
UNIT 15 DEVELOPMENTAL PSYCHOPATHOLOGY I¹⁵

Perspectives On
Human
Development II:
Cognitive
Perspective

Structure

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Learning Objectives:

After reading this unit, you will be able to:

- explain developmental psychopathology;
- elucidate disruptive, impulse control, and conduct disorders;

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- elaborate upon the symptoms of attention deficit/hyperactivity disorder;
- explain depression and disorders related to depression;
- identify the symptoms of anxiety and related disorders; and
- explain intellectual disability

15.0 INTRODUCTION

Developmental psychopathology mainly focuses on the disorders related to childhood within the context of life-span development. It studies how disorders arise and how they eventually change over time. Childhood becomes an important phase because this is the critical period where developments occurs in various spheres such as cognitive, social, emotional, and other areas.

Until recently, that is, the twentieth century, there was no major progress in assessing, understanding, and treating maladaptive patterns specific to childhood. An important point to note here would be that initially children were considered as “miniature adults” so, their problems were also seen as “downward extension of adult-oriented diagnosis” (Butcher et al., 2017). Thus, researchers failed to identify and make sense of problems that were specific to the developmental stage- from childhood to adolescence. While assessing and diagnosing a child with a particular developmental disorder, it is important to view their behavior in the context of what is considered as normal childhood development (Silk et al., 2000) because certain behaviors are considered appropriate at one stage but might look disturbed at another. For instance, eating inedible objects might be okay at the age of 2 years but is viewed as abnormal at the age of 12 years.

Many developmental psychologists have expressed their concern that some workers in the field end up viewing an aspect of normal development as abnormality (Barlow & Durand, 2012). For instance, *echolalia* (repeating the speech of others) was once understood as a sign of autism. However, if one studies the development of speech pattern in young children, they would see how children without disorders also repeat what someone else says and it is a ‘step’ in language development. Therefore, in children with autism, echolalia is just a sign of delay in language development and not a symptom of the disorder (Tager-Flusberg et al., 2009).

Some childhood disorders are unique to children, such as separation anxiety disorder; there are others which typically begin in adolescence such as eating disorders. Then there are some which begin in childhood but may continue in adolescence (such as attention-deficit/hyperactivity disorder). Still others, such as depression, is seen in children and is also very common in adults. In this Unit, we will present some of these disorders that are specific to childhood and adolescence or may begin in childhood and continue even later in life.

Box 15.1 Psychological vulnerabilities of young children

While evaluating the presence or severity of mental health problems in children, we need to take in account certain aspects, which are as follows:

- Their understanding of themselves and their surroundings is quite basic and even unrealistic at times. They have not yet developed a stable sense of identity and do not know what resources they have to deal with problems they may encounter.
- They often face more difficulty than adults in coping with stressful situations. They are at a higher risk for post traumatic disorders after a disaster and if the family environment is also not very conducive, it further makes them vulnerable (Menaghan, 2010).
- Children are dependent upon people around them, which can be an advantage and also serve as a disadvantage. It is an advantage because this ensures that adults around them can “protect” them from any kind of potential harm but it is a disadvantage because it also makes the child vulnerable to experience disappointment, inattention, and rejection if the adults ignore the child (Lengua, 2006).
- Although due to their lack of experience, children may turn manageable problems into something indomitable, but they recover rapidly from their hurt in comparison to adults.

15.1 ATTENTION DEFICIT/HYPERACTIVITY DISORDER

Attention Deficit/ Hyperactivity Disorder (ADHD) is a highly prevalent disorder among children and adolescents which impairs their daily functioning and might be disruptive for others around them. Children with ADHD may display difficulties in maintaining sustained attention, may show excessive and exaggerated motor activity, impulsivity in their behavior, according to their developmental level, thus, leading to social, occupational/academic impairments and problems in other areas. It has been categorized under three subtypes which are as follows:

- Combined presentation (including both inattention or attention deficit and hyperactivity),
- Predominantly inattentive presentation (called as Attention Deficit Disorder or ADD), and
- Predominantly hyperactive or impulsive presentation.

It is important to note here that the most common presentation of these three is the combined presentation.

Box 15.2 Case Study: Attention Deficit/Hyperactivity Disorder

Rohit is a 9-year-old boy referred to a child psychologist by his teachers and school counselor. The teachers have several complaints against Rohit, that he is extremely restless, hardly ever sits on his seat and keeps roaming here and there in the class. He hardly ever pays attention to the lessons in class and rarely brings his homework. His classwork remains messy and incomplete. He also keeps disturbing other children by constantly getting up or speaking out of turn.

On his visit to the child psychologist, it was revealed that his behavioral difficulties have been there ever since he was a toddler. He has always been restless and quite energetic. Even at home he has always faced difficulties in understanding instructions and was scolded for not paying attention. He often forgets noting down his homework or bringing back his tiffin box from school. His mother shared that whenever she would make him do his homework, he would not listen, as if his mind has been somewhere else.

Inattention or attention deficit includes problems related to arousal, alertness, sustained attention, selective focus, vigilance, and distractibility. These issues can manifest themselves in various situations such as school, home, play areas making adequate functioning difficult for the child. Due to problems regarding arousal and alertness, children may fail to give attention to details, daydream, make careless mistakes, or lose track of time. Selective attention refers to the process of focusing on a specific object in the environment for a given period of time. It allows an individual to focus on certain matters (considered to be important) and overlook or disregard unimportant details. Thus, a child that lacks in selective attention may fail to understand or follow through the instructions given in class or during their playtime (Wender, 2000). To someone else, they may appear as if they are “not listening” or that their “mind is somewhere else” or “is not interested in task at hand”.

Deficits in selective attention might be visible most in activities that are repetitive in nature but may also be seen in free play situations. It may lead the child to shift from one task to another quickly without finishing the one at hand without any obvious distraction being present. They may “tune out” during longer conversations or lengthy readings or tasks that require focused attention or alertness. They often have difficulties in organizing tasks and activities, or keeping them in an order, managing them sequentially. Thus, they often come across as messy (scattered notebooks, pens), with poor time management skills, failing to meet deadlines or completing homework. They often get scolded by parents and teachers for losing things, such as pencils, books, tiffin box, paperwork, keys, wallets etc. Due to their distractibility, they may attend to irrelevant information in the background such as noise, background conversations or some other object kept in the room. These attentional problems may also make them forgetful, for example, they may forget to bring required books, or tiffin box to school. Due to inattention, they may lose track of conversations impairing their social functioning.

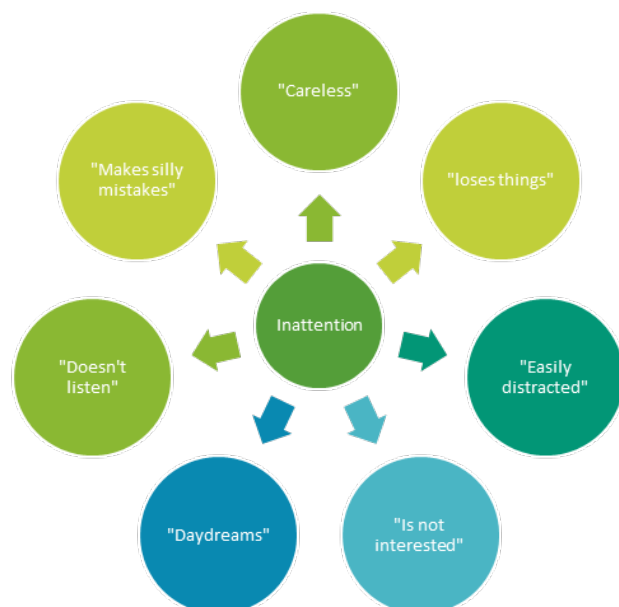


Figure 15.1 Description of children with significant attention deficit issues

Another major aspect of the disorder to be discussed is hyperactivity or impulsivity. Hyperactivity refers to excessive activity exhibited by an individual. It can be manifested in two forms: *motor hyperactivity* (for instance, restlessness, being fidgety, squirming, and unnecessary body movements) and *vocal hyperactivity* (excessive talking). In preschoolers, hyperactivity is usually noticed when the child engages in jumping excessively, climbs on furniture, running around the house, does not sit quietly while listening to a story (Nigg et al., 2005). In school going children, similar behaviour might be noticed, but may differ in frequency and intensity. Apart from this, they may have difficulties in sitting at one place or the designated place in class, may get up frequently, and may remain at the edge of the seat (about to get up). It's not just limited to academic activities or school they may have difficulties in sitting at one place even while watching TV or through meals. They are usually found shaking their legs, squirming or fidgeting with objects around them and are often called as children who are “driven by motor” or “are on the go”. The characteristic of excessive talking has been found most in girls with ADHD than boys. They might be seen interrupting others when talking and not taking cues regarding “turn-taking” in communication. In older children, hyperactivity may be exhibited in terms of excessive speech, restlessness, increased aggression, and conflicts with others. Children with ADHD often have issues in sleeping at night and may also wake up early. Thus, they can remain hyperactive throughout the day and even at night.

Impulsivity is another most common complaint made against children with ADHD. It is displayed in the impatience evident in the child- difficulty in waiting for their turn, may blurt out answers in class, interrupting and intruding others in class or during play. Due to this, they may also get involved in accidents, knocking the objects, bang into people and things, or engaging in potentially harmful activities such as riding bicycle in traffic.



Figure 15.2 Description of children with hyperactivity

There are certain secondary problems associated with ADHD, which are not the symptoms of ADHD per se. Due to their behavioural problems, they are often lower in intelligence- about 7 to 15 IQ points below average (Barkley, 1997) and may also be at a risk for learning disability and having a lower academic intelligence than their peers and counterparts (Biederman et al., 2004). Due to their excessive talking, missing out on social cues, they are usually rejected by their peers. They are not unfriendly, but more than often their peers are not able to “keep up” with their hyperactivity and thus get tired of them. Rejection or neglect from peers, negative criticism may impact their self- concept and self- esteem which can either make them aggressive or prone to depression.

15.1.1 Prevalence

In India, the prevalence of ADHD among primary school children was found to be 11.32 % and it was seen higher among males (six to nine times more prevalent) in comparison to females. The prevalence was higher among lower socio-economic group (16.33%) than the middle socio-economic group (6.84%). The prevalence was found to be highest in the age group 9 and 10 years (Venkata & Panicker, 2013). ADHD has also been found to be comorbid with disorders such as oppositional defiant disorder (Staller, 2006).

15.1.2 Causes and Risk factors of ADHD

The following are the causes and risk factors of ADHD:

- **Genetic influence:** parents and siblings with ADHD or any other mental health disorder may put the child at risk. Certain genes might also be implicated in it.
- **Brain abnormalities:** various neuropsychological studies have shown structural and functional differences in brains of people with ADHD- impairment with frontal lobe, basal ganglia, and cerebellum. This may

impact their higher cognitive processes, working memory, attention, and lead to deficits in inhibition of responses.

- **Exposure to environmental toxins:** toxins such as lead, pesticides etc. can lead to ADHD in children. This exposure at an early age could be the reason or consumption of such toxins by mother during pregnancy may also make the child vulnerable.
- Maternal use of drugs, alcohol or smoking **during pregnancy** may put the child at risk.
- **Premature birth** has also been seen as a reason in certain cases.
- **Social factors:** parenting style, peer relations and schooling may also moderate the type and degree of impairment in children with ADHD.
- **Role models:** aggressive and hyperactive portrayal of characters in TV shows, cartoons have also been found to be a reason for increase in difficult behavior in children.

Box 15.3 Some ways to help children with ADHD

- **Getting started and staying on tasks:** important to read directions with them to start. Create a checklist and divide assignment in parts to accomplish the goal. Always set short goals with them.
- **Combat attention busters:** try to minimize distractions, add novelty to the task to avoid boredom and keep giving movement breaks.
- **Recognition, acknowledgment and praise:** appreciate good behavior of the child as praise motivated the children to repeat good behavior.
- **Establish rewards:** a reward system can be an effective way to help children with ADHD to stay on track. These positive reinforcements could be time for choice activities, earning some marbles in a jar that can be exchanged later for a reward.
- **Environmental accommodation:** their seating arrangement should be preferential to them, for instance, standing work stations are preferred by many, adding structure and organization to their desk- clutter or presence of more than one task may distract them, visual support and prompts are important.
- **Give effective instructions:** gain the child's complete attention before giving the instruction- let them know clearly that you are talking to them and then give one instruction at a time, for instance, "please clean your room". In order to ensure if the child has fully understood, ask him/her to repeat it.
- **Use consistent consequences or disciplining techniques:** do not praise the child for something today and punish him/her for the same thing tomorrow. Taking away privileges etc. could be some of the disciplining techniques that are used.
- **Help them in calming:** take a break in a low stimulation area, teach self-regulation techniques like counting backwards, stretching, deep breathing etc.

Check Your Progress 1

1. What is developmental psychopathology?

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2. Classify the sub-types of ADHD.

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3. Define impulsivity.

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4. Mention some ways that can be used to help children with ADHD.

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15.2 DISRUPTIVE, IMPULSE-CONTROL AND CONDUCT DISORDER

Oppositional Defiant Disorder (ODD) and Conduct disorder are categorized under Disruptive, Impulse-control and Conduct disorders as both focus upon aggressive or anti-social behaviour. Both of these disorders involve a child's relationship with societal norms, rules regarding conduct and involve behaviour that may or may not be considered against the law (juvenile delinquency). ODD is usually apparent by the age of 8, and conduct disorder is recognized by the age of 9. Full blown conduct disorder usually develops by middle childhood through adolescence. According to various researches these disorders are closely linked with each other (Thomas, 2010), but distinction is made on the basis of the nature of seriousness of violations-relatively less serious in ODD in comparison to conduct disorder. ODD has also been considered as a milder precursor of conduct disorder.

15.2.1 Oppositional Defiant Disorder

An important feature of ODD is persistent negative, defiant, disobedient and hostile attitude and behaviour towards authority figures. The symptoms of a child with ODD can be categorized under three groups- angry/irritable mood, argumentative/defiant behavior, and vindictiveness. Angry/irritable mood would include losing temper, feeling touchy or easily annoyed, getting angry and resentful toward others. Argumentative/Defiant behavior may involve arguing with authority figures or adults, throwing temper tantrums, actively defying or refusing to comply with requests from authority, or questioning and non-compliance with rules. They may deliberately annoy others, blame others for their own mistakes or misbehavior. Finally, vindictiveness may involve being spiteful and revengeful towards others. Different levels of

misbehaviour can be evident in oppositional and defiant children, for instance, there might be a young child who would throw temper tantrums often, or there could be an adolescent who would exhibit ODD kind of behavior for years such as verbal and physical abuse, punching holes in walls etc. and feels justified doing so. Interestingly, they might see themselves as victims and thus justify their ‘acting out’ behavior. Their justification may also come from certain social role models who act out- actors, rock stars, politicians etc.

The ODD diagnosis calls for presence of at least four of these symptoms for at least six months with at least one person who is not their sibling and is causing impairment in at least one setting of life. It is important to note that not all cases of ODD further develop into conduct disorder, however majority of the cases of conduct disorder are followed by a diagnosis of ODD (Lahey et al. 2000). Research (Nock et al., 2007) indicates higher prevalence of ODD in boys, almost 11 percent, in comparison to girls, almost 9 percent. It has been discovered that girls may show symptoms of ODD that are different from boys, for instance, they may display their aggression more through words, and are more apt to lie and be uncooperative (Connor, 2002).

Sometimes the parents have trouble identifying or accepting the symptoms of ODD as a problem or a disorder in their child because they usually feel that their child “will grow out of it” with time or as they mature. It is often difficult to differentiate between ODD and the usual independence-seeking behaviour which is considered as a characteristic of early teen years. However, as per the evidence early intervention and treatment is useful in overcoming ODD and preventing its progression into another serious mental health concern (American Academy of Child and Adolescent Psychiatry, 2009).

Box 15.4 Can ODD be prevented?

Research shows that intervention at an early stage, certain school-based programs, and individual therapy are really helpful in preventing ODD at an early stage itself (Burke, Loeber, & Birmaher, 2002). These early programs have also been found to be influential in preventing delinquency later in life. A program providing education, health and other services related to skill development, especially to low-income group children and their families could be very successful. Young children may learn social skills, communication skills, anger and conflict management (Connor, 2002). In the case of adolescents, psychotherapy (talk therapy), academic help, social-skills training, and vocational skills training has been found to be impactful in reducing disruptive behaviour. In social skills and training, students can also be taught to stop bullying, improving peer relationships and thus reducing antisocial behavior. A home visit to children at a high risk (low socio-economic strata, parents with mental health concerns, family discord etc.) also has been shown to help prevent ODD (Eckendroje, et al., 2000). Parents should also be taught to develop and nurture secure relationships with their child and creating healthy boundaries with them.

Causes and risk factors involved in ODD

Understanding of factors associated with the development of ODD has increased enormously. There are various causal factors that could be involved in it and some of them are being discussed here.

Biological factors

- A parent with a history of any mental health disorder- ADHD, mood disorder, etc. makes the child more vulnerable to develop ODD.
- Use of substance by mother during pregnancy, such as alcohol, nicotine
- A parent with substance abuse can put the child at potential risk for the development of ODD.
- Exposure to toxins as an infant or early in life
- Lack of nutrition
- Impaired fear conditioning, reduced cortisol reaction to stress, and amygdala hyporeactivity to negative stimuli could be responsible for development of ODD.
- Altered serotonin and nonadrenaline neurotransmission may suggest low punishment sensitivity and compromise the ability in children to make associations between inappropriate behaviors and impending punishments (Matthys, Vanderschuren, & Schutter, 2013).

Psychological factors

- Indifferent, neglectful, or absent parent.
- Poor relationship with parents and/or siblings
- Difficulty in forming or maintaining relationships and understanding social cues

Social factors

- Poverty or socioeconomic disadvantage
- Neglect and Abuse
- Lack of adult supervision
- Uninvolved parents
- Inconsistent discipline pattern
- Unstable family environment and family discord (divorce, moving away etc.)

15.2.2 Conduct Disorder

As mentioned above, both conduct disorder and ODD involve persistent disregard for rules, rights of others and authority. But, one of the major differences between the two (apart from the age of onset) is that ODD lacks the severe physical aggressiveness that children with conduct disorder may exhibit. Children with conduct disorder might show deficit in social behaviour (Happé & Frith, 1996). The symptoms may include aggression

towards other people, animals (Becker et al., 2004), destruction of property, theft, lying, deceit, and grave violation of societal norms. They may exhibit covert or overt aggression in the form of bullying, initiating fights in schools or in other settings, use of weapons that can harm or seriously injure another person, firesetting (Stickle & Blechman, 2002). They might also be involved in robbery, vandalism, breaking into someone's house or car and even homicidal acts. Children with conduct disorder are also likely to be sexually uninhibited and might be found inflicting sexual aggression on others, especially younger children. They might also be at a high risk for unwed pregnancy and substance use, abuse and dependence (Yang et al., 2007). Two different courses of the disorder have been identified- first, life-course persistent pattern that starts early and continues even into adulthood; another one is the adolescence limited course where the antisocial behaviour begins in adolescence, had a typical childhood and would later have a typical adulthood (with no antisocial issues and problems). Research has also provided evidence to the fact that early onset of conduct disorder is highly correlated with later development (in adulthood) of antisocial personality disorder (Goldstein et al., 2006). Conduct disorder is three to four times more common in boys than girls and its life time prevalence could range between 2 to 10 percent in the general population (Mohan, Yilani, & Ray, 2020).

Box 15.5 Causes and risk factors for Conduct disorder

- **Genetic influences:** although researchers are not sure of the exact genetic component contributing to conduct disorder but inherited genes have been found to be responsible for development of conduct related issues. Mental health concerns in parents and siblings could also be a contributory factor.
- **Brain abnormalities:** certain brain abnormalities have been noticed in the children with conduct disorder such as damage or impairment to pre-frontal cortex (affecting judgment) and limbic system (impacting emotional responses).
- **Cognitive deficits:** low IQ, poor verbal skills, and impairment in executive functioning (associated with frontal lobe) may make the child more vulnerable to conduct disorder.
- **Traumatic event:** a traumatic event or abuse- physical, verbal or sexual might also be the contributory factors making children vulnerable.
- **Social issues:** lower or disadvantaged socio-economic status, poverty, disorganized and dysfunctional neighborhood, poor school conditions, family discord, harsh, neglectful or indifferent parenting are also strongly linked with conduct disorder.

Box 15.6 Case Study: Conduct Disorder

Rishabh is a 14-year-old male who is the eldest child of his parents, with two younger siblings. He recently dropped out of school and further refused to go back stating that teachers do not teach well. His teachers reported that he has been consuming tobacco since past eight months. When parents enquired,

they got to know that he has been stealing money from his mother's purse and also from neighbour's house to buy tobacco. When parents questioned him, he blamed neighbours stating that they were framing him unnecessarily. On being caught red-handed, parents decided to take professional help.

His parents and siblings reported that Rishabh has always had a temper and would often beat up his younger siblings. In school also, he would get into fights more than often. He would perform poorly in school and instead would focus on disturbing his peers, bullying them and constantly getting in conflict with them. Recently, he was also found misbehaving with other girls in class and passing sleazy and uncomfortable remarks.

Check Your Progress 2

1. What could be the possible causes of Oppositional Defiant Disorder?

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2. How is Conduct Disorder different from Oppositional Defiant Disorder?

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15.3 ANXIETY AND DEPRESSION IN CHILDREN

Anxiety disorders is a broad category but all the disorders share certain common elements. All of them involve three basic areas of symptoms: physiological response (sweating, arousal, nausea etc.), behavioural symptoms (avoiding, escaping etc.), and subjective feelings (dread, discomfort etc.). Some of the common symptoms of anxiety disorders could be presence of unrealistic or negative thoughts, panic attacks, misinterpretation of events, physiological arousal, oversensitivity to certain physical cues, fear of a specific situation, object or event, and excessive worry in general. Some of the anxiety disorders that have been identified are: generalized anxiety disorder, specific phobia, social phobia, panic disorder, and agoraphobia. Some of these are particularly important when working with children and would be discussed in this section. Earlier, obsessive compulsive disorder was also categorized under the anxiety disorders but it is now the flagship diagnosis of a different category, namely, obsessive compulsive and the related disorders.

15.3.1 Social Anxiety Disorder

Children are often seen behaving shy in different situations, but if they experience extreme distress over everyday situations like reading in class, or playing with other kids, this can be a cause of concern. *Social anxiety disorder (or social phobia)* is described as “disabling fears of one or more specific social situation (such as public speaking, urinating in a bathroom, or

eating or writing in public) where the person fears of being exposed to the scrutiny and potential negative evaluation of others or that he/she may act in an embarrassing or humiliating manner” (American Psychiatric Association, 2013). Due to it, the individual may either avoid the situation or face it with high levels of distress. Mainly two subtypes of social anxiety disorder have been identified, in situations that are performance oriented, such as, public speaking, and the situations that are non-performance ones but demand public presence or social interaction, such as, eating in public, meeting someone new. It is important to note that in children, the anxiety should occur in a setting that may involve peers. Anxiety during interactions with adults should not be the only criteria for diagnosis. Their anxiety or fear is usually expressed by crying, tantrums, freezing, shrinking, clinging, or inability to speak in social situations. Excessive sweating or blushing is also a common overt manifestation. Often, children with social anxiety do not even want to go to school. Box 15.7 describes some of the common social anxiety triggers.

Box 15.7 Common social anxiety triggers

- Meeting new people
- Public speaking/Performance on stage
- Being the center of attention
- Being watched while doing something
- Making small talk
- Being criticized by others
- Talking to authority figures
- Using public washrooms
- Being called in a class
- Eating or drinking in public
- Attending social gatherings

Causes of Social Anxiety Disorder

The main causes of social anxiety disorder are as follows:

Inherited traits: like any other anxiety disorder, social anxiety disorder also runs in families. Thus, if the biological parents and/or siblings have a similar condition, the child becomes more vulnerable.

Brain structure: amygdala may play a role in controlling fear response of an individual. Thus, overactive amygdala may heighten the fear response, causing increased anxiety in social situations.

A negative experience: developing this condition after an unpleasant, embarrassing social situation, for example, being overly criticized or reprimanded in class.

Learning about negative experience of others: parents may model such social anxious behaviour in front of children. Fearful and socially anxious

parents may unknowingly transfer verbal or non-verbal information to their child about the dangers of a social situation. If the child sees or hears a caregiver being embarrassed in or by a social situation, even that makes him/her vulnerable.

Less exposure: if the child is not exposed to enough social situations and is not allowed to develop appropriate social skills, it can be a contributory factor.

Parenting: if one or both the parents are rejecting, controlling, critical or overprotective, the child may not form secured attachment, thus putting them at greater risk as they are not able to calm down or soothe themselves in stressful and chaotic situations.

Societal/cultural factors: sometimes certain aspects prevalent in a society might be responsible for development of social anxiety in some. For instance, growing up in a culture with strong collectivistic orientation. *Taijinkyofusho* (a specific type of social anxiety, primarily in Japanese culture. It is an intense fear that one's body parts or functions may displease, are offensive or embarrass others) involves a fear of making other people uncomfortable and the concern regarding how one would fit in a larger group is emphasized.

15.3.2 Separation Anxiety Disorder

Terms such as 'school refusal' or 'school phobia' are often considered as common features of *separation anxiety disorder*. Children are diagnosed with this disorder if they show marked distress and are afraid of being away from certain people, especially a parent or primary caregiver. They may exhibit unusual fear, anxiety, and panic symptoms in response to going to school. They may cry, freeze, present somatic complaints (bodily complaints such as stomachache, headache, fever etc.), throw tantrums, and withdraw socially. They may also show fear of getting harm, getting lost or kidnapped, assault or permanently getting separated from the caregiver. Similarly, school refusal is the motivated refusal to attend school or difficulty faced by the child to remain in school and attend classes for the entire day. It may involve innumerable internalizing and externalizing behaviors but separation anxiety disorder has been found to be one of the major causes for school refusal or school fear (Kearney, Chapman, & Cook, 2005; Lingenfelter & Hartung, 2015). It can be an overwhelming feeling for the families as initially they may feel that their child is 'acting difficult', might drop out, but such behaviour requires professional attention as it often leads to conflict, academic issues, friction with school officials and most importantly lost time for work, especially for the child (Kearney & Albano, 2000).

Box 15.8 A Case example for Separation Anxiety Disorder

Rahul, a 5-year-old, Indian school boy was presented as stubborn, always crying and throwing tantrums at the school gate for not going inside and leaving his mother. The child joined this school 4 months back and was excited to go to a new school, make friends and enjoy. After 2 months, summer vacations were announced which he had enjoyed at his maternal grandparents' place. But, after returning he became violent and refused to go

to school. He became clingy and wanted to be with his mother at all times, even when at home. When he was forced to leave his mother (2-3 times by his father), he would cry violently to the extent that he would stop breathing or choke on his breath. While crying he would often say that his mother would leave him and he would die. The very next minute, he would apologize to the teacher and others present for his misbehavior. Ultimately, he was sent back home and after due to this repetitive behavior was sent to a psychologist.

Source: Vashishtha, K. (2015). Treatment of Separation Anxiety Disorder- A Clinical Case Study. Case Studies Journal, 6(4), 14-20.

15.3.3 Selective Mutism

It is the “consistent failure to speak in specific social situations in which there is an expectation for speaking despite speaking in other situations” (American Psychiatric Association, 2013). It may co-exist with social anxiety disorder. Their behaviour is perceived as either shyness or rudeness by others, but despite that they are unable to speak in certain situations such as school. For instance, a child with selective mutism may remain silent for years in school but may speak freely at home or any other situation. This disturbance may interfere with educational or occupational achievement, social functioning, and language development (Gazelle, Workman, & Allan, 2010). It is important to note here that the failure to speak is not due to lack or delay in language related developmental milestones or knowledge of speech or spoken language. A hierarchical variation can also be seen in children diagnosed with selective mutism. For instance, some may participate in social activities, thus appear social but do not speak; then there are others who speak to peers but not adults. In some cases, they may speak to adults only when asked a question which requires short answers. In a more severe form, the disorder may progress until the person no longer speaks to anyone in any situation, this may also include family members. This state is called as “progressive mutism”.

15.3.4 Post-Traumatic Stress Disorder

It has been established that an extremely stressful event that could have been life threatening and is not a common everyday experience could lead to various psychological symptoms not only in adults but also in children. These traumatic stressors may include living in a concentration camp, combat, terrorist attack, rape, or natural disasters such as earthquake, tsunami, school violence, neglect, serious accidents or sudden loss of a loved one.

Source: <http://verywellmind.com/dsm-5-ptsd-criteria-for-children-2797288>

Stress symptoms are very common following a traumatic event, but they may decrease over time. Thus, it is important to remember that for a diagnosis of post-traumatic stress disorder (PTSD), the symptoms must last at least for a month. PTSD is “a traumatic event thought to cause a pathological memory” that is also the defining clinical symptom of the disorder (McNally, 2013). These memories can be brief bits of the experience and may also be related to the events that happened before the traumatic event or moment (Hackman et

al., 2004). For children below the age of 6 years, their involvement in either of the following ways can lead to trauma: the child directly experienced the event, the child witnessed the event in real (not seen on television, or some other form of media), and the child learnt about the traumatic event that happened to the caregiver. Some of the following symptoms can be seen in the children, adolescents and adults diagnosed with PTSD:

- i) Intrusion symptoms: re-experiencing the traumatic event through nightmares, intrusive images, flashbacks or any physiological reactivity may act as a reminder of the trauma;
- ii) Avoidance symptoms: avoidance of any trauma related stimuli such as feelings, or thoughts. This can lead to change in routine for some individuals;
- iii) Negative cognition and mood: they may be unable to recall the key aspects of the trauma, or may have overly negative thoughts about oneself and/or others (for example, “I am bad”, “The world is very dangerous”, “No one can be trusted”, or “My whole nervous system is ruined”), distorted feelings like guilt, shame, and blame might be involved. Interest in otherwise pleasurable activities may go down and they may have difficulties in experiencing positive affect. This may eventually develop feelings of alienation and isolation in him/her from others; and
- iv) Arousal and reactivity: hypervigilance, reckless behavior, aggression, irritability, startled reactions are also very commonly seen.

Table 15.1 Signs and symptoms of PTSD at different stages

Preschool	School going	Teenagers	College students
• Cry or scream a lot • Loss of appetite • Nightmares and night terrors • Extreme fear of being separated from parents/caregivers	• Poor concentration • Insomnia and nightmares • Extreme feelings of guilt and shame • Anxiety and fear in various situations • Decreasing academic performance	• Loss of appetite • Self-harm • Feeling depressed • Social isolation • Substance abuse • Engage in reckless sexual behavior • Impulsivity • Poor decision-making • Decreasing academic performance	• Inability to concentrate • Decreasing academic performance • Social withdrawal • Isolation • Dissociative tendencies • Hypervigilance • Sleep related problems • Edgy, restless • Negative cognition and affect • Avoiding pleasurable activities

As mentioned, children and adolescents have similar reactions to the trauma, but in children less than 6 years of age, some other symptoms might be visible. For instance, they may end up wetting their bed even after being

toilet trained. They may act out the scary, traumatic event during their play activities or may become too clingy to their parents/caregivers. Apart from showing symptoms similar to adults, older children may become disruptive or disrespectful and may even have thoughts of revenge.

It is important to note that every child who experiences trauma may not develop PTSD, but the parents, caregivers, teachers and other adults should be aware of the possible warning signs if the child has faced some kind of trauma in the past and is suspected to be struggling.

Causes and risk factors involved in PTSD

Various causal and risk factors are involved in PTSD. They are as follows:

- **Abuse:** any kind of abuse- physical, emotional or sexual can be traumatic for the child, along with this any behavior that is perceived as abuse (bullying by adults or peers of the child) by the child can be traumatic and lead to PTSD.
- **Neglect:** parental neglect or neglect from a primary caregiver may lead to attachment related issues in child and eventually can be a cause for PTSD. Instances such as being kept in a box as punishment etc. could also be a case in point.
- **Disasters:** various natural disasters such as an earthquake, tsunami etc. where the child or the adult around feels helpless can be a source of trauma. Sometimes the after effects of the disaster may lead to uncertainty, fear and anxiety.
- **Accidents:** car crashes, train or airplane accidents or any news related to it can be a trigger for the child. Accident such as house on fire, or short circuit at house can also cause trauma.
- **Violent acts:** witnessing a parent being abused, kidnapping, riots, shooting or beatings at school are violent acts that may shock the child instilling trauma in them.
- **Death of a loved one:** whenever any significant person of the child dies, his/her security may also die with that which can be traumatic for the child.
- **Significant changes in life:** changes such as adoption of the child, divorce between parents can also be contributing factors.

Various anxiety related disorders have been discussed in this section and it is important to point out here that poorly managed anxiety during childhood may increase the risk for substance use in adolescence and young adulthood (Benjamin et al., 2013). It may also lead to poor quality of life with many affected individuals showing poor mental health in comparisons to those who have other chronic medical condition, such as diabetes, hypertension, arthritis etc. (Comer et al., 2011).

Check Your Progress 3

- 1) Explain the symptoms of social anxiety disorder.

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- 2) What leads to post-traumatic stress disorder?

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- 3) What is selective mutism?

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15.3.5 Depression

Depression is not having a bad mood or an occasional feeling of being down or sad. When children and teenagers or even adults face with setbacks or disappointments in life, they feel sad and it eventually fades or lessens over a period of time as we cope with it. Parents should be concerned and contact professionals when sadness and other related symptoms (to be discussed further) lasts for weeks, months or longer than that, hampering the child's ability to function in their daily lives. Thus, depression exists on a continuum of severity from mild and transient state of low mood to severe symptoms impacting the quality of life of an individual (as depicted in Table 15.2). It is primarily characterized by the following symptoms: depressed moods, loss of interest in activities, sleep related problems (hypersomnia or insomnia, that is, too much or too little sleep respectively), weight loss or gain, psychomotor retardation (slow physical movement) or agitation, loss of energy or fatigue, difficulty in concentrating, thinking or making decisions, feeling of guilt, worthlessness, and recurrent thoughts of death. It has been studied that the preoccupation with death and related thoughts is more often seen in older children and adults and might not be manifested in the younger ones as their concept of death is vague and not well-built. Irritability and certain physical complaints such as headaches, stomachaches, etc. are two additional physical complaints that are often seen in children and teenagers with depression (Merrell, 2013). It is important to note here that all these symptoms might not be present in one individual to diagnose him/her with depression, presence of at least five of these symptoms (and at least one of the symptoms should be depressed mood or loss of interest in pleasurable activities) for a period of two weeks is necessary for the diagnosis. Also, if the child is young, it is more likely that loss of interest would be displayed more than the depressed mood.

Table 15.2 Continuum of sadness and depression

	Normal	Mild	Moderate	Depression - less severe	Depression -more severe
Emotions	Good mood	Feeling a bit irritable or low	Upset, sad, teary eyed	Intense sadness, crying spells, "heaviness"	Extreme sadness, crying spells, feeling hopeless
Cognitions	Thoughts about planning and organizing the day	Thoughts about difficulty of the day "something will go wrong"	Dwelling on negative thoughts, like rude behavior, making mistakes in a test	Pessimistic thoughts about future, self-harming thoughts, thoughts regarding personal deficiency	Strong self-harm intent, suicidal thoughts, may also give instructions to others in case of death
Behaviors	Getting up, following routine, going to school/work	Takes longer than usual to get up, low concentration	Crash to bed without dinner, less/no sleep, less concentration	Inability to get up from bed, skipping work, withdrawing contact	Social withdrawal, loss of appetite (weight), suicide

Table 15.3 Depression at different stages (adapted from Poquiz & Frazer, 2016).

Age	Behavior	Probable Precursors
Preschoolers (2-5 years)	• Irritability, anger, throwing tantrums • Sadness, excessive crying • Loss of interest in toys that were favorite/activities, decreased socialization • Lethargy • Headache, stomachache	• Family history of mental illness or depression • Family history of suicidal ideation and/or attempt • Stressors such as divorce (in parents), someone's death
Middle Childhood (6-12 years)	In addition to behaviors listed above, • Withdrawn from family and friends • Bullying others or being bullied • Sleep related problems • Loss of appetite, weight loss	• In addition to precursors listed above, • Inconsistent parenting • Low peer support • Social isolation • Being bullied • Academic pressure • Other mental health

	(eating related issues) • Separation anxiety (especially from the caregiver) • Lack of concentration • Refusal to go to school • Poor academic performance • Thoughts of worthlessness • Hurting oneself	issues, such as anxiety, specific learning disorder
Adolescence (13-18 years)	In addition to behaviors listed above, • Hopelessness, pessimism about future • Loss of interest in pleasurable activities • Low self-worth and self-esteem • Substance abuse • Self-harming tendencies	In addition to precursors listed above, • Parent child conflict • Onset of puberty

It is difficult for **preschoolers** (2-5 years) to verbalize their emotions, due to which early signs of depressions can be missed. Nevertheless, the persistent complaints about irritation, crying, tantrums and other physical complaints could be due to depression (refer to Table 15.2). It is also important to note here that preschool depression can eventually lead to various other mental health illnesses in childhood and adolescence.

The ability to talk and express themselves increases gradually and till **middle childhood** (6-12 years), some of the symptoms that children have are similar to that of adults with depression. The younger children may still exhibit behavior similar to that of the preschoolers.

Researches have shown that the risk for depression increases with puberty. As **adolescence** (13-18 years) is the time to be involved in various different activities, become independent, choose a career, form relationships, warning signs can involve thoughts of future and friendships. Sometimes, parents and peers ignore the warning signs of depression by categorizing it as a teenage issue or attention seeking behaviour but if the teen is indulging in substance abuse or has suicidal thoughts and/or tendencies, immediate help is required.

We have seen that children with depression may exhibit different behaviours at different ages and stages in their lives. It requires professional attention, if left untreated, it can lead to poor school performance, unhealthy relationships, and other mental health issues like delinquency, substance abuse and even suicide in some cases. So, the ideas such as, “it’s just a childhood tantrum”, “he will eventually come around”, “she needs a new toy”, “take them for vacations” need serious attention, because the child will

not “snap out” of depression suddenly. Some of the issues that could be seen in children with depression are as follows:

- i) *School and academic issues:* Loss of motivation, concentration and a sense of worthlessness along with feelings of hopelessness can impact learning of the child. For instance, the child with depression may not be able to concentrate on the lesson being taught in the class, he/she may lack the energy to note down the homework or finish it. They might be convinced in themselves that they would fail at everything and thus would stop taking initiative or attempting anything. They may also be getting negative and unwanted attention from others around them, especially, teachers, peers and parents increasing their feelings of worthlessness. This could eventually lead to social withdrawal. Familial conflict, parental divorce, or normal difficulties with regard to learning can also lower down the child’s school performance, but if this continues over a period of time or if the decline in academic performance exists without a clear explanation, it should be a cause for concern.
- ii) *Trouble with peers:* Healthy friendships are important as they promote positive behavior, emotional adjustment and also lay the foundation for healthy relationships in future. Children with depression are usually ignored or rejected by their friends as they may come across as boring or slow. If the child is aggressive, they are avoided due to their rough and rude behavior. This rejection can result in their isolation, feeding their thoughts such as, “no one likes me”, “I am worthless”. They are at higher risk of being bullied by others (Juvonen et al., 2003). It can further lead them to substance use and abuse. Thus, it is important for parents to be aware and keep a check on the social relationships of their children.
- iii) *Self-Harming and Suicide:* Suicidal thoughts are common in adolescents. Despite the fact that suicides are underreported in a country like India, it has been established that highest rates are among the ones below the age of 30 years, especially adolescents (Samuel & Sher, 2013). Thus, any and all expressions of suicidal ideation and behavior are to be taken seriously. Depression and substance abuse are two of the primary factors leading to suicidal behavior. Thus, parents need to be careful if their child is showing signs of depression, withdrawal and/or self-harm.

Box 15.9 Causes for depression

Genetic factors: a family history of depression or any mental disorder may increase the risk in the child.

Brain chemistry: neurotransmitter and hormonal imbalances may also play a role and increase the risk.

Abuse: past physical, sexual or mental abuse can increase an individual’s vulnerability to depression.

Death or loss: grief from loss of a loved one may increase the risk of depression. It is important to note that, natural or normal mourning period doesnot qualify for depression.

Major events in life: changes such as divorce of parents, moving to another place can contribute to depression.

Environmental factors: a stressful and chaotic home environment can cause depression, rejection and bullying at school can also be a reason.

15.3.6 Other disorders with depression as a feature

The above given presentation of symptoms is clinically called as major depression. However, there are various other mood or adjustment disorders that include depression as a major feature. In this section, we will briefly discuss them.

Dysthymia (or Persistent Depressive Disorder) shares many features with major depression but differs mainly in two aspects. First, individual with dysthymia exhibits fewer mild-to-moderate symptoms. Second, the depression lasts for a longer duration (at least 2 years for adults and 1 year for children and adolescents). Depressed mood (in dysthymia) may last for most of the day, but it is of mild-to-moderate intensity.

Bipolar I disorder includes episodes of full-blown mania (extreme elation, lasts for 7 days) and periods of major depression. *Bipolar II disorder* would include episode of hypomania (lesser in severity than mania, lasts 4 days) and major depression. Period of mania or hypomania characterizes feelings of energy, invincibility, flood of ideas, flight of ideas, grandiosity, decreased need for sleep etc. and all of this may lead to poor decision making and risk taking. Finally, *Cyclothymic disorder* (also understood as a less serious version of bipolar disorder) includes depressed mood similar to the one in dysthymia and hypomania. In this, the depressed mood may characterize low energy, social withdrawal, feelings of inadequacy, and brooding attitude. Parents of children with cyclothymia may feel that their child is on an “emotional roller coaster” that rarely ends (Merrell, 2013).

Adjustment disorder with depressed mood is another presentation of symptoms of depression that may occur due to issues faced by the individual in adjusting to a major life event, such as, death of a loved one, divorce, change in circumstance etc. (lasts for 6 months or longer).

Check Your Progress 4

- 1) Mention the various symptoms of depression.

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- 2) What is dysthymia?

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3) What leads to depression?

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4) Can you differentiate between the symptoms of depression in a preschooler from that of an adolescent?

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15.4 INTELLECTUAL DISABILITY

Intellectual disability or intellectual developmental disorder was previously referred to as mental retardation or mental subnormality. The scientific study of 'mental subnormality (as it was called then) began with Itard in 1800s. Over the years, two trends have emerged in this area:

- Towards a more complete and accurate diagnosis; this is characterized by development of intelligence tests, techniques of describing social competence, genetic studies, investigating various functions etc.
- Towards adequate care in both institution and community, and development of useful and efficient educational techniques.

Criteria for intellectual disability has been arbitrary and is based on judgment about the abilities required by an individual to get along in the world. Intellectual disability is characterized by deficits in general mental abilities, such as reasoning, problem solving, planning, abstract-thinking, judgment, academic learning, and learning from experience (APA, 2013, p.31) and has been defined in terms of both intelligence and level of performance. For this diagnosis to apply, it is important that these problems begin before the age of 18. If the onset is after 17 years of age, it is considered as dementia and not intellectual disability. In order to diagnose someone with intellectual disability, three important criteria defined are as follows:

- Has a cut-off score below 70-75 on intelligence test, indicating significantly below average intellectual functioning.
- Deficits or impairments in adaptive functioning, that is, significant difficulty in at least two of the areas: self-care, communication, social, and interpersonal skills, self-direction, academics, work, leisure, safety, health etc.
- Age of onset is another important criterion, the characteristic below-average intellectual and adaptive abilities must be evident before the age of 18 in an individual.

Some other important aspects should be considered carefully before making a diagnosis of intellectual disability. Limitations in the present functioning must be considered in the context of community environment in accordance

with individual's age, peers and culture. An individual not faring well in a society may fare well in a simple environment, thus making intellectual disability situational and cultural. Valid assessment tools should consider cultural and linguistic diversity along with differences in communication, sensory, motor, and behavioural factors. An important reason behind describing limitations in an individual is to develop a profile of the kind of support that is needed by the individual and with appropriate support over a sustained period of time, a marked improvement can be seen in the life functioning of the individual diagnosed with intellectual disability. Initial diagnosis of intellectual disability usually occurs around the age of 5 or 6 as this is the time when most children begin schooling and it usually falls after the age of 15.

Different classifications have figured different ways to categorize intellectual disability, but most are either based on the individuals' ability or on the cause of intellectual disability (Toth & King, 2010). For years, professionals have sub-divided individuals by their Intelligence Quotient (IQ). Intellectual functioning is measured using a combination of intelligence (IQ tests) and achievement-based assessments. Following is the classification used:

- Mild: identified by an IQ score between 50-55 and 70,
- Moderate: falls between the range of 35-40 to 50-55,
- Severe: ranging from 20-25 to 35-40, and
- Profound: IQ scores below 20-25

15.4.1 Mild Intellectual Disability

It consists of the largest number of those individuals who are diagnosed with intellectual disability, with IQ scores between 50-55 to 70 approximately. The mental age of an adult with a mild intellectual disability would be comparable to those of children who are 8-11-year-old. It would be important to note here that although their information processing capacity might be less than a 10-year-old but their life experience would be much more than that which may also increase their IQ score. In the context of education, they are considered "educable", that is, they can read and write at a basic level and may even acquire minimum vocational skills.

Their development is slower than average people during their infancy and childhood, even speech could be slow initially. They continue engaging in solitary play even when others of their age start playing in groups and understand the concept of sharing and play. They usually come across as 2-3 grades lower than their chronological age. There are no apparent physical, facial, and behavioural deformities visible in their case as they are closer to the expected societal norms. Their abstract thinking is limited and they lack normal adolescents' imagination, judgment and inventiveness. Their sexual development and fertility are well within the expected normal limits and they usually lead satisfactory married lives. They require intermittent support; early diagnosis, assistance, and special educational program can help them in adjusting socially and master simple academic and occupational skills.

15.4.2 Moderate Intellectual Disability

With an IQ between 30-35 to 50-55, individuals with moderate intellectual disability fall in the category of trainable (especially in the education context). They are able to master skills such as routine work, laundry, cooking, sweeping and janitorial work if specialized instructions are given to them. With support and training they can learn to care for themselves and guard themselves against common physical dangers. They may not achieve fair command of spoken language as their rate of learning is slow and level of conceptualizing extremely limited. They attain intellectual level similar to those of 4-7-year-old only. They are not capable of doing work that may require initiative, originality, abstract thinking, or memory. Due to their poor motor coordination, they appear clumsy at times. Some of them are hostile and aggressive, but most of them are affable and harmless. They need sheltered working environment and require limited support from others. Figure 15.3 describes the level of intensity or support required by people with intellectual disability.

15.4.3 Severe Intellectual Disability

People with IQ between 20-25 to 35-40 are categorized as one with severe intellectual disability. Motor or speech development is severely retarded and various sensory defects are also common in their case. They usually develop very limited level of personal hygiene and self-help skills and require extensive support. They are unlikely to progress beyond pre-academic skills but with supervision and specialized instructions can master certain “survival” sight words. There is severe delay in all areas of development-physical, (presence of physical deformities), motor, social, cognitive, language, etc. Many of them do not mature sexually and also remain infertile.

15.4.4 Profound Intellectual Disability

They require pervasive support and custodial care throughout their life as they are considered as grossly ‘retarded’ from birth. With an IQ below 20-25, they are found to be severely deficient in adaptive behavior and are not capable of mastering even simpler tasks. Considerable delays can be seen in dentition, walking, ability to feed, dress, bowel and bladder control. Many are not even able to master these routine tasks. Central nervous system pathology, seizures, mutism, deafness, and various other physical anomalies are common amongst them. Due their poor health, severe infections, and low resistance to diseases many have a short life expectancy.

It would be important to note here that severe and profound intellectual disability is usually diagnosed in infancy because of apparent malformations, gross developmental delays and various other abnormalities, along with marked impairment in intellectual functioning.

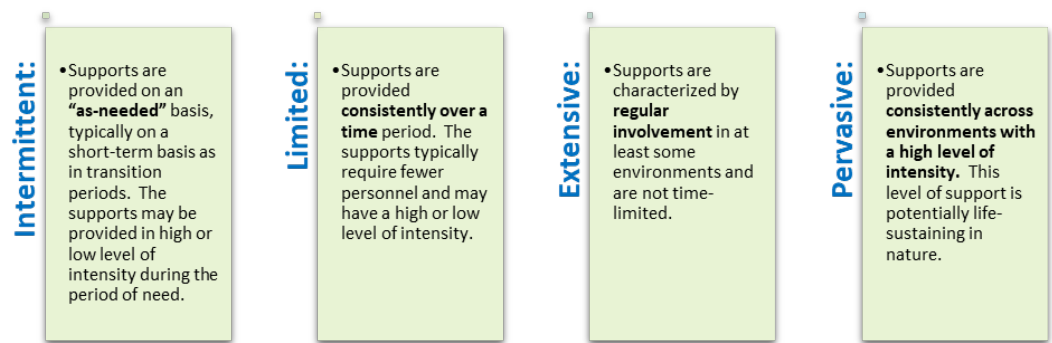


Figure 15.3 Levels of intensity or support required by individuals with intellectual disability

15.4.5 Causes of Intellectual Disability

Certain cases of intellectual disability occur due to or in association with known organic brain pathology (Kaski, 2000). In this section, we will discuss five biological conditions that may lead to intellectual disability. They are as follows:

- **Genetic-chromosomal factors:** usually mild disability runs in families but sometimes certain infrequent yet severe types such as down syndrome or fragile X (which are genetic or heritable) could be responsible for intellectual disability.
- **Infections and toxic agents:** infections caused by genital herpes or viral encephalitis could result in intellectual disability. Syphilis infection or presence of toxic agents such as carbon monoxide and lead in pregnant women may lead to brain damage or abnormality in the child (Kaski, 2000). Even alcohol if consumed by pregnant women in excess quantities may lead to congenital malformations.
- **Trauma or physical injury:** accidents do happen during delivery and after birth. For instance, difficulties in labor due to misplacement of the fetus, hypoxia (less oxygen supply to fetus' brain) due to stressful birth conditions may further cause damage to infants' brain.
- **Ionizing radiation:** ionizing radiation (from nuclear weapon testing, poisonous gas leakages) may have an impact on sex cells and other bodily cells of the body hampering growth and development of the fetus. It may directly act on the fertilized ovum or may impact via genetic mutations in the sex cells of either one or both parents.
- **Malnutrition and other factors:** dietary deficiencies, for instance lack of protein, or other essential nutrients could do irreversible physical or mental damage to the fetus or infant after birth.

Table 15.4 Disorders associated with intellectual disability*Source:* Adapted from Butcher et al. (2017).

Clinical type	Symptom	Causes
Down Syndrome	Delay in physical and intellectual development, almond shaped eyes, face, nose and back of the head is flat, may have heart and intestinal deficits, appear as if accelerated aging process	Trisomy of chromosome 2, translocation, mosaicism
Phenylketonuria	Lack of motor coordination, neurological deficits due to brain damage, pale eye, skin and hair, first symptoms noticed are signs of intellectual disability	Inherited inability to metabolize the amino acid- phenylalanine; both parents must carry the recessive gene
Cranial anomalies	Condition of hydrocephalus (water in brain, abnormal circulation of cerebrospinal fluid in brain), macrocephaly (large headedness), microcephaly (small headedness)	Can occur due to development of brain tumor, meningitis, or subdural hematoma; intrauterine infections, pelvic irradiation in pregnant mothers
No.18 trisomy syndrome	Pattern of multiple congenital anomalies, for instance, heart defects, low-set malformed ears, small jaw	Autosomal anomaly of chromosome 18
Tay-Sachs disease	Listlessness, blindness, progressive spastic paralysis, hypertonicity (death by the third year in most cases)	Disorder of lipid metabolism, carried by a single gene
Turner's syndrome	Webbing of neck, sexual infantilism, found in females only	Sex chromosome anomaly (XO)
Klinefelter's syndrome	Presence of small testes, features vary from case to case, found in males only	Sex chromosome anomaly (XXY)
Niemann-Pick's disease	Onset during infancy, loss of weight, dehydration, progressive paralysis	Disorder of lipid metabolism
Bilirubin encephalopathy	Motor incoordination, abnormal levels of bilirubin in the blood	Rh (ABO) blood group incompatibility between mother and fetus

Rubella	Visual abnormalities, cataracts, deafness and anomalies in the valves and septa of the heart	Mother's contraction of rubella
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Check Your Progress 5

1) Define intellectual disability.

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2) Categorize intellectual disability on the basis of IQ scores.

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3) Differentiate between the support required by an individual with mild intellectual disability and severe intellectual disability.

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15.5 SUMMARY

Now that we have come to the end of this Unit, let us list all the major points that we have learnt:

- Oppositional Defiant Disorder and Conduct Disorder come under the major category of Disruptive, Impulse-Control and Conduct Disorder as they share the core feature of aggression or anti-social behavior.
- Conduct Disorder is mostly preceded by diagnosis of Oppositional Defiant Disorder in early childhood and may lead to Anti-Social Personality Disorder later.
- Children with Attention Deficit/Hyperactivity disorder exhibit difficulties in maintaining sustained attention, excessive motor activity, hyperactivity, and impulsivity leading to various social, occupational/academic impairments.
- Some of the triggers for the development of post-traumatic stress disorder can be abuse, parental neglect, accidents, natural disasters, death of a loved one, violent acts, or any other significant change in life.
- Depression is primarily characterized by symptoms of depressed mood, loss of interest in activities, weight loss or gain, sleep related issues, psychomotor difficulties, fatigue, difficulty in making decisions, feelings of guilt and thoughts about death.

- Intellectual disability is defined as significantly sub-average general intellectual functioning, with an onset before 18 years of age and accompanied by limitations in adaptive functioning.

15.6 KEYWORDS

Attention Deficit/Hyperactivity Disorder Difficulties in maintaining sustained or focused attention, exaggerated motor activity, hyperactivity and impulsivity leading to social, occupation/academic issues.

Conduct Disorder Repetitive and persistent pattern of behaving in a way that violates societal norms and rights of other people.

Developmental Psychopathology It is the field devoted to the study of origins and course of individual maladaptation in the context of normal growth processes.

Oppositional Defiant Disorder It is characterized by the presence of persistent defiant, disobedient, and hostile behaviour, especially towards authority figure.

Post-traumatic Stress Disorder A condition that develops after a traumatic event. The symptoms last more than a month and are severe enough to impact the daily, social and occupational functioning of an individual.

Selective Mutism A disorder in which children do not speak in particular situations, such as a classroom.

Separation Anxiety Disorder Characterized by fear, anxiety, or avoidance of a situation that may lead to separation from an attachment figure or primary caregiver.

15.7 REVIEW QUESTIONS

1. Discuss the psychological vulnerabilities of young children.
2. Elucidate the causes and risk factors involved in Oppositional Defiant Disorder and Conduct Disorder.
3. Explain the terms- inattention, hyperactivity and impulsivity.
4. Mention the clinical symptoms and probable causes of depression.
5. Elaborate upon a few disorders with depression as a feature.
6. What is Social Anxiety Disorder? Mention some of the triggers and causes of this disorder.
7. Explain the symptoms and features of Post-traumatic Stress Disorder.
8. What are the probable causes of intellectual disability?
9. Discuss the levels of intensity or support required by individuals with intellectual disability.

15.8 REFERENCES AND FURTHER READING

- American Academy of Child and Adolescent Psychiatry. (2009). *ODD: A guide for families* by the American Academy of Child and Adolescent Psychiatry.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (DSM (5th ed.)). Washington, DC: American Psychiatric Association
- Barkley, R. A. (1997). Behavioral inhibition, sustained attention, and executive function: Constructing a unified theory of ADHD. *Psychol. Bull.*, 121, 65–94.
- Becker, K. D., Stuewig, J., Herrera, V. M., & McCloskey, L. A. (2004). A study of firesetting and animal cruelty in children: Family influences and adolescent outcomes. *J. Am. Acad. Child Adolesc. Psychiatry*, 43, 905–12.
- Benjamin, C.L., Harrison, J.P., Settapani, C.A., Brodman, D.M., & Kendall, P.C. (2013). Anxiety and related outcomes in young adults 7 to 19 <http://dx.doi.org/10.1037/a0033048>
- Biederman, J., Monteaux, M. C., Doyle, A. E., Seidman, L. J., Wilens, T. E., Ferraro, F., et al. (2004). Impact of executive function deficits and attention deficit/hyperactivity disorder (ADHD) on academic outcomes in children. *J. Consult. Clin. Psychol.*, 72, 757–76.
- Burke, J.D., Loeber, R., Birmaher, B. (2002), Oppositional defiant and conduct disorder: a review of the past 10 years, part II. *J Am Acad Child Adolesc Psychiatry* 41:1275-1293.
- Butcher, J. N., Hooley, J. M., Mineka, S. & Dwivedi, C. B. (2017). *Abnormal Psychology* (16th Ed.). Pearson, India.
- Comer, J.S., Blanco, C., Grant, B., Hasin, D., Liu, S.M., Turner, J.B., & Olfson, M. (2011). Health-related quality of life across the anxiety disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry*, 72, 43-50. <http://dx.doi.org/10.4088/JCP.09m05094blu>
- Connor, D.F. (2002), *Aggression and Antisocial Behavior in Children and Adolescents: Research and Treatment*. New York: The Guilford Press.
- Durand, V. M., & Barlow, D. H. (2012). *Abnormal psychology: An integrative approach*. Wadsworth/Cengage Learning.
- Eckenrode, J., Ganzel, B., Henderson, C.R., Smith, E., Olds, D.L., Powers, J., Cole, R., Kitzman, H., Sidora, K. (2000), Preventing child abuse and neglect with a program of nurse home visitation: the limiting effects of domestic violence. *JAMA* 284:1385-1391.
- Gazelle, H., Workman, J. O., & Allan, W. (2010). Anxious solitude and clinical disorder in middle childhood: Bridging developmental and clinical approaches to childhood social anxiety. *Journal of Abnormal Child Psychology*, 38(1), 1-17.

Goldstein, R. B., Grant, B. F., Ruan, W. J., Smith, S. M., & Saha, T. D. (2006). Antisocial personality disorder with childhood-vs adolescence-onset conduct disorder: Results from the national epidemiologic survey on alcohol and related conditions. *J. Nerv. Ment. Dis.*, 194(9), 667–75.

Hackman, A., Ehlers, A., Speckens, A., & Clark, D. M. (2004). *Characteristics and Traumatic Stress*, 17, 231–40.

Happe, F., & Frith, U. (1996). Theory of mind and social impairment in children with conduct disorder. *Brit. J. Develop. Psychol.*, 14, 385–98.

Juvonen, J., Graham, S., & Schuster, M. A. (2003). Bullying among young adolescents: The strong, the weak, and the troubled. *Pediatrics*, 112, 1231–1237.

Kaski, M. (2000). Aetiology of mental retardation: General issues and prevention. In M. G. Gelder, J. J. Lopez-Ibor, Jr., & N. Andreason (Eds.), *New Oxford textbook of psychiatry* (pp. 1947–52). New York: Oxford University Press.

Kearney, C. A., Chapman, G., & Cook, L. C. (2005). School refusal behavior in young children. *International Journal of Behavioral Consultation and Therapy*, 1(3), 216.

Kearney, C.A., & Albano, A.M. (2000). When children refuse school: A cognitive-behavioral therapy approach/Therapist's guide. San Antonio, TX: *The Psychological Corporation*.

Lengua, L. J. (2006). Growth in temperament and parenting as predictors of adjustment during children's transition to adolescence. *Develop. Psych.*, 42, 819–32.

Lingenfelter, N., & Hartung, S. (2015). School refusal behavior. *NASN School Nurse*, 30(5), 269–273.

Matthys, W., Vanderschuren, L. J., & Schutter, D. J. (2013). The neurobiology of oppositional defiant disorder and conduct disorder: altered functioning in three mental domains. *Development and psychopathology*, 25(1), 193–207.
<https://doi.org/10.1017/S0954579412000272>

McNally, R. J. (2013). Posttraumatic stress disorder and dissociative disorders. In P. H. Blaney, T. Millon, & S. Grossman (Eds.). *Oxford textbook of Psychopathology* (3rd ed.). Oxford, UK: Oxford University Press.

Menaghan, E. G. (2010). Stress and distress in childhood and adolescence. In T. L. Scheid & T. N. Brown (Eds.), *A handbook for the study of mental health: Social contexts, theories, and systems* (2nd ed., pp. 321–33). New York: Cambridge University Press.

Merrell, K. W. (2013). *Helping students overcome depression and anxiety: A practical guide*. Guilford Publications.

Mohan, L., Yilanli, M., & Ray, S. (2020). Conduct Disorder. *StatPearls* [Internet].

- Nigg, J. T., Stavro, G., Ettenhofer, M., Hambrick, D. Z., Miller, T., & Henderson, J. M. (2005). Executive functions and ADHD in adults: Evidence for selective effects on ADHD symptom domains. *J. Abn. Psych.*, 114(4), 706–17.
- Nock, M. K., Kazdin, A. E., Hiripi, E., & Kessler, R. C. (2007). Lifetime prevalence, correlates, and persistence of oppositional defiant disorder: Results from the national comorbidity survey replication. *J. Child Psych. Psychiatry*, 48(7), 703–13.
- Poquiz, J. L., & Frazer, A. L. (2016). Depression in Children and Adolescents. *Clinical Child Psychology Program*.
- Samuel, D., & Sher, L. (2013). Suicidal behavior in Indian adolescents, *International Journal of Adolescent Medicine and Health*, 25(3), 207-212. doi: <https://doi.org/10.1515/ijamh-2013-0054>
- Silk, J. S., Nath, S. R., Siegel, L. R., & Kendall, P. C. (2000). Conceptualizing mental disorders in children: Where have we been and where are we going? *Develop. Psychopathol.*, 12, 713–35.
- Staller, J. A. (2006). Diagnostic profiles in outpatient child psychiatry. *American Journal of Orthopsychiatry*, 76(1), 98-102.
- Stickle, T. R., & Blechman, E. A. (2002). Aggression and fire: Antisocial behavior in firesetting and nonfiresetting juvenile offenders. *J. Psychopath. Behav. Assess.*, 24, 177–93.
- Tager-Flusberg, H., Rogers, S., Cooper, J., Landa, R., Lord, C., Paul, R., ... & Yoder, P. (2009). Defining spoken language benchmarks and selecting measures of expressive language development for young children with autism spectrum disorders.
- Thomas, C. R. (2010). Oppositional defiant disorder and conduct disorder. In M. K. Dulcan (Ed.), *Dulcan's textbook of child and adolescent psychiatry* (pp. 223–39). Arlington, VA: American Psychiatric Publishing, Inc.
- Vashishtha, K. (2015). Treatment of Separation Anxiety Disorder- A Clinical Case Study. *Case Studies Journal*, 6(4), 14-20.
- Venkata, J. A., & Panicker, A. S. (2013). Prevalence of Attention Deficit Hyperactivity Disorder in primary school children. *Indian journal of psychiatry*, 55(4), 338–342. <https://doi.org/10.4103/0019-5545.120544>
- Wender, P. H. (2000). *ADHD: Attention deficit hyper-activity disorder in children and adults*. Oxford: Oxford University Press.
- Yang, M., Ullrich, S., Roberts, A., & Coid, J. (2007). Childhood institutional care and personality disorder traits in adulthood: Findings from the British National Surveys of Psychiatric Morbidity. *Am. J. Orthopsychiat.*, 77(1), 67–75.

15.9 ADDITIONAL ONLINE RESOURCES

Perspectives On
Human
Development II:
Cognitive
Perspective

- *What is social anxiety disorder? (Health matters, University of California, TV)*

VIDEO: What is Social Anxiety Disorder? - Health Matters - UCTV - University of California Television

- *What is ADHD by Psych Hub*

<https://youtu.be/5l2RIOhDXvU>

- *Intellectual Disabilities- Alicia Bazaano, MD, PhD, Pediatric Grand Rounds (2016)*

<https://www.youtube.com/watch?v=Yl2yCaGpkTY>



UNIT 16 DEVELOPMENTAL PSYCHOPATHOLOGY II¹⁶

Structure

- 16.0 Introduction
- 16.1 Autism Spectrum Disorder
 - 16.1.1 Clinical Picture
 - 16.1.2 Causal Factors in Autism
 - 16.1.3 Treatment of Autism
- 16.2 Inclusion of Asperger Syndrome in Autism Spectrum Disorder
- 16.3 Risk and Resilience in Autism Spectrum Disorder
 - 16.3.1 Risk factors in ASD
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- 16.4 Specific Learning Disorder
 - 16.4.1 Causal factors in Specific Learning Disorder
- 16.5 Summary
- 16.6 Keywords
- 16.7 Review Questions
- 16.8 References and Further Readings
- 16.9 Additional Online Resources

Learning Objectives:

After reading this unit, you will be able to:

- identify the symptoms and probable causal factors involved in Autism Spectrum Disorder;
- explain the risk factors involved in Autism Spectrum Disorder and how individuals with it can be resilient; and
- elaborate upon specific learning disorder and how they are different from other neurodevelopmental disorders

16.0 INTRODUCTION

As we have discussed in the previous Unit, developmental psychopathology tries to study the origins and course of patterns of behavioral maladaptation in an individual. Some of these issues have already been discussed. In the present Unit, we will discuss two more important developmental disorders- autism spectrum disorder and specific learning disability.

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16.1 AUTISM SPECTRUM DISORDER

Autism Spectrum Disorder (ASD) is a developmental disorder as the symptoms generally appear in the initial two-three years of life, but can be diagnosed at any age. Research into diagnosis, probable causes, treatment, and history of ASD has advanced considerably in recent years. The complexity of the presentation of ASD can be better conceptualized and understood by the inclusion of this word “Spectrum” It basically speaks to the much less binary nature of the symptoms of ASD (Carmen B. Pingree Autism Center of Learning, 2021). Individual variations exist in the type, severity, and intensity of the symptoms of ASD. Thus, the way strengths and challenges present itself is very different from one person to another. For instance, two individuals with a diagnosis of “low-functioning” autism may present their symptoms differently. In this unit, we would like to discuss the diagnostic criteria, causes and potential treatment for ASD. Although there has been an appreciation of heterogeneity of the disorder but there appears to be some lacunae in this research, one of these being that the individuals with ASD can be ‘resilient’ and we would like to address and discuss this as well.

ASD is one of the most disabling childhood disorders and is often referred to as autism, or childhood autism (Schopler et al., 2001). Autism in infancy and childhood was observed and described by an American psychiatrist Leo Kanner for the first time (Kanner, 1943). It involves a wide range of behaviors and symptoms, including deficits in language, perceptual, and motor development, defective reality testing, and an inability to function in social situations.

16.1.1 Clinical Picture

Usually, varying degrees of impairments and capabilities are visible in children who are diagnosed with autism. We will discuss some of the evident signs and symptoms in this section. A fundamental and typical sign that has been identified is that the child (with ASD) seems aloof from others and this can be evident even at the earliest stages of life. These babies are usually described as non-cuddly, rarely smiling (almost never) especially when being fed, and never noticing people around them, for instance when they are coming and going.

Impairment in social interaction characteristics

Children with ASD demonstrate a qualitative difference in their social interaction. They are often found to have difficulty in establishing and maintaining relationships. They do not develop the sort of social relationships as is expected of their age (Volkmar, Klin, Schultz, & State, 2009). An important observation was made by Magill-Evans and colleagues (1995) in a study, it stated that children with autism do not show spontaneous play. They are unable to engage in skills such as joint attention (MacDonald et al., 2006). Usually, when a child is sitting with a parent and a toy is kept in front of them (in which they are interested), young children typically look back and forth between the toy and the parent, they may smile in an attempt to engage the parent with the toy. But this skill is absent in children with ASD.

The ability to socially interact with others is either very limited or rigid in certain ways. It is important to note here that this is not due to their lack of interest in interacting with others but is due to their inability to process social information from the social interaction and use suitable communication skills to respond. Language processing and nonverbal communication is often inadequate in their case. They may not notice important social cues, such as tone, facial expression etc. and may also have difficulty in using and understanding non-verbal behaviors of others.

They often lack in the ability to understand and take other persons' perspective along with difficulties in understanding their own, and other people's beliefs, desires, intentions, perceptions, and knowledge. For instance, a child with ASD may not be able to understand that another child is sad, even if they see the child crying, this is because they are not themselves sad at that particular moment. They may play with toys and different objects in an unusual way. In some cases, they are seen playing near others but do not play with them, share and take turns, and there are some who completely withdraw from social situations. Some may also engage in excessive laughing or giggling, even inappropriate at times. Social interaction occurs on a continuum and can be classified as follows:

- Aloof: not showing observable interest or concern in interacting with other people unless it is extremely necessary, for instance to satisfy the basic needs. They may get agitated when in close proximity to others or reject physical contact.
- Passive: they may not initiate social interactions but will accept initiations from others when it comes.
- Active: they may initiate social interaction but in an unusual way.

Box 16.1 Some strategies to facilitate development of social interaction skills

Some children with ASD have social interest but do not have the required skill to initiate or sustain the interactions. Like other children, they do not learn social skills by observation or incidentally on their own, therefore, specific skills are targeted in their case with explicit instruction and support. Some skills that are explicitly taught are as follows:

- Taking into account or accepting others in their own work or play space.
- Imitating actions and vocalization of others
- Getting involved in parallel activities with others
- Sharing their things with others
- Teaching them to take turns in an activity that is familiar to them
- Using eye contact to initiate and maintain interactions

Self-stimulation and maintaining sameness

Self-stimulation usually takes the form of repetitive movements such as rocking, spinning etc. which may continue for a longer duration, for instance, for an hour or so. Some other stereotypic motor mannerisms may include

hand flapping, walking on tiptoes, spinning objects, finger flicking etc. They may also be fascinated by moving objects, such as the spinning of a fan or turning wheels on a toy. Some children may seem to actively arrange their environment themselves, thus minimizing intervention from other people and preferring a solitary routine. In certain cases, an inflexible adherence to a nonfunctional routine could also be visible. Some children with ASD may show an active aversion to auditory stimuli, for instance, they may start crying even at the sound of their caregiver/parent. This pattern, however is not always consistent as they may get irritated with a very soft sound and end up ignoring apparently a very loud sound.

Children with autism may also show a preoccupation with parts of objects on sameness and resistance for change. They may form attachments with unusual objects such as rocks, keys, etc. If the object that they are preoccupied with is removed or substituted by something else, they may have a violent temper tantrum or a crying spell which may continue till the familiar situation is reinstated. In addition, they may have certain other challenging behaviors, such as destruction, screaming, aggression, self-injurious behaviors etc. Their behavior might also be a way of communicating their thoughts and desire, for instance, they may express that they are finding a task difficult by throwing a tantrum or screaming loudly (NIMH, 2009).

Box 16.2 Some strategies to facilitate children with ASD with their challenging behaviour

There could be various factors behind the odd and stereotypical factors associated with ASD, but an instructional plan and some strategies can be helpful. Some of them are as follows:

- Expanding the interests and its range for children
- Developing skills across different areas of functioning
- Preparing children for change by planning it in advance
- Identifying and facilitating ways to calm down and reduce anxiety in children

It is important to note here that rather than attempting to control or eradicate “problematic behaviour”, one should focus on adapting the environment (as much as possible) to decrease the occurrence of this behaviour and with this helping them to learn appropriate behaviour that would serve the same function.

Absence of speech and communication related problems

All children with ASD experience some or the other language and communication related difficulty. It can range from being nonverbal to having extensive language skills but with deficiency in its social usage (APA, 2013). Over the years, it has been understood that people with ASD are caught up in a private world (where communication is not considered important), thus, it is not an intentional act but an inability to communicate on their part. Studies have revealed that children with autism do not learn by imitation (Smith & Bryson, 1994). This might also be a cue in explaining the

absence or limited use of speech. Some of the language difficulties that are prominent are as follows:

- Difficulties with nonverbal communication, for instance, unusual use of gesture, facial expression, lack of eye contact, lack of shared focus of attention.
- Delay in or lack of expressive language
- For those who develop language, considerable difference can be noticed-faster or slower rate of speech than normal, monotonous or lilting voice quality, odd pitch etc.
- Using language only to meet basic needs, not for social purposes
- Repetitive speech patterns
- Echolalia speech; immediate or delayed repetition of the speech of others (literal repetition). Although, this may sound meaningful, but may indicate the ability to produce speech and even imitate others.
- Vocabulary not be well developed, for instance, might be dominated by nouns, with a purpose to regulate the physical environment.
- They may have difficulty in changing one topic from another, so they may continue discussing one topic only.
- They may have problems in initiating communication, difficulty using unwritten rules, issues with turn-taking in communication, or may have a stereotypic style of speaking.

One of the earliest indications that a child may have ASD is that their language related milestones might be either delayed or not developed, for instance, they may be unable to use single words by the age of 16 months or combining two words by 2 years of age. Some of them may not make meaningful gestures (pointing at things they may want) or may not respond to their name being called. Some children with ASD may coo and babble as per their age but their language may fail to develop from that point onwards (NIMH, 2009).

Intellectual ability and learning

If we look at the psycho educational profiles of those with ASD, they are often characterized by uneven patterns of development. In comparison to other children, children with ASD show marked impairment while performing various cognitive or intellectual tasks. For example, they might be significantly impaired on memory tasks in comparison to both normal children and children with intellectual disability. This could be due to their particular deficit in representing mental states-that is the deficit in social reasoning, although they are good at manipulating objects. Some cognitive features associated with ASD are as follows:

- receptive and expressive language impairments, mainly while expressing abstract concepts
- deficits in concept formation

- they may be unable to pay attention to relevant cues and information
- deficits in social cognition- impairment in the capacity to share attention, emotion with others, and understanding the feelings of others.
- inability to plan, organize and solve problems

It would be interesting to note that some students may have stronger abilities in the areas of rote memory and visual-spatial tasks in comparison to other areas. They may excel in some of these, such as putting a puzzle together, recognizing words in crosswords, matching tasks etc. Some may show better learning and recall for information presented visually and remembering things they have not learned through pictures might be difficult for them.

Children with ASD may have difficulty in comprehending oral and written information, for instance, following the instructions or directions to read or understand a procedure. Yet, some individuals are capable of identifying words, applying phonetic skills etc. A student might perform numerical computations quite easily but be unable to solve mathematical problems. Development of cognitive skills is uneven in children with ASD; thus, the education programs should be based on the combination of strengths and needs as per the individual student.

People with autism have a range of IQ scores. According to some of the earlier estimates, rate of intellectual disability was high in children with autism (almost 75%), although later researches suggest that it ranges somewhere between 40% to 55% (Chakrabarti & Fombonne, 2001). IQ measures can also help us in determining prognosis; the higher IQ score is indicative of less need for extensive support by family members or others. Children with poor or low IQ score show delay in acquiring communication skills and need a lot of educational and social support even after they grow old. Usually, better language skills and IQ test performances are considered a sign of better prognosis (Ben et al. 2008).

Unusual response to sensory stimuli

People with ASD are usually different from others in their sensory experiences. Their senses might be under reactive or over reactive. A stimulus in the environment might be disturbing or painful to some and this may be true for all sorts of sensory inputs. Although it is not certain to what extent these sensory problems contribute to other characteristics associated with autism, but it has been established that some consideration is to be given to type and amount of sensory stimulation and the reaction of the individual to it.

- Tactile system: it includes skin and nervous system. This system allows people to perceive and respond to their environment appropriately, for instance, pulling away from something that is too hot or responding in pleasure to a hug. People with ASD whose tactile system is affected, may withdraw when touched or may end up overreacting to different textures of objects, leading to irritation, withdrawal and isolation.

- Auditory system: People with ASD may be hyposensitive or hypersensitive to sounds. It has been observed that seemingly harmless and innocent sounds may also cause an extreme response in some children. Thus, they may face various difficulties in a social gathering or a school setting where there are various sounds, like bells between classes, scraping of chairs, announcements etc. which are a part of normal school day. Alternatively, some children with ASD may fail to respond to certain sounds, for instance, their name being called.
- Visual and olfactory systems: some individuals with ASD react to odours such as deodorants and other fragrances. Others may use smell as a cue to gather or seek information from their surroundings. Some children with autism may cover their eyes when encountering lighting, others may look at the shiny objects for extended period of time.
- Vestibular and proprioceptive systems: some structures in the inner ear are responsible to detect movement and changes in position. Children with autism may have differences in this vestibular orienting system, thus they could be fearful of movement or may have problem in orienting themselves on stairs and ramps. Some may seem fearful and clumsy while others may actively seek movement, such as spinning or whirling and this may upset their vestibular system.

Check Your Progress 1

- 1) Explain the usage of term 'spectrum' in Autism Spectrum Disorder.

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- 2) What is echolalia?

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- 3) How does ASD affect a child's ability to use language and communicate?

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16.1.2 Causal factors in Autism

Psychological and social aspects

There are several theories around possible reasons behind the development of autism. One of which says the ASD does not have a single cause (Volkmar et al., 2009), a number of biological and psychosocial influences or factors combine together which lead to unusual behaviour as seen in the case of children with autism.

According to earliest researches in the area, autism was understood as a result of failed parenting (Bettelheim, 1967; Tinbergen & Tinbergen, 1972). Kanner (1949) stated that parents of children with autism were characterized as perfectionists, cold, and aloof, with higher IQs than general population. Perhaps such theories inspired holding parents responsible for the unusual behaviour of their children. Research using larger samples of families and children with autism suggested that parents of children with autism may not differ substantially from parents of children without disabilities (Bhasin & Schendel, 2007).

Some theorists tried to track down the route of unusual speech pattern to make sense of autism. Some children with autism have a tendency to avoid first-person pronouns, so when asked, “Do you want to eat something?”, they may say, “She wants to eat something” (meaning I want to eat something). This led to a question whether autism involves lack of self-awareness (Goldfarb, 1963). However, later research has shown that people with autism do have some self-awareness (Lind & Bowler, 2009) and it follows a developmental progression. There is a possibility that self-concept might be lacking when people with autism also have cognitive disabilities, but this is not because of autism itself.

Echolalia was once understood as an unusual characteristic of autism, but subsequent research in developmental psychopathology has demonstrated that repeating words of others is not unusual and rather is a part of normally developing language skills in most children (Dawson, Mottron, & Gernsbacher, 2008). Similarly, self-injurious behaviour which can be seen in children with autism, like head banging, jumping from anywhere, may commonly occur in developing children. This sort of research helps in isolating myths about autism and also clarify the role of development in the disorder. Thus, one of the conclusions could be that social deficiencies are primary distinguishing features of people with autism.

Biological aspects

At present, very few researchers and clinicians working in the field believe that psychological and social influences play a major role in the development of this disorder. They attribute it mainly to various biological factors which have received empirical support as well.

Over the years, various researches have clarified that a string of genetic component exists in the development of autism (for instance, Volkmar, Klin, & Schultz, 2005). As of yet, specific genes for autism have not been identified, but there is evidence for involvement with various chromosomes as various candidate regions have been identified on chromosomes (Autism Genome Project Consortium, 2007).

Many neurobiological influences are also being studied to understand and explain social and communication problems in children with autism (Volkmar et al., 2009). Research on amygdala (area involved in emotions such as fear and anxiety) demonstrated that for both people with and without autism, the size of amygdala was the same, but those with autism have fewer

neurons in this structure (Schumann & Amaral, 2006). Some earlier researches have demonstrated that young children with autism have a larger amygdala. This was explained by the idea that amygdala in children with autism is enlarged early in life which may cause anxiety and fear, this may contribute to social withdrawal in their case. Continued and excessive stress over a period of time, releases cortisol (stress hormone) in higher quantities causing the absence of these neurons in adulthood (Lombardo, Chakrabarti, & Baron-Cohen, 2009). Neuropeptide Oxytocin is an important social neurochemical influencing bonding and increases trust and reduce fear. Some studies have found lower levels of oxytocin in the blood of children with autism (Modahl et al., 1998) and giving oxytocin to them improved their ability to process information with emotional content (Guastella et al., 2010). It is likely that anomalous functioning in cerebellum (Courchesne et al., 1994), hippocampal formation (DeLong, 1992), and left medial frontal cortex (Happé et al., 1996) may also be contributory factors in occurrence of autism.

16.1.3 Treatment of Autism

The treatment prognosis for autism is poor and because of the severity of the problems, those who are diagnosed with autism are not even treated properly. Unfortunately, due to typically poor response to treatment, children with autism are subjected to a variety of “novel” approaches which also turn out to be ineffective most of the times.

Medical treatment

Antidepressants, antipsychotic medication, and stimulants are the most commonly used drugs in treatment of autism (Handen & Lubetsky, 2005) but the data on their effectiveness do not encourage their use until and unless the child is completely unmanageable by other means or drugs. At times, the drugs used are just to treat the particular symptom that is apparent in the case, for instance if irritability and aggressiveness are present, the medical management may include drugs and ways to lower the level of aggression (Fava, 1997).

Behavioural treatment

Behavioural therapy has been used successfully in managing certain behavioural symptoms such as mastering basics of social behaviour, development of some language skills, and self-injurious behaviour (Charlochristie et al., 1998). Ivar Lovaas (1987) is considered to be the pioneer in behavioural treatment of children with autism and reported positive results from a long-term experimental treatment program. The intervention was conducted mainly at the child's home setting rather than a clinic, thus teaching them for most of their waking hours over several years. It involved both reinforcement and punishment-based techniques and yielded impressive results. Some projects also involved parents with their treatment programs designed in the home setting. Behaviour to be changed was identified and explicit techniques were spelled out for bringing about these changes (Siegel, 2003). It has been found that prognosis for children with autism, especially in the case of children who show the symptoms before the age of 2 is quite

poor. One major difficulty in successful treatment is that children usually are unable to generalize the behaviour outside the treatment context. They are rarely found transferring the learned skill across different situations; therefore, they are unable to meet situational demands and challenges.

Parenting children with autism can be a very stressful job (Dunn et al., 2001). It can be trying and taxing physically, emotionally and financially as well. Encountering frustrating situations daily, providing day-to-day care, and searching for resources (educational, health) can be very challenging for them.

Check Your Progress 2

1. Describe the role of amygdala in the development of ASD.
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2. Explain the historical understanding of parenting as a cause for ASD.
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3. Is behavioral therapy effective in the treatment of ASD? Explain.
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16.2 INCLUSION OF ASPERGER SYNDROME IN AUTISM SPECTRUM DISORDER

Asperger syndrome (AS) was first described by Hans Asperger in 1944 and was characterized by individuals who have difficulties in communication and social interaction. AS was introduced as a diagnostic category in DSM-IV (DSM-IV, 1994) and was removed from DSM-5 in 2013 and was subsumed under the category of Autism Spectrum Disorder (ASD) which has been discussed in the previous section. According to DSM-5, varying degrees of ASD can be categorized on the basis of severity of their symptoms, required level of support, thus what was formerly known as Asperger Syndrome (involving significant impairment in the ability to engage in meaningful social interaction, along with restricted and repetitive behaviour but without severe delays in language and other cognitive skills which are characteristic of people with autism) was now regarded as Autism Spectrum Disorder (ASD).

This change in ASD classification led to controversy as well, especially about the loss of unique Asperger identity. Due to the extensive history and characteristic clinical presentations, many clinicians continue to use this

diagnostic category as a subtype of ASD with no language delays and superior IQ (Hosseini & Molla, 2021)

People with AS display impaired social relationships and restricted or unusual behaviours, but unlike individuals with autism, they are often verbal. They are seemingly more interested in mysterious and intriguing facts than in people around them. They may also have a formal and academic style of speech, thus at times the disorder is also called as the “little professor syndrome”. Their IQ scores fall within the average range and they have very few cognitive deficits (if any) (Volkmar et al., 2009). However, clumsiness and poor coordination is a feature of this disorder. There are delays in symbolic and imaginative play in children. AS is considered as a mild form of autism, it could be due to the characteristics present in people with AS, such as need for solitude, maintaining sameness, and oppressive states of anxiety.

16.3 RISK AND RESILIENCE IN AUTISM SPECTRUM DISORDER

Resilience refers to individuals who have a ‘better than expected outcome’ especially when facing adverse situations such as catastrophe, physical or sexual abuse, negligence and trauma caused due to it (Masten, 2001). Individuals with a ‘good outcome’ in the face of adversity are considered to be resilient. There are certain protective factors that ‘protect’ the child from these stresses and account for resiliency in them. Applying this model in the context of ASD would mean ‘doing better than expected’ if diagnosed with ASD or if one is at a risk for ASD.

16.3.1 Risk factors in ASD

In this section, we will discuss some of the risk factors for the development of ASD. One of the most important ones being sex (Halladay et al., 2015) where it has been found that men are more frequently diagnosed with ASD in comparison to women, sex ratio being 4:1. However, the exact mechanism involved here is still unknown.

As already discussed, ASD is a familiar disorder, thus we know that about 10% of siblings of a child with ASD are affected with ASD themselves (Risch et al., 2014). Evidence (from twin studies) also suggests that more than 90% of the phenotypic variance in ASD can be understood by the genetic factors (Tick et al., 2016). Shared environmental factors also have a role to play, although the way in which they are implicated exactly is not very clear (Newschaffer et al., 2007). Most of the environmental factors are prenatal in origin and may include maternal diabetes, maternal obesity, deficiency of Vitamin D, folic acid, air pollution, consumption of mercury, or prematurity (Schmidt, Lyall, & Hertz-Picciotto, 2014).

16.3.2 Resiliency in ASD

Two important aspects of resiliency in the context of ASD would be explained here- protective effects in females and variable expression of ASD

in younger siblings of children with ASD (Szatmari, 2018). Longitudinal studies from childhood to adulthood for those diagnosed with ASD found that almost 10-15% of adults with ASD have better results as adults and some of them do not even meet the criteria (Henninger & Taylor, 2013). Interestingly, with the change in ASD criteria- broadening it further (Szatmari, 2018), proportion of children with ASD with a 'better than expected outcome' has increased now.

Sex differences

Hiller, Young, and Weber (2014) noted that females with ASD (especially the ones with no cognitive disability) are not recognized or diagnosed that well in comparison to males. Females with similar cognitive ability have lesser repetitive behaviour in comparison to males and are also known to have better social communication skills. This may lead to underdiagnosis in the case of females in comparison to males. Interestingly, 'Carter effect' studies suggest that females with ASD carry more risk variants than males with ASD (Jacquemont et al., 2014) and that the relatives of females with ASD are at a higher risk of being affected than the relatives of males.

Siblings

Another set of focus (in terms of sample) has been on mothers who already have one child with autism. They were followed through the birth and early childhood of their new infant as this new-born is also at a high risk of developing ASD. Around the age of 3 years, these infants undergo a comprehensive assessment to determine if they have ASD or not or any other phenotype that might be of interest. Ozonoff and colleagues (2011) found that almost 20% of the infant sibling developed ASD. But the unaffected children were of more interest to those who were studying the aspects involving resiliency in children. They reported that the 'unaffected' siblings reported certain issues in socialization and communication, high scores on measures of anxiety (Georgiades et al., 2013). Perhaps, these infants also have a risk factor for ASD but they do not develop the full-blown syndrome; despite the genetic risks they do not develop the disorder. What protects them has been an intriguing question but there is no complete explanation for this.

Check Your Progress 3

1. What is Asperger Syndrome?

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2. What are the risk factors in ASD?

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3. Explain the expression of ASD in younger siblings of children with ASD.

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16.4 SPECIFIC LEARNING DISORDER

Specific learning disorder (SLD) comes under the category of neurodevelopmental disorders and is a classification in which a person has difficulty learning in a typical manner within one or more domains. They are also called as learning disabilities or learning disorders and are characterized by inadequate development of some specific academic, language, and speech related skills. It basically included difficulties such in the areas of reading (Dyslexia), mathematics (Dyscalculia), and writing (Dysgraphia). The diagnosis of specific learning disorder was added to DSM-5 in 2013. It is a single diagnosis that describes a collection of possible difficulties with general academic skills, including detailed specifiers for areas of reading, mathematics, and writing. DSM-5 does not identify a single domain, rather a single diagnosis- SLD is deemed fit for a collection of difficulties. The category has been broadened to increase the diagnostic accuracy and target care in a more effective manner. To be diagnosed with SLD, academic performance must be below average in at least one of the above-mentioned fields and the symptoms may also interfere with daily life, school performance, or work. The difficulties should not be due to other sensory, motor, developmental, or neurological disorders (APA, 2013). The broader DSM-5 category of SLD has tried to ensure that fewer affected individuals would go unidentified and at the same time these detailed specifiers would be helpful in targeting and planning effective treatment.

SLD is diagnosed through a thorough clinical review of the individual's developmental, medical, educational, and family history, reports of test scores, teachers' observations, parental remarks, and response to academic interventions. The diagnosis may require problems in reading, writing, arithmetic, and mathematical reasoning skills especially during formal years of schooling. It may include inaccurate, low and effortful reading, poor written expression which may lack clarity, difficulties remembering numbers, facts, or inaccurate mathematical reasoning. The academic skills of the child must be well below the average range of scores in linguistically and culturally appropriate tests of reading, writing, or mathematics. The academic skills must be substantially and quantifiably below the expected chronological age of the individual. These difficulties must not be due to some developmental, neurological, sensory, or motor disorder and must interfere with academic performance and achievement, occupational performance, or daily activities. For individuals above 17 years of age, a documented history of impairing learning difficulties may be substituted for the standardized assessment.

One of the difficulties in this area (as mentioned above) is with reading. It is often called as *dyslexia*. The individual may manifest problems in word recognition and reading comprehension; deficiency in spelling and memory (Smith-Spark & Fisk, 2007). When being assessed on their reading skills, they may omit, add, and even distort words, and reading can be extremely slow. It is important to note here that this deficiency is not due to any intellectual disability or fewer/unequal educational opportunities. Significantly more boys than girls are diagnosed with learning disability, but the estimates of gender discrepancy may vary from one study to another. Some early symptoms may include delay in speech, letter reversal, mirror writing, and being easily distracted by background noise. Box 16.3 summarizes some of the symptoms of dyslexia at different stages. Interestingly, some children are able to compensate for their reading disorder (in elementary grade) by their use of memory and inference. Hence, sometimes the disorder may not be apparent until the age of 9 or sometimes even later.

Unlike some other disorders, they do not have obvious or crippling problems related to making sense and expression of emotions. They do not lack in their motivation, cooperativeness or even eagerness to please their teachers and parents. But, often end up failing in their pursuits. It is important to note here that presence of learning disability in the context of a rigid school system can be quite disastrous as it may impact children's self-esteem, sense of achievement, and psychological well-being. This may finally impact their career and adjustment at their workplace in adverse ways (Morris & Turnbull, 2007).

Severity Specifier for SLD (mild, moderate, and severe) are based on the range of academic domains affected and the likely level of proficiency or assistance required in the areas of specialized teaching, accommodations, services, arrangements to be made, and technology.

Check Your Progress 4

1. Define Specific learning Disorder.

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2. SLD category has been broadened in DSM-5. Explain its benefits.

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3. Define dyslexia.

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16.4.1 Causal Factors in Specific Learning Disorder

One of the most widely held explanation of SLD is that they are products of subtle Central Nervous System impairments. These disabilities could be a result of deficiency, immaturity or dysregulation of brain functions which mediate or are responsible for cognitive skills in a normal child (one not diagnosed with SLD). For instance, language related learning disorder might be a result of failure of the brain to develop in a normally asymmetrical manner (the hemispheres). Left hemisphere has been found to be relatively underdeveloped in the case of many individuals with dyslexia (Beaton, 1997). Using fMRI scans, Richards and colleagues (2005) suggested that people with dyslexia have a deficiency of physiological activation in cerebellum. It could also be genetically transmitted or may run in families.

Box 16.3 Some symptoms of Dyslexia at different stages

No two people with dyslexia are alike as dyslexia may range from mild to moderate to severe to profound. Some of them may also have ADHD along with SLD, therefore, a person with dyslexia may not have every single symptom (as discussed below) but will have many of them.

Preschool and Kindergarten

- Delay in speaking and acquiring language.
- Probable delay in developmental milestones (crawling, walking etc.)
- Mispronounced words and presence of baby talk.
- Inability to learn simple nursery rhymes.
- Difficulty in learning and remembering the letters of alphabets.
- Mixing up sounds in multi-syllabic words (ex: aminal for animal, bisghetti for spaghetti, hekalopter for helicopter, etc.)
- Early stuttering, ear infections
- Difficulty in tying shoes
- Confusion in directionality words and concepts, such as problem in left versus right, over versus under, after versus before etc.
- May not be able to establish a dominant hand early and would switch from right hand to left hand while colouring, or doing any other task. Though eventually, they end up establishing a preferred hand.
- Inability to correctly complete phonemic awareness tasks
- They often have “immature” speech. They may still be saying “wed and gween” instead of “red and green” even in second or third grade.
- Early School Years
- Inability to recognize that letters also have sounds, for example “b” says “bh”,
- Inability to learn simple word like cat, bat, fan, man, cup, pen, log.

- Reversals in writing letters like b and d, m and w, p and q, reversals in the letter s, h, and r. Also, number reversals in 3, 6, 9, 7 and 2.

Secondary School Onwards

- Slow progress in acquiring reading skills; slow and laboured reading.
- Difficulty in reading new and unfamiliar words.
- Missing out or omitting parts in a word while reading or writing.
- Fear and avoidance of reading aloud.
- Letter and word reversals while reading, b/d, was/saw.
- No automatic recognition of sight words such as: the, is, and, because, since, could etc
- May lose their place while reading, may complain letters are swimming, “suspended in the air”, or complain of headaches.
- May have problems copying off the board as they frequently lose their place, illegible handwriting.
- Spelling may be very poor; difficulty remembering and understanding what they have just read.
- Difficulty repeating what is said to them and following a set of oral instructions.
- May have confusion in directionality.
- May experience difficulty with math computation.
- There may be sequencing problems, like days of the week, months of the year, and numbers in sequence cannot be presented in order or may have trouble telling time (using a clock or wrist watch)
- May have poor fine motor co-ordination skills, reflected in handwriting, drawing, colouring, tying shoe laces doing craft work or even during play.

16.5 SUMMARY

Now that we have come to the end of this Unit, let us list all the major points that we have learnt:

- Autism Spectrum Disorder (ASD) is a developmental disorder that is usually diagnosed within initial two years of life, although can be diagnosed later as well. It was described by Leo Kanner for the first time.
- Publication of DSM-5 have changed certain diagnostic criteria for ASD, for instance, it has eliminated the subtypes of ASD including Asperger Syndrome.
- ASD can be understood by impairment in social interaction, need for self-stimulation and maintaining sameness, absence of speech and

communication related problems, intellectual ability and learning, and unusual response of the individual to sensory stimuli.

- Genetic component has a major role to play in the development of ASD.
- Research has posited that damage or dysfunction to amygdala should be at the root of social impairments in people with ASD.
- Treatment prognosis of ASD is usually poor but it can be managed to a certain extent with both medical and psychological treatment.
- Specific Learning Disorder (SLD) is often referred to as Learning disorder or Learning disability and is a neurodevelopmental disorder that begins during school-age. The ongoing problem can be in one or more area concerning reading, writing, or mathematics.
- SLD is considered to be a product of Central Nervous impairments in an individual.

16.6 KEYWORDS

Amygdala Part of limbic system (in brain) that regulates emotions and one's ability to learn and control impulses

Asperger Syndrome Characterized by significant impairments in social relationships and restricted or unusual behaviour without any language delays (as is the case in Autism).

Autism Characterized by significant impairment in social interaction, communication, unusual and restricted behaviour, interest and activity.

Echolalia When children repeat what has been said to them instead of responding accordingly

Learning Disorders Reading, mathematics, or written expression performance is substantially below the levels expected according to a person's age, IQ score, and education.

Resilience Capacity to recover from difficulties or trauma.

16.7 REVIEW QUESTIONS

1. What is known about the cause and treatment of Autism Spectrum Disorder?
2. Explain social interaction impairments in children with Autism Spectrum Disorder.
3. Describe the unusual response to different sensory stimuli in the case of Autism Spectrum Disorder.
4. Shed some light on risk and resilience in Autism Spectrum Disorder.
5. What difficulties does a child with dyslexia have?
6. What are the possible causal factors in the development of Specific Learning Disorder?

16.8 REFERENCES AND FURTHER READING

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (DSM (5th ed.)). Washington, DC: American Psychiatric Association

Autism Genome Project Consortium. (2007). Mapping autism risk loci using genetic linkage and chromosomal rearrangements. *Nature Genetics*, 39, 319–328

Beaton, A. A. (1997). The relation of planum temporale asymmetry and morphology of the corpus callosum to handedness, gender, and dyslexia: A review of the evidence. *Brain and language*, 60(2), 255-322.

Ben Itzhak, E., Lahat, E., Burgin, R., & Zachor, A. D. (2008). Cognitive, behavior and intervention outcome in young children with autism. *Research in Developmental Disabilities*, 29(5), 447–458.

Bettelheim, B. (1967). *The empty fortress*. New York, NY: Free Press.

Bhasin, T. K., & Schendel, D. (2007). Sociodemographic risk factors for autism in a US metropolitan area. *Journal of autism and developmental disorders*, 37(4), 667-677.

Chakrabarti, S., & Fombonne, E. (2001). Pervasive developmental disorders in preschool children. *JAMA*, 285(24), 3093-3099.

Courchesne, E., Townsend, J., Akshoomoff, N. A., Saitoh, O., Yeung-Courchesne, R., Lincoln, A. J., ... & Lau, L. (1994). Impairment in shifting attention in autistic and cerebellar patients. *Behavioral neuroscience*, 108(5), 848.

Dawson, M., Mottron, L., & Gernsbacher, M. A. (2008). Learning in autism. *Learning and memory: A comprehensive reference*, 2, 759-72.

DeLong, G. R. (1992). Autism, amnesia, hippocampus, and learning. *Neuroscience & Biobehavioural Reviews*, 16(1), 63-70.

Dunn, M. E., Burbine, T., Bowers, C. A., & Tantleff-Dunn, S. (2001). Moderators of stress in parents of children with autism. *Community Mental Health Journal*, 37(1), 39-52.

Fava, M. (1997). Psychopharmacologic treatment of pathologic aggression. *Psychiatric Clinics of North America*, 20(2), 427-451.

Georgiades, Stelios, Peter Szatmari, Lonnie Zwaigenbaum, Susan Bryson, Jessica Brian, Wendy Roberts, Isabel Smith, Tracy Vaillancourt, Caroline Roncadin, and Nancy Garon. "A prospective study of autistic-like traits in unaffected siblings of probands with autism spectrum disorder." *JAMA psychiatry* 70, no. 1 (2013): 42-48.

Goldfarb, W. (1963). Self-awareness in schizophrenic children. *Archives of General Psychiatry*, 8, 63–76. *American Journal of Orthopsychiatry*, 19, 416–426.

- Guastella, A. J., Einfeld, S. L., Gray, K. M., Rinehart, N. J., Tonge, B. J., Lambert, T. J., Hickie, I. (2010). Intranasal oxytocin improves emotion recognition for youth with autism spectrum disorders. *Biological Psychiatry*, 67(7), 692–694
- Halladay, A. K., Bishop, S., Constantino, J. N., Daniels, A. M., Koenig, K., Palmer, K., ... & Szatmari, P. (2015). Sex and gender differences in autism spectrum disorder: summarizing evidence gaps and identifying emerging areas of priority. *Molecular autism*, 6(1), 1-5.
- Handen, B. L., & Lubetsky, M. (2005). Pharmacotherapy in Autism and Related Disorders. *School Psychology Quarterly*, 20(2), 155.
- Happe, F., Ehlers, S., Fletcher, P., Frith, U., Johansson, M., Gillberg, C., ... & Frith, C. (1996). ‘Theory of mind’ in the brain. Evidence from a PET scan study of Asperger syndrome. *Neuroreport*, 8(1), 197-201.
- Henninger, N. A., & Taylor, J. L. (2013). Outcomes in adults with autism spectrum disorders: A historical perspective. *Autism*, 17(1), 103-116.
- Hiller, R. M., Young, R. L., & Weber, N. (2014). Sex differences in autism spectrum disorder based on DSM-5 criteria: evidence from clinician and teacher reporting. *Journal of Abnormal Child Psychology*, 42(8), 1381-1393.
- Hosseini, S. A., & Molla, M. (2021). Asperger Syndrome. In StatPearls. StatPearls Publishing. <https://pubmed.ncbi.nlm.nih.gov/32491480/>
<https://carmenbpingree.com/blog/what-is-autism-spectrum-disorder> (2021)
- Jacquemont, S., Coe, B. P., Hersch, M., Duyzend, M. H., Krumm, N., Bergmann, S., ... & Eichler, E. E. (2014). A higher mutational burden in females supports a “female protective model” in neurodevelopmental disorders. *The American Journal of Human Genetics*, 94(3), 415-425.
- Kanner, L. (1943). Autistic disturbances of effective content. *Nervous Child*, 2, 217–40.
- Kanner, L. (1949). Problems of nosology and psychodynamics of early infantile autism.
- Lind, S. E., & Bowler, D. M. (2009). Language and theory of mind in autism spectrum disorder: The relationship between complement syntax and false belief task performance. *Journal of autism and developmental disorders*, 39(6), 929-937.
- Lombardo, M. V., Chakrabarti, B., & Baron-Cohen, S. (2009). The amygdala in autism: not adapting to faces? *American Journal of Psychiatry*, 166(4), 395–397
- Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of consulting and clinical psychology*, 55(1), 3.

Magill-Evans, J., Koning, C., Cameron-Sadava, A., & Manyk, K. (1995). The child and adolescent social perception measure. *Journal of Nonverbal Behavior*, 19(3), 151-169.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American psychologist*, 56(3), 227.

Modahl, C., Green, L., Fein, D., Morris, M., Waterhouse, L., Feinstein, C., Levin, H. (1998). Plasma oxytocin levels in autistic children. *Biological Psychiatry*, 43, 270-277

Morris, D. K., & Turnbull, P. A. (2007). The disclosure of dyslexia in clinical practice: Experiences of student nurses in the United Kingdom. *Nurse education today*, 27(1), 35-42.

National Institute of Mental Health (NIMH). (2009, August 14). Autism spectrum disorders (pervasive developmental disorders). <http://www.nimh.nih.gov>

Newschaffer, C. J., Croen, L. A., Daniels, J., Giarelli, E., Grether, J. K., Levy, S. E., ... & Windham, G. C. (2007). The epidemiology of autism spectrum disorders. *Annu. Rev. Public Health*, 28, 235-258.

Ozonoff, S., Young, G. S., Carter, A., Messinger, D., Yirmiya, N., Zwaigenbaum, L., ... & Stone, W. L. (2011). Recurrence risk for autism spectrum disorders: a Baby Siblings Research Consortium study. *Pediatrics*, 128(3), e488-e495.

Richards, T., Berninger, V., Nagy, W., Parsons, A., Field, K., & Richards, A. (2005). Brain activation during language task contrasts in children with and without dyslexia: Inferring mapping processes and assessing response to spelling instruction. *Educational and Child Psychology*, 22(2), 62-80.

Risch, N., Hoffmann, T. J., Anderson, M., Croen, L. A., Grether, J. K., & Windham, G. C. (2014). Familial recurrence of autism spectrum disorder: evaluating genetic and environmental contributions. *American Journal of Psychiatry*, 171(11), 1206-1213.

Schmidt, R. J., Lyall, K., & Hertz-Picciotto, I. (2014). Environment and autism: current state of the science. *Cutting edge psychiatry in practice*, 1(4), 21.

Schopler, E., Yirmiya, N., Shulman, C., & Marcus, L. M. (Eds.). (2001). *The research basis for autism intervention*. Boston: Kluwer

Schumann, C. M., & Amaral, D. G. (2006). Stereological analysis of amygdala neuron number in autism. *Journal of Neuroscience*, 26(29), 7674-7679.

Siegel, B. (2003). *Helping children with autism learn: Treatment approaches for parents and professionals*. Oxford university press.

Smith, I. M., & Bryson, S. E. (1994). Imitation and action in autism: a critical review. *Psychological bulletin*, 116(2), 259.

Smith-Spark, J. H., & Fisk, J. E. (2007). Working memory functioning in developmental dyslexia. *Memory*, 15(1), 34-56.

Szatmari, P. (2018). Risk and resilience in autism spectrum disorder: a missed translational opportunity? *Developmental Medicine & Child Neurology*, 60(3), 225-229.

Tick, B., Bolton, P., Happé, F., Rutter, M., & Rijdsdijk, F. (2016). Heritability of autism spectrum disorders: a meta-analysis of twin studies. *Journal of Child Psychology and Psychiatry*, 57(5), 585-595.

Tinbergen, E. A., & Tinbergen, N. (1972). *Early childhood autism: An ethological approach*. Berlin, Germany: Parey

Volkmar, F. R., Klin, A., & Schultz, R. T. (2005). Pervasive developmental disorders. In B. J. Sadock & V. A. Sadock (Eds.), *Kaplan & Sadock's comprehensive textbook of psychiatry* (pp. 3164–3182). Philadelphia, PA: Lippincott, Williams & Wilkins.

Volkmar, F. R., Klin, A., Schultz, R. T., & State, M. W. (2009). Pervasive developmental disorders. In B. J. Sadock, V. A. Sadock, & P. Ruiz (Eds.), *Kaplan & Sadock's comprehensive textbook of psychiatry* (9th ed., Vol. II, pp. 3540–3559). Philadelphia, PA: Lippincott Williams & Wilkins.

16.9 ADDITIONAL ONLINE RESOURCES

- *What is Autism Spectrum Disorder?*

<https://www.youtube.com/watch?v=0Pp8jcQ97pY>

- *Learning Disabilities, what are the different types?*

https://www.youtube.com/watch?v=yG_xSBsFMPQ