit Hyperactive Disorders (ADHD). We will then discuss other childhood psychopathologies and mental retardation.

4.1 OBJECTIVES

After reading this unit, you will be able to:

- Explain pervasive developmental disorders as prominent childhood mental disorders;

- Present an account of various types of pervasive developmental disorders;
- Explain Attention Deficit Hyperactive Disorders (ADHD);
- Understand other childhood psychopathologies; and
- Present an account of mental retardation.

4.2 PERVASIVE DEVELOPMENTAL DISORDERS

The term "pervasive development disorders," also called PDDs, refers to a group of conditions that involve delays in the development of many basic skills, most notably the ability to socialise with others, to communicate, and to use imagination. Children with these conditions often are confused in their thinking and generally have problems understanding the world around them. Because these conditions typically are identified in children around 3 years of age, a critical period in a child's development, they are called developmental disorders. Although the condition begins far earlier than 3 years of age, parents often do not notice a problem until the child is a toddler who is not walking, talking, or developing as well as other children of the same age.

The use of the word "pervasive" to describe these illnesses is somewhat misleading. The definition of pervasive is "to be present throughout," but children with PDDs generally do not have problems in all areas of functioning. Rather, most children with PDDs have specific problem areas and often function very well in other areas. Children with PDDs, such as autism, can display a wide range of symptoms that can range in severity from mild to disabling. They also vary widely in their individual abilities, intelligence, and behaviour. General symptoms that may be present to some degree in a child with a PDD include:

- Difficulty with verbal communication, including problems using and understanding language
- Difficulty with non-verbal communication, such as gestures and facial expressions
- Difficulty with social interaction, including relating to people and to his or her surroundings
- Unusual ways of playing with toys and other objects
- Difficulty adjusting to changes in routine or familiar surroundings
- Repetitive body movements or patterns of behaviour, such as hand flapping, spinning and head banging
- Changing response to sound (The child may be very sensitive to some noises and seem to not hear others)
- Temper tantrums
- Difficulty sleeping
- Aggressive behaviour
- Fearfulness or anxiety (nervousness).

4.2.1 Autistic Disorder

Autism is a developmental disorder that is characterised by impaired development in communication, social interaction, and behaviour. Autism afflicts one out of every 100 to 166 children and it affects the lives of many children and their families

(DiCicco-Bloom et al, 2006). It tends to affect about five boys to every one girl (First, 2008). Autism is classified as a pervasive developmental disorder (PDD), a category of disorders that is often described interchangeably with the broad spectrum of developmental disorders affecting young children and adults called the autistic spectrum disorders (ASD). The range of these disorders varies from severely impaired individuals with autism to other individuals who have abnormalities of social interaction but normal intelligence, Asperger's syndrome. The ways in which autism is exhibited can differ greatly. Additionally, autism can be found in association with other disorders such as mental retardation and certain medical conditions. The degree of autism can range from mild to severe. Mildly affected individuals may appear very close to normal. Severely afflicted individuals may have an extreme intellectual disability and unable to function in almost any setting.

In the past, autism has been confused with childhood schizophrenia or childhood psychosis. It has also been misunderstood as schizotypal personality disorder in some adults. As additional research information about autism becomes available, the scope and definition of the condition continues to become more refined. Some of the past confusion about the disorder has been resolved.

Symptoms of autism

The current revision of Diagnosis and Statistical Manual of Mental Disorders, DSM-IV-TR identifies three features that are associated with autism:

- Impairment in social interaction
- Communication and
- Behaviours

Impairment in social interaction

Individuals with autism fail to develop normal personal interactions in virtually every setting. This means that affected persons fail to form the normal social contacts that are such an important part of human development. This impairment may be so severe that it even affects the bonding between a mother and an infant. It is important to note that, contrary to popular belief, many, if not most, persons with this disorder are capable of showing affection, demonstrating affection bonding with their mothers or other caregivers. However, the ways in which individuals with autism demonstrate affection and bonding may differ greatly from the ways in which others do so. Their limited socialisation may erroneously lead parents and paediatricians away from considering the diagnosis of autism.

As the child develops, interaction with others continues to be abnormal. Affected behaviours can include eye contact, facial expressions, and body postures. There is usually an inability to develop normal peer and sibling relationships and the child often seems isolated. There may be little or no joy or interest in normal age-appropriate activities. Affected children or adults do not seek out peers for play or other social interactions. In severe cases, they may not even be aware of the presence of other individuals.

Communication

Communication is usually severely impaired in persons with autism. What the individual understands (receptive language) as well as what is actually spoken by the individual (expressive language) are significantly delayed or nonexistent. Deficits in language

comprehension include the inability to understand simple directions, questions, or commands. There may be an absence of dramatic or pretend play and these children may not be able to engage in simple age-appropriate childhood games. Teens and adults with autism may continue to engage in playing with games that are for young children.

Individuals with autism who do speak may be unable to initiate or participate in a two-way conversation (reciprocal). Frequently the way in which a person with this disorder speaks is perceived as unusual. Their speech may seem to lack the normal emotion and sound flat or monotonous. The sentences are often very immature: "want water" instead of "I want some water please." Those with autism often repeat words or phrases that are spoken to them. For example, you might say, "Look at the airplane!" and the child may respond "at airplane," without any knowledge of what was said. This repetition is known as echolalia. Memorisation and recitation of songs, stories, commercials, or even entire scripts is not uncommon. While many feel this is a sign of intelligence, the autistic person usually does not appear to understand any of the content in his or her speech.

Behaviours

Persons with autism often exhibit a variety of repetitive, abnormal behaviours. There may also be a hypersensitivity to sensory input through vision, hearing, or touch (tactile). As a result, there may be extreme intolerance to loud noises or crowd, visual stimulation or things that are felt. Birthday parties and other celebrations can be disastrous for some of these individuals. Wearing socks or tags on clothing may be perceived as painful. Sticky fingers, playing with modelling clay, eating birthday cake or other foods, or walking barefoot across the grass can be unbearable. On the other hand, there may be an underdeveloped (hyposensitivity) response to the same type of stimulation. This individual may use abnormal means to experience visual, auditory, or tactile (touch) input. This person may head bang, scratch until blood is drawn, scream instead of speaking in a normal tone, or bring everything into close visual range. He or she might also touch an object, image or other people thoroughly just to experience the sensory input.

Children and adults who have autism are often tied to routine and many everyday tasks may be ritualistic. Something as simple as a bath might only be accomplished after the precise amount of water is in the tub, the temperature is exact, the same soap is in its assigned spot and even the same towel is in the same place. Any break in the routine can provoke a severe reaction in the individual and place a tremendous strain on the adult trying to work with him or her.

There may also be non-purposeful repetition of actions or behaviours. Persistent rocking, teeth grinding, hair or finger twirling, hand flapping and walking on tiptoe are not uncommon. Frequently, there is a preoccupation with a very limited interest or a specific plaything. A child or adult may continually play with only one type of toy. The child may line up all the dolls or cars and the adult line up their clothes or toiletries, for example, and repeatedly and systematically perform the same action on each one. Any attempt to disrupt the person may result in extreme reactions on the part of the individual with autism, including tantrums or direct physical attack. Objects that spin, open and close, or perform some other action can hold an extreme fascination. If left alone, a person with this disorder may sit for hours turning off and on a light switch, twirling a spinning toy, or stacking nesting objects. Some individuals can also have an inappropriate bonding to specific objects and become hysterical without that piece of string, paper clip, or wad of paper.

Since autism was first added to the psychiatric literature about fifty years ago, there have been numerous studies and theories about its causes. Researchers still have not reached agreement regarding its specific causes. First, it must be recognised that autism is a set of a wide variety of symptoms and may have many causes. This concept is not unusual in medicine. For instance, the set of symptoms that we perceive of as a "cold" can be caused by literally hundreds of different viruses, bacteria, and even our own immune system.

Although some remain convinced that certain vaccines, vaccine preservatives or medications taken to treat side effects of vaccines that may cause autism, conventional wisdom continues to agree that immunisations do not cause autism. Autism is thought to be a biological disorder. In the past, some researchers had suggested that autism was the result of poor attachment skills on the part of the mother. This belief has caused a great deal of unnecessary pain and guilt on the part of the parents of children with autism, when in fact, the inability of the individual with autism to interact appropriately is one of the key symptoms of this developmental disorder.

In support of a biological theory of autism, several known neurological disorders are associated with autistic features. Autism is one of the symptoms of these disorders. These conditions include:

- Tuberous sclerosis and the fragile X syndrome (inherited disorder)
- Cerebral dysgenesis (abnormal development of the brain)
- Rett's syndrome (a mutation of a single gene)
- Some of the inborn errors of metabolism (biochemical defects)

Autism, in short, seems to be the result or "final common pathway" of numerous disorders that affect brain development. Brain studies have also demonstrated that persons with autism tend to have a number of abnormalities in brain size. In general, however, when clinicians make the diagnosis of autism, they are excluding the known causes of autistic behaviours. However, as the knowledge of conditions that cause autism advances, fewer and fewer cases will likely be thought of as being "pure" autism and more individuals will be identified as having autism due to specific causes.

There is a strong association between autism and seizures. This association works in two ways. First, many patients (20% to 30%) with autism develop seizures. Second, patients with seizures, which are probably due to other causes, may develop autistic-like behaviours. One special and often misunderstood association between autism and seizures is the Landau-Kleffner Syndrome. This syndrome is also known as acquired epileptic aphasia. Some children with epilepsy develop a sudden loss of language skills—especially receptive language (the ability to understand). Many often also develop the symptoms of autism.

Certainly, disorders such as the fragile X syndrome and tuberous sclerosis, which are both associated with autism, are inherited. There are many families with more than one child with autism where the autism is not clearly due to another cause. Recent studies have found that the gene for at least one kind of familial autism may be on chromosome 13. In some families, autism seems to be passed from generation to generation. In other families, autism is not found in prior generations but it affects siblings. The results of this research make it clear that at least one "autism gene" will eventually be found.

However, the majority of individuals with autism do not have a strong family history,

which supports the premise, that environment or a combination of environmental and genetic factors contribute to the development of autism. In this context, environmental is meant to indicate any non-genetic factor, including infections, toxins, nutrition, or others.

4.2.2 Rett's Disorder

Rett's disorder is an X-linked dominant neurological disorder that affects only girls and is one of the most common causes of mental retardation in females. Girls with the syndrome show normal development during the first 6-18 months of life followed first by a period of stagnation and then by rapid regression in motor and language skills. The hallmark of Rett's syndrome is the loss of purposeful hand use and its replacement with stereotyped hand wringing. Screaming fits and inconsolable crying are common.

Other key features include loss of speech, behaviour reminiscent of autism, panic-like attacks, grinding of teeth, rigid gait, tremors, intermittent hyperventilation and microcephaly (small head). Seizures occur in about half of cases. The girls typically survive into adulthood, but are at risk of sudden unexplained death. Rett's syndrome is due to mutation in the MECP2 gene (methyl-CpG-binding protein-2) on chromosome Xq28. The vast majority of cases are sporadic and result from a new mutation in the girl with Rett's syndrome or inheritance of the mutation from a parent who has somatic or germline mosaicism with the MECP2 mutation in only some of their cells. Atypical Rett's syndrome with MECP2 mutations has been found in patients previously diagnosed with autism, mild learning disability, and mental retardation with spasticity or tremor. Rett's syndrome is a uniform and striking, progressive neurologic developmental disorder and one of the most common causes of mental retardation in females.

After normal development up to the age of 6 to 18 months, developmental stagnation occurs followed by rapid deterioration of high brain functions. Within 1 to 2 years, this deterioration progresses to loss of speech, severe dementia, behaviour reminiscent of autism, stereotypic hand-wringing movements, loss of purposeful use of the hands, jerky ataxia (wobbliness) of the trunk, intermittent hyperventilation, and microcephaly (small head). Thereafter, a period of apparent stability lasts for decades. But additional neurological abnormalities intervene insidiously These abnormalities include what is called spastic paraparesis (paralysis and spasticity of the legs) and epilepsy (seizures). A striking deceleration of growth has been found across all measurements in most girls with Rett's syndrome who end up with short stature and microcephaly. The mortality (death) rate among children with Rett's syndrome is increased (1.2% per year). A high proportion (26%) of the deaths is sudden and associated with a heart conduction problem, namely an abnormally prolonged QT interval on the electrocardiogram.

4.2.3 Asperger Syndrome

Asperger syndrome is one of the neuro-developmental disorders that have effects on an individual's behaviour, use of language and communication, and pattern of social interactions. Asperger disorder is characterised as one of the autism spectrum disorders, although Asperger syndrome is considered to be at the milder, or higher-functioning, range of this spectrum. There is still some controversy as to whether Asperger syndrome should be regarded as a separate clinical entity or it simply represents a high-functioning form of autism. People with Asperger syndrome have normal to above-average intelligence but typically have difficulties with social interactions and

often have pervasive, absorbing interests in special topics. Asperger syndrome is 5 times more common in boys than in girls. Asperger syndrome has been estimated to affect 2.5 out of every 1000 children, based upon the total number of children with autistic disorders.

Asperger syndrome is named for Dr. Hans Asperger, an Austrian pediatrician, who first described the condition in 1944. Dr. Asperger described four boys who showed "a lack of empathy, little ability to form friendships, one-sided conversation, intense absorption in a special interest, and clumsy movements." Because of their obsessive interests in and knowledge of particular subjects, he termed the boys "little professors." The American Psychiatric Association (APA) recognised Asperger disorder as a specific entity and published diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) in 1994.

Social-behavioural symptoms of Asperger syndrome can begin as early as infancy. Some of the symptoms that may be present are:

1) Lack of social awareness
2) Lack of interest in socialising/making friends
3) Difficulty making and sustaining friendships
4) Inability to infer the thoughts, feelings, or emotions of others
5) Either gazing too intently or avoiding eye contact
6) Lack of changing facial expression, or use of exaggerated facial expressions
7) Lack of use or comprehension of gestures
8) Failure to respect interpersonal boundaries
9) Unusually sensitive to noises, touch, smell, tastes, or visual stimuli
10) Inflexibility and over-adherence to or dependence on routines
11) Stereotypes and repetitive motor patterns such as hand flapping or arm waving.

Many experts in the field stress the particular gifts and positive aspects of Asperger syndrome and consider it to represent a different, but not necessarily defective, way of thinking. Positive characteristics of people with Asperger syndrome have been described as beneficial in many professions that include:

- The increased ability to focus on details
- The capacity to persevere in specific interests without being swayed by others' opinions
- The ability to work independently
- The recognition of patterns that may be missed by others
- Intensity
- An original way of thinking.

4.2.4 Childhood Disintegrative Disorder (CDD)

Childhood disintegrative disorder, also known as Heller's syndrome, is a condition in which children develop normally until ages 2 to 4, but then demonstrate a severe

loss of social, communication and other skills. Childhood disintegrative disorder is very much like autism. Both are among the group of disorders known as pervasive developmental disorders, or autism spectrum disorders. Both involve normal development followed by significant loss of language, social, play and motor skills. However, childhood disintegrative disorder typically occurs later than autism and involves a more dramatic loss of skills. In addition, childhood disintegrative disorder is far less common than autism. Loss of developmental milestones may occur abruptly over the course of days to weeks or gradually over an extended period. Children with childhood disintegrative disorder typically show the following signs and symptoms:

Dramatic loss of previously acquired skills in two or more of the following areas:

- Language, including a severe decline in the ability to speak and have a conversation
- Social skills, including significant difficulty relating to and interacting with others
- Play, including a loss of interest in imaginary play and in a variety of games and activities
- Motor skills, including a dramatic decline in the ability to walk, climb, grasp objects and other movements
- Bowel or bladder control, including frequent accidents in a child who was previously toilet-trained

Lack of normal function or impairment also occurs in at least two of the following three areas:

- Social interaction
- Communication
- Repetitive behaviour & interest patterns

There is no known cause of childhood disintegrative disorder. There is likely a genetic basis for autism spectrum disorders. The theory is that an abnormal gene is switched on in the early stages of development, before birth, and that this gene affects other genes that coordinate a child's brain development. Environmental exposure may contribute to these effects, such as to a toxin or infection. It is also possible that an autoimmune response play a role in the development of childhood disintegrative disorder. In an autoimmune response, body's immune system perceives normal body components as foreign and attacks them. Childhood disintegrative disorder often occurs along with other conditions, including:

- Tuberous sclerosis: In this condition, noncancerous (benign) tumours grow in the brain.
- Lipid storage diseases: In this rare group of inherited metabolic disorders, a toxic build up of excess fats (lipids) occurs in the brain and nervous system.
- Sub acute sclerosis panencephalitis: This chronic infection of the brain is caused by a form of the measles virus that results in brain inflammation and the death of nerve cells.

It is unknown whether these conditions play a part in triggering childhood disintegrative disorder or share genetic or environmental risk factors.

4.2.5 Pervasive Developmental Disorder not Otherwise Specified (PDD-NOS)

Pervasive developmental disorder not otherwise specified (PDD-NOS), also called atypical autism, is a neurobiological disorder characterised by impairment in ability to interact with others and by abnormalities in either communication, or behaviour patterns and interests. PDD-NOS is described as atypical autism, because individuals with the disorder exhibit some but not all of the same symptoms associated with autism (sometimes called classic autism). Likewise, "not otherwise specified," indicates that an individual's symptoms are nonspecific, meaning that they differ from symptoms characteristic of other pervasive developmental disorders, such as Rett's syndrome and childhood disintegrative disorder.

PDD-NOS affects boys four times more often than girls. The overall prevalence of the disorder remains unclear, because of the varying clinical definitions used for diagnosis. Many children who have only several symptoms of an autism like condition, which prevents a definitive diagnosis of autism, are often diagnosed instead with PDD-NOS. Symptoms associated with PDD-NOS appear after age of three and the pattern in which symptoms manifest and the behaviours displayed by affected children vary widely. Most children with the disorder appear to develop normally in the first several years of life and then experience an unusual delay in the development of social abilities. It is usually at this point in the child's development when other features of PDD-NOS become apparent. These features may include gaze avoidance, lack of expressive facial responses, irregularities in speech, repetitive and obsessive behaviours, and delayed development of motor skills. The incidence of severe intellectual disability in PDD-NOS patients is low relative to other pervasive developmental disorders.

Self Assessment Questions

1) Explain meaning and symptoms of pervasive developmental disorders.

.....

.....

.....

.....

2) Describe the symptoms and causes of autism.

.....

.....

.....

.....

3) Give an account of Rett's Disorder.

.....

.....

.....

.....

4) Explain the symptoms of Asperger Syndrome.

.....

.....

.....

.....

5) Present a clinical picture of Childhood Disintegrative Disorder (CDD).

.....

.....

.....

.....

6) Present an account of Pervasive Developmental Disorder not otherwise Specified (PDD-NOS).

.....

.....

.....

.....

Although the precise cause of PDD-NOS is unknown, abnormalities in certain structures and in neuronal pathways in the brain have been implicated. Researchers also suspect underlying genetic defects may be involved. Treatment for PDD-NOS consists primarily of behavioural therapy, though some children may require the administration of medications to stabilize mood or behaviour.

4.3 ATTENTION DEFICIT HYPERACTIVE DISORDERS (ADHD)

Attention deficit hyperactivity disorder (ADHD) is one of the most common childhood disorders and can continue through adolescence and adulthood. Symptoms include difficulty staying focused and paying attention, difficulty controlling behaviour, and hyperactivity (over-activity). Inattention, hyperactivity and impulsivity are the key behaviours of ADHD. It is normal for all children to be inattentive, hyperactive or impulsive sometimes, but for children with ADHD, these behaviours are more severe and occur more often. To be diagnosed with the disorder, a child must have symptoms for six or more months and to a degree that is greater than other children of the same age. Some of the signs of ADHD are present in many kids. Others are rarely present unless people have disabling ADHD.

a) **Inattention:** Six or more of the following symptoms of inattention must persist for at least six months to a degree that is maladaptive and inconsistent with the developmental level.

- Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
- Often has difficulty sustaining attention in tasks or play activities

- Often does not seem to listen when spoken to directly
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to failure to understand instructions)
- Often have difficulty organising tasks and activities
- Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
- Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
- Is often easily distracted by extraneous stimuli
- Is often forgetful in daily activities

Hyperactivity-impulsiveness: Six or more of the following symptoms must persist for at least 6 months to a degree that is maladaptive and inconsistent with the developmental level.

- Often fidgets with hands or feet or squirms in seat
- Often leaves seat in classroom or in other situations in which remaining seated is expected
- Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents, this may be limited to subjective feelings of restlessness)
- Often has difficulty playing or engaging in leisure activities quietly
- Is often "on the go" or often acts as if "driven by a motor"
- Often talks excessively
- Often blurts out answers before questions have been completed
- Often has difficulty awaiting turn
- Often interrupts or intrudes on others (e.g., butts into conversations or games)

b) Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.

c) Some impairment from the symptoms is present in two or more settings (e.g., at school and at home)

d) There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

There are three kinds of ADHD: ADHD without hyperactivity (symptoms and signs of attention deficit only), ADHD hyperactive-impulse type (symptoms and signs of hyperactivity-impulsiveness only) and combined type (symptoms and signs of both attention deficit and hyperactivity-impulsiveness). However, ADHD is not just about being impulsive, hyperactive and inattentive. Recent studies have shown that people with ADHD have some other interesting problems. These include:

Clumsiness

Children with ADHD tend to fall down more, tip over more things accidentally, and have worse fine motor skills than other children. While some of this is related to their

hyperactivity, a good part of it is not. This is partly the reason that people with ADHD have more accidents, have poorer handwriting, and always seem to be spilling things. This poor coordination predicts a poor outcome as adults. Those children who have marked coordination problems and ADHD are much more likely to have trouble with the law, reading problems, work difficulties and substance abuse problems as adults.

Problem in Time perception

To be coordinated and get things done, we need to have a stable internal clock. People with ADHD have much more difficulty figuring out how much time has really passed either in the short term (while trying to coordinate a movement) or in the long term (trying to decide how fast to work to get something done in a certain time frame). This inability to judge time does improve with medication.

Causes of ADHD

Like many other illnesses, ADHD probably results from a combination of factors. In addition to genetics, researchers are looking at possible environmental factors, and are studying how brain injuries, nutrition, and the social environment might contribute to ADHD.

Genes: Inherited from our parents, genes are the "blueprints" for who we are. Results from several international studies of twins show that ADHD often runs in families. Researchers are looking at several genes that may make people more likely to develop the disorder (Faraone et al, 2005; Khan, S. A., & Faraone, S. V., 2006). Knowing the genes involved may one day help researchers prevent the disorder before symptoms develop. Learning about spe-cific genes could also lead to better treatments. Children with ADHD who carry a particular version of a certain gene have thinner brain tissue in the areas of the brain associ-ated with attention (Shaw et al, 2007).

Environmental factors: Studies suggest a potential link between cigarette smoking and alcohol use during pregnancy and ADHD in children.5,6 In addition, preschoolers who are exposed to high levels of lead, which can sometimes be found in plumbing fixtures or paint in old build-ings, may have a higher risk of developing ADHD (Braun et al, 2006).

Brain injuries: Children who have suffered a brain injury may show some behaviour similar to those of ADHD. However, only a small percentage of children with ADHD have suffered a traumatic brain injury. Over the last few years, researchers have looked at the brain in people with ADHD and have found some clear abnormalities. MRI scanners take a very detailed picture of the brain in cross section. They show that parts of the base of the brain associated with attention are smaller on the right in people with ADHD. The part of the brain that connects the left and right front of the brain has also been found to be smaller in a couple of studies using MRI. When researchers look at how much work different parts of the brain are doing, they have found decreased activity in the front parts of the brain in ADHD. Special tests can show that the brain is not as efficient in ADHD when doing certain tasks and rather than being able to use a small part of the brain, a larger part must be used.

Sugar: The idea that refined sugar causes ADHD or makes symptoms worse is popular, but more research discounts this theory than supports it. In one study, researchers gave children foods containing either sugar or a sugar substitute every other day. The children who received sugar showed no different behaviour or learn-ing

capabilities than those who received the sugar substitute (Wolraich et al, 1985). Another study in which children were given higher than average amounts of sugar or sugar substi-tutes showed similar results.

In another study, children who were considered sugar-sensitive by their mothers were given the sugar substitute aspartame, also known as Nutrasweet. Although all the children got aspartame, half their mothers were told their children were given sugar, and the other half were told their children were given aspartame. The mothers who thought their children had gotten sugar rated them as more hyperac-tive than the other children and were more critical of their behaviour, compared to mothers who thought their children received aspartame (Hoover, D. W., & Milich, R., 1994)

Food additives: Recent British research indicates a possible link between con-sumption of certain food additives like artificial colours or preservatives, and an increase in activity (McCann et al, 2007). Research is under way to confirm the findings and to learn more about how food additives may affect hyperactivity.

4.4 OTHER CHILDHOOD PSYCHOPATHOLOGIES

4.4.1 Oppositional Defiant Disorder

The American Psychiatric Association's *Diagnostic and Statistical Manual, Fourth Edition* (*DSM IV*), defines oppositional defiant disorder (ODD) as a recurrent pattern of negativistic, defiant, disobedient, and hostile behaviour toward authority figures that persists for at least 6 months. Behaviours included in the definition include the following: losing one's temper; arguing with adults; actively defying requests; refusing to follow rules; deliberately annoying other people; blaming others for one's own mistakes or misbehaviour; and being touchy, easily annoyed or angered, resentful, spiteful, or vindictive. When ODD is present with ADHD, depression, tourette's, anxiety disorders, or other neuropsychiatric disorders, it makes life with that child far more difficult. For Example, ADHD plus ODD is much worse than ADHD alone, often enough to make people seek treatment.

ODD is usually diagnosed when a child has a persistent or consistent pattern of disobedience and hostility toward parents, teachers, or other adults. The primary behavioural difficulty is the consistent pattern of refusing to follow commands or requests by adults. Children with ODD are often easily annoyed; they repeatedly lose their temper, argue with adults, refuse to comply with rules and directions, and blame others for their mistakes. Stubbornness and testing limits are common, even in early childhood.

The criteria for ODD are met only when the problem behaviours occur more frequently in the child than in other children of the same age and developmental level. These behaviours cause significant difficulties with family and friends, and the oppositional behaviours are the same both at home and in school. Sometimes, ODD may be a precursor of a conduct disorder. ODD is not diagnosed if the problematic behaviours occur exclusively with a mood or psychotic disorder.

4.4.2 Conduct Disorder

Conduct disorder refers to a group of behavioural and emotional problems in youngsters. Children and adolescents with this disorder have great difficulty following rules and behaving in a socially acceptable way. They are often viewed by other children, adults and social agencies as "bad" or delinquent, rather than mentally ill. Many factors may contribute to a child developing conduct disorder, including brain

damage, child abuse, genetic vulnerability, school failure, and traumatic life experiences. Children or adolescents with conduct disorder may exhibit aggression to people and animals, destruction of property, deceitfulness, lying, or stealing and serious violations of rules.

Children who exhibit these behaviours should receive a comprehensive evaluation. Many children with a conduct disorder may have coexisting conditions such as mood disorders, anxiety, PTSD, substance abuse, ADHD, learning problems, or thought disorders, which can also be treated. Research shows that youngsters with conduct disorder are likely to have ongoing problems if they and their families do not receive early and comprehensive treatment. Without treatment, many youngsters with conduct disorder are unable to adapt to the demands of adulthood and continue to have problems with relationships and holding a job. They often break laws or behave in an antisocial manner.

4.4.3 Anxiety Disorders: Separation Anxiety Disorder

According to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*) separation anxiety is a fairly common anxiety disorder that consists of excessive anxiety beyond that expected for the child's developmental level. It is related to separation or impending separation from the attachment figure (e.g., primary caretaker, close family member) occurring in children younger than 18 years and lasting for at least 4 weeks. Features include clinically significant symptoms of anxiety (severe distress or impairment of function), unrealistic worries about the safety of loved ones, reluctance to fall asleep without being near the primary attachment figure, excessive distress (tantrums) when separation is imminent, nightmares with separation-related themes and homesickness. In addition, physical/somatic symptoms (especially frequent in older children and adolescents), such as dizziness, light headedness, nausea, stomach ache, cramps, vomiting, muscle aches, or palpitations, may be present and problematic, causing the child and family to seek medical treatment because of impaired ability to attend school or meet social responsibilities.

4.4.4 Tick Disorders

A tic is a problem in which a part of the body moves repeatedly, quickly, suddenly and uncontrollably. Tics can occur in any body part, such as the face, shoulders, hands or legs. They can be stopped voluntarily for brief periods. Sounds that are made involuntarily (such as throat clearing) are called vocal tics. Most tics are mild and hardly noticeable. However, in some cases they are frequent and severe, and can affect many areas of a child's life.

The most common tic disorder is called "transient tic disorder" and may affect up to 10 percent of children during the early school years. Teachers or others may notice the tics and wonder if the child is under stress or "nervous." Transient tics go away by themselves. Some may get worse with anxiety, tiredness, and some medications. Some tics do not go away. Tics which last one year or more are called "chronic tics." Chronic tics affect less than one percent of children and may be related to a special, more unusual tic disorder called Tourette's Disorder. Children with Tourette's Disorder have both body and vocal tics (throat clearing). Some tics disappear by early adulthood, and some continue. Children with Tourette's Disorder may also have problems with attention, and learning disabilities. They may act impulsively, and/or develop obsessions and compulsions. Sometimes people with Tourette's Disorder may blurt out obscene words, insult others, or make obscene gestures or movements. They cannot control these sounds and movements. Punishment

by parents, teasing by classmates, and scolding by teachers will not help the child to control the tics but will hurt the child's self-esteem and increase their distress.

Through a comprehensive evaluation, often involving paediatrician and/or neurologic consultation, a child and adolescent psychiatrist can determine whether a youngster has Tourette's Disorder or another tic disorder. Treatment for the child with a tic disorder may include medication to help control the symptoms. The child and adolescent psychiatrist can also advise the family about how to provide emotional support and the appropriate educational environment for the youngster.

4.4.5 Childhood Depression

Childhood depression is different from the normal mood shifts and everyday emotions that occur as a child develops. Just because a child seems depressed or sad, does not necessarily mean they have depression. If these symptoms become persistent, disruptive and interfere with social activities, interests, schoolwork and family life, it may indicate that he or she is suffering from the medical condition depression.

The symptoms of depression in children vary. Early medical studies focused on "masked" depression, where a child's depressed mood was evidenced by acting out or angry behaviour. While this does occur, particularly in younger children, many children display sadness or low mood similar to adults who are depressed. The primary symptoms of depression revolve around sadness, a feeling of hopelessness, and mood changes and may include:

- Irritability or anger
- Continuous feelings of sadness, hopelessness
- Social withdrawal
- Increased sensitivity to rejection
- Changes in appetite (either increased or decreased)
- Changes in sleep(sleeplessness or excessive sleep)
- Vocal outbursts or crying
- Difficulty concentrating
- Fatigue and low energy
- Physical complaints (such as stomach aches, headaches) that do not respond to treatment
- Reduced ability to function during events and activities at home or with friends, in school, extracurricular activities, and in other hobbies or interests
- Feelings of worthlessness or guilt
- Impaired thinking or concentration
- Thoughts of death or suicide

Not all children have all of these symptoms. In fact, most will display different symptoms at different times and in different settings. Although some children may continue to function reasonably well, most kids with significant depression will suffer a noticeable change in social activities, loss of interest in school and poor academic performance, or a change in appearance. Children may also begin using drugs or alcohol, especially if they are over the age of 12.

4.5 MENTAL RETARDATION

Mental retardation is a developmental disability that first appears in children under the age of 18. It is defined as an intellectual functioning level (as measured by standard tests for intelligence quotient) that is well below average and significant limitations in daily living skills (adaptive functioning). Mental retardation begins in childhood or adolescence before the age of 18. In most cases, it persists throughout adulthood. A diagnosis of mental retardation is made if an individual has an intellectual functioning level well below average and significant limitations in two or more adaptive skill areas. Intellectual functioning level is defined by standardised tests that measure the ability to reason in terms of mental age (intelligence quotient or IQ). Mental retardation is defined as IQ score below 70-75. Adaptive skills are the skills needed for daily life. Such skills include the ability to produce and understand language (communication); home-living skills; use of community resources; health, safety, leisure, self-care, and social skills; self-direction; functional academic skills (reading, writing, and arithmetic); and work skills.

In general, mentally retarded children reach developmental milestones such as walking and talking much later than the general population. Symptoms of mental retardation may appear at birth or later in childhood. Time of onset depends on the suspected cause of the disability. Some cases of mild mental retardation are not diagnosed before the child enters preschool. These children typically have difficulties with social, communication, and functional academic skills. Children who have a neurological disorder or illness such as encephalitis or meningitis may suddenly show signs of cognitive impairment and adaptive difficulties.

Mental retardation varies in severity. *The Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (*DSM-IV*) is the diagnostic standard for mental healthcare professionals in the United States. The *DSM-IV* classifies four different degrees of mental retardation: *mild, moderate, severe*, and *profound*. These categories are based on the functioning level of the individual.

i) **Mild mental retardation:** Approximately 85% of the mentally retarded population is in the mildly retarded category. Their IQ score ranges from 50-75, and they can often acquire academic skills up to the 6th grade level. They can become self-sufficient and in some cases live independently, with community and social support.

ii) **Moderate mental retardation:** About 10% of the mentally retarded population is considered moderately retarded. Moderately retarded individuals have IQ scores ranging from 35-55. They can carry out work and self-care tasks with moderate supervision. They typically acquire communication skills in childhood and are able to live and function successfully within the community in a supervised environment such as a group home.

iii) **Severe mental retardation:** About 3-4% of the mentally retarded population is severely retarded. Severely retarded individuals have IQ scores of 20-40. They may master very basic self-care skills and some communication skills. Many severely retarded individuals are able to live in a group home.

iv) **Profound mental retardation:** Only 1-2% of the mentally retarded population is classified as profoundly retarded. Profoundly retarded individuals have IQ scores under 20-25. They may be able to develop basic self-care and communication skills with appropriate support and training. Their retardation is often caused by an accompanying neurological disorder. The profoundly retarded need a high level of structure and supervision.

The American Association on Mental Retardation (AAMR) has developed another widely accepted diagnostic classification system for mental retardation. The AAMR classification system focuses on the capabilities of the retarded individual rather than on the limitations. The categories describe the level of support required. They are *intermittent support, limited support, extensive support*, and *pervasive support*. To some extent, the AAMR classification mirrors the *DSM-IV* classification. Intermittent support, for example, is support needed only occasionally, perhaps during times of stress or crisis. It is the type of support typically required for most mildly retarded individuals. At the other end of the spectrum, pervasive support, or life-long, daily support for most adaptive areas, would be required for profoundly retarded individuals.

Causes of Mental Retardation

Low IQ scores and limitations in adaptive skills are the hallmarks of mental retardation. Aggression, self-injury, and mood disorders are sometimes associated with the disability. The severity of the symptoms and the age at which they first appear depend on the cause. Children who are mentally retarded reach developmental milestones significantly later than expected, if at all. If retardation is caused by chromosomal or other genetic disorders, it is often apparent from infancy. If retardation is caused by childhood illnesses or injuries, learning and adaptive skills that were once easy may suddenly become difficult or impossible to master.

In about 35% of cases, the cause of mental retardation cannot be found. Biological and environmental factors that can cause mental retardation include:

Genetics: About 5% of mental retardation is caused by hereditary factors. Mental retardation may be caused by an inherited abnormality of the genes, such as fragile X syndrome. Fragile X, a defect in the chromosome that determines sex, is the most common inherited cause of mental retardation. Single gene defects such as phenylketonuria (PKU) and other inborn errors of metabolism may also cause mental retardation if they are not found and treated early. An accident or mutation in genetic development may also cause retardation. Examples of such accidents are development of an extra chromosome 18 (trisomy 18) and Down syndrome. Down syndrome, also called mongolism or trisomy 21, is caused by an abnormality in the development of chromosome 21. It is the most common genetic cause of mental retardation.

Prenatal illnesses and infections: Fetal alcohol syndrome affects one in 600 children in the United States. It is caused by excessive alcohol intake in the first twelve weeks (trimester) of pregnancy. Some studies have shown that even moderate alcohol use during pregnancy may cause learning disabilities in children. Drug abuse and cigarette smoking during pregnancy have also been linked to mental retardation. Maternal infections and illnesses such as glandular disorders, rubella, toxoplasmosis, and cytomegalovirus infection may cause mental retardation. When the mother has high blood pressure (hypertension) or blood poisoning (toxemia), the flow of oxygen to the fetus may be reduced, causing brain damage and mental retardation.

Birth defects that cause physical deformities of the head, brain, and central nervous system frequently cause mental retardation. Neural tube defect, for example, is a birth defect in which the neural tube that forms the spinal cord does not close completely. This defect may cause children to develop an accumulation of cerebrospinal fluid on the brain (hydrocephalus). Hydrocephalus can cause learning impairment by putting pressure on the brain.

Childhood illnesses, infections and injuries: Hyperthyroidism, whooping cough,

chickenpox, measles and Hib disease (a bacterial infection) may cause mental retardation if they are not treated adequately. An infection of the membrane covering the brain (meningitis) or an inflammation of the brain itself (encephalitis) causes swelling that in turn may cause brain damage and mental retardation. Traumatic brain injury caused by a blow or a violent shake to the head may also cause brain damage and mental retardation in children.

Environmental factors: Ignored or neglected infants who are not provided the mental and physical stimulation required for normal development may suffer irreversible learning impairments. Children who live in poverty and suffer from malnutrition, unhealthy living conditions, and improper or inadequate medical care are at a higher risk. Exposure to lead can also cause mental retardation. Many children have developed lead poisoning by eating the flaking lead-based paint often found in older buildings.

Diagnosis: If mental retardation is suspected, a comprehensive physical examination and medical history should be done immediately to discover any organic cause of symptoms. Conditions such as hyperthyroidism and PKU are treatable. If these conditions are discovered early, the progression of retardation can be stopped and, in some cases, partially reversed. If a neurological cause such as brain injury is suspected, the child may be referred to a neurologist or neuropsychologist for testing.

A complete medical, family, social, and educational history is compiled from existing medical and school records (if applicable) and from interviews with parents. Children are given intelligence tests to measure their learning abilities and intellectual functioning. Such tests include the Stanford-Binet Intelligence Scale, the Wechsler Intelligence Scales, the Wechsler Preschool and Primary Scale of Intelligence, and the Kaufmann Assessment Battery for Children. For infants, the Bayley Scales of Infant Development may be used to assess motor, language, and problem-solving skills. Interviews with parents or other caregivers are used to assess the child's daily living, muscle control, communication, and social skills. The Woodcock-Johnson Scales of Independent Behaviour and the Vineland Adaptive Behaviour Scale (VABS) are frequently used to test these skills.

Self Assessment Questions

1) Present a clinical picture of Attention deficit hyperactivity disorder (ADHD).

.....

.....

.....

.....

2) Describe oppositional defiant disorder.

.....

.....

.....

.....

3) Give an account of conduct disorder.

.....

.....

.....

.....

4) Explain the childhood anxiety disorders (separation anxiety disorder).

.....

.....

.....

.....

5) Describe the tick disorders and childhood depression.

.....

.....

.....

.....

6) Present an account of mental retardation.

.....

.....

.....

.....

4.6 LET US SUM UP

The term "pervasive development disorders," also called PDDs, refers to a group of conditions that involve delays in the development of many basic skills, most notably the ability to socialise with others, to communicate, and to use imagination. Children with these conditions often are confused in their thinking and generally have problems understanding the world around them. PDDs include autism, Asperger's syndrome, childhood disintegrative disorder, Rett's syndrome and pervasive development disorder not otherwise specified (PDDNOS). Children with autism have problems with social interaction, pretend play, and communication. They also have a limited range of activities and interests. Many (nearly 75%) of children with autism also have some degree of mental retardation. Like children with autism, children with Asperger's syndrome have difficulty with social interaction and communication, and have a narrow range of interests. However, children with Asperger's have average or above average intelligence, and develop normally in the areas of language and cognition. Children with Asperger's also have difficulty concentrating and may have poor coordination. Children childhood disintegrative disorder begin their development normally in all areas, physical and mental. At some point, usually between 2 and 10 years of age, a child with this illness loses many of the skills he or she has developed. In addition to the loss of social and language skills, a child with disintegrative disorder may lose control of other functions, including bowel and bladder control. Children with Rett's syndrome have the symptoms associated with a PDD and suffer problems with physical development. They generally suffer the loss of many motor or movement, skills, such as walking and use of their hands and develop poor coordination. Pervasive

development disorder not otherwise specified (PDDNOS) is used to refer to children who have significant problems with communication and play, and some difficulty interacting with others, but are too social to be considered autistic.

Attention deficit hyperactivity disorder (ADHD) is one of the most common childhood disorders and can continue through adolescence and adulthood. Symptoms include difficulty staying focused and paying attention, difficulty controlling behaviour, and hyperactivity (over-activity). Inattention, hyperactivity and impulsivity are the key behaviours of ADHD. It is normal for all children to be inattentive, hyperactive or impulsive sometimes, but for children with ADHD, these behaviours are more severe and occur more often. To be diagnosed with the disorder, a child must have symptoms for six or more months and to a degree that is greater than other children of the same age. Some of the signs of ADHD are present in many kids. Others are rarely present unless people have disabling ADHD. There are many disorders which are often found with/or without ADHD. These include oppositional defiant disorder, conduct disorder, anxiety disorders (separation anxiety disorder), tick disorders and childhood depression. Mental retardation is a developmental disability that first appears in children under the age of 18. It is defined as an intellectual functioning level (as measured by standard tests for intelligence quotient) that is well below average and significant limitations in daily living skills (adaptive functioning). Mental retardation begins in childhood or adolescence before the age of 18. In most cases, it persists throughout adulthood. A diagnosis of mental retardation is made if an individual has an intellectual functioning level well below average and significant limitations in two or more adaptive skill areas. Intellectual functioning level is defined by standardised tests that measure the ability to reason in terms of mental age (intelligence quotient or IQ). Mental retardation is defined as IQ score below 70-75. Adaptive skills are the skills needed for daily life. Such skills include the ability to produce and understand language (communication); home-living skills; use of community resources; health, safety, leisure, self-care, and social skills; self-direction; functional academic skills (reading, writing, and arithmetic); and work skills.

4.7 UNIT END QUESTIONS

1) Explain meaning and general symptoms of pervasive developmental disorders.
2) Describe the symptoms and causes of autism.
3) Describe Rett's disorder, Asperger syndrome, childhood disintegrative disorder (CDD) and pervasive developmental disorder not otherwise specified (PDD-NOS) as autism spectrum disorders.
4) Present a complete clinical picture of attention deficit hyperactivity disorder (ADHD).
5) Explain the disorders which are often found with/or without ADHD.
6) Elaborate the meaning, types and causes of mental retardation.

4.8 GLOSSARY

Pervasive Development Disorders : Pervasive development disorders refer to a group of conditions that involve delays in the development of many basic skills.

Autism : Autism is a developmental disorder characterised by impaired development in communication, social interaction and behaviour.

Rett's Disorder : Rett's disorder includes the loss of purposeful hand use, screaming fits, inconsolable crying, loss of speech, behaviour reminiscent of autism, panic-like attacks, grinding of teeth, rigid gait, tremors, intermittent hyperventilation and microcephaly.

Asperger Syndrome : Asperger syndrome is one of the neuro-developmental disorders that have effects on an individual's behaviour, use of language and communication and pattern of social interactions.

Childhood Disintegrative Disorder : Childhood disintegrative disorder is a condition in which children develop normally until ages 2 to 4 but then demonstrate a severe loss of social, communication and other skills.

Attention Deficit Hyperactivity Disorder (ADHD) : ADHD is one of the most common childhood disorders with the symptoms of difficulty in focusing and paying attention, difficulty in controlling behaviour and hyperactivity.

Oppositional Defiant Disorder (ODD) : ODD is a recurrent pattern of negativistic, defiant, disobedient, and hostile behaviour toward authority figures.

Conduct Disorder : Conduct disorder refers to a group of behavioural and emotional problems in children that include great difficulty in following rules and behaving in a socially acceptable way.

Separation Anxiety : Separation anxiety is related to excessive anxiety of separation or impending separation from the attachment figure (e.g., primary caretaker, close family member).

Tick Disorders : A tic is a problem in which a part of the body moves repeatedly, quickly, suddenly and uncontrollably.

Mental Retardation : Mental retardation refers to an individual's intellectual functioning level well below average and significant limitations in two or more adaptive skill areas.

4.9 SUGGESTED READINGS

Barlow, D. H., & Durand, V. M. (2005). *Abnormal Psychology: An Integrative Approach (4th ed)*. Belmont, CA: Thomson-Wadsworth.

Carson, R. C., Butcher, J. N., & Mineka, S. (2002). Clinical assessment and treatment. In *Fundamentals of Abnormal Psychology and Modern Life*. New York: Allyn & Bacon.

References

Diagnostic & Statistical Manual of Mental Disorders: DSM-IV. 4th ed. (1994). American Psychiatric Association. Washington, DC: American Psychiatric Press.

American Association on Mental Retardation (AAMR). 444 North Capitol St., NW, Suite 846, Washington, D.C.

DiCicco-Bloom, E., Lord, C., Zwaigenbaum, L., Courchesne, E. Dager, S. R., Schmitz, C., Schultz, R. T., Crawley, J., & Young, L. J. (2006). The Developmental Neurobiology of Autism Spectrum Disorder, *The Journal of Neuroscience, 26,* 6897-6906.

Faraone, S. V., Perlis, R. H., Doyle, A. E., Smoller, J. W., Goralnick. J. J., Holmgren, M. A., & Sklar, P. (2005). Molecular genetics of attention-deficit/ hyperactivity disorder. *Biological Psychiatry, 57,* 1313-1323.

Khan, S. A., & Faraone, S. V. (2006). The genetics of attention-deficit/hyperactivity disorder: A literature review of 2005. *Current Psychiatry Reports, 8,* 393-397.

Shaw, P., Gornick, M., Lerch, J., Addington, A., Seal, J., Greenstein, D., Sharp, W., Evans, A., Giedd, J. N., Castellanos, F. X., & Rapoport, J. L. (2007). Polymorphisms of the dopamine D4 receptor, clinical outcome and cortical structure in attention-deficit/hyperactivity disorder. *Archives of General Psychiatry*, *64(8),* 921-931.

Braun, J., Kahn, R. S., Froehlich, T., Auinger, P., & Lanphear, B. P. (2006). Exposures to environmental toxicants and attention-deficit/hyperactivity disorder in U.S. children. *Environmental Health Perspectives*, *114,* 1904-1909.

Wolraich, M., Milich, R., Stumbo, P., & Schultz, F. (1985). The effects of sucrose ingestion on the behavior of hyperactive boys. *Pediatrics*, *106,* 657-682.

Hoover, D. W., & Milich, R. (1994). Effects of sugar ingestion expectancies on mother-child interaction. *Journal of Abnormal Child Psychology*, *22,* 501-515.

McCann, D., Barrett, A., Cooper, A., Crumpler, D., Dalen, L., Grimshaw, K., Kitchin, E., Lok, E., Porteous, L., Prince, E., Sonuga-Barke, E., Warner, J. O. & Stevenson J. (2007). Food additives and hyperactive behaviour in 3-year-old and 8/9-year-old children in the community: a randomised, double-blinded, placebo-controlled trial. *Lancet*, *370,* 1560-1567.