

# Chapter I

## Introduction

*'There is a plan and a purpose, a value to every life, no matter what its location, age, gender or disability.'*

- Sharon Angle

### **Rehabilitation**

Rehabilitation means to restore the ability of the disabled person. It is the health care, provided to the people with permanent or temporary disabilities, to help them learn to overcome their disabilities. (Teotia, 2018)

### **Rehabilitation Psychology**

The American Psychological Association (2019) focused on the application of Rehabilitation Psychology, scientific and theoretical knowledge, parameters to identify training in rehabilitation and advantages of the process.

The application of psychological principles on adolescents with disabilities due to injury or illness is called Rehabilitation Psychology. In this process, psychologists help in dealing with cognitive, emotional, and functional challenges and equip them to participate in life activities. This form of therapy involves practice, research, and encouragement to foster independence and opportunities for adolescents with a disability.

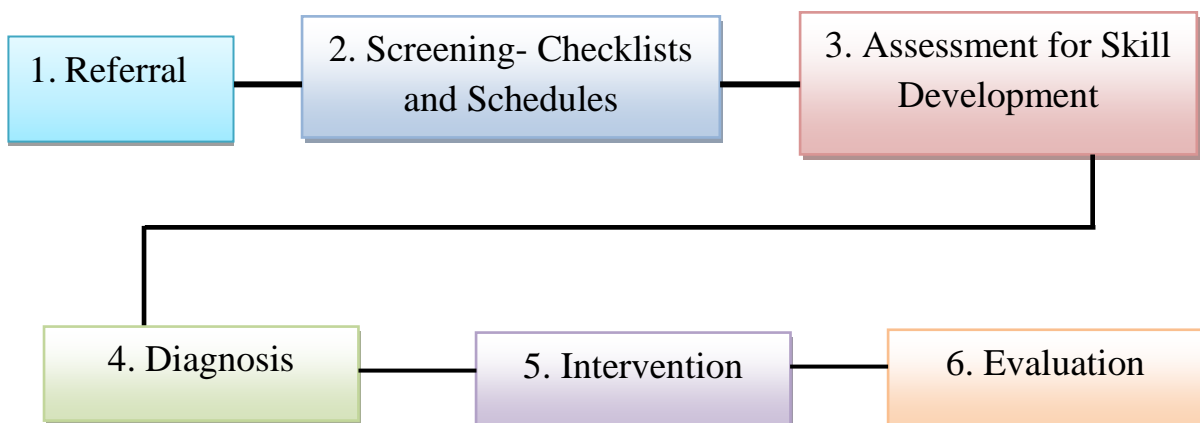
Rehabilitation Psychology consists of various dimensions - mainly Medical Rehabilitation, for the restoration of function through drugs and medicine. The restoration of the capacity to earn a livelihood is developed through Vocational Rehabilitation. Social Rehabilitation focuses on the interpersonal relationship. Psychological Rehabilitation deals with the psychological restoration of adolescents, for instance enhancing personal dignity and self-confidence (Teotia, 2018).

**Advanced scientific and theoretical knowledge.** Rehabilitation Psychology is considered as a specialized knowledge to assess and treat emotional problems, coping with mental status, and behaviour issues. It encourages positive adaptation to both physical and

psychological limitations. A comprehensive awareness is important to understand the type of disability, family background, team dynamics, leadership and social influences (American Psychological Association, 2019).

**Parameters to identify training in rehabilitation psychology.** Adolescents diagnosed with traumatic brain injury, stroke, spinal cord injury, limb loss, sensory loss, chronic pain, multiple sclerosis, and neuromuscular disorder are extensively supported by rehabilitation psychologist to overcome their behavioural and mental issues. The focal point is on minor adjustments to improve rehabilitation. Their measures are structured including the administration of standardized and non-standardized tests. The therapy sessions are conducted individually or in groups, mainly counselling and psychotherapy, cognitive remediation, behaviour management, assisted technology and facilitation of healthy team management (American Psychological Association, 2019).

**Advantages of the rehabilitation process.** The process brings self-sufficiency to the adolescents to regain self-confidence and independence to become self-reliant. It helps in managing self and his or her families in coping with the after-effects of disabilities. This process focuses on better handling through increased awareness of family, efficient nurturing and community support.



*Figure 1.* Identification and Rehabilitation Process (Adapted from Teotia, 2018)

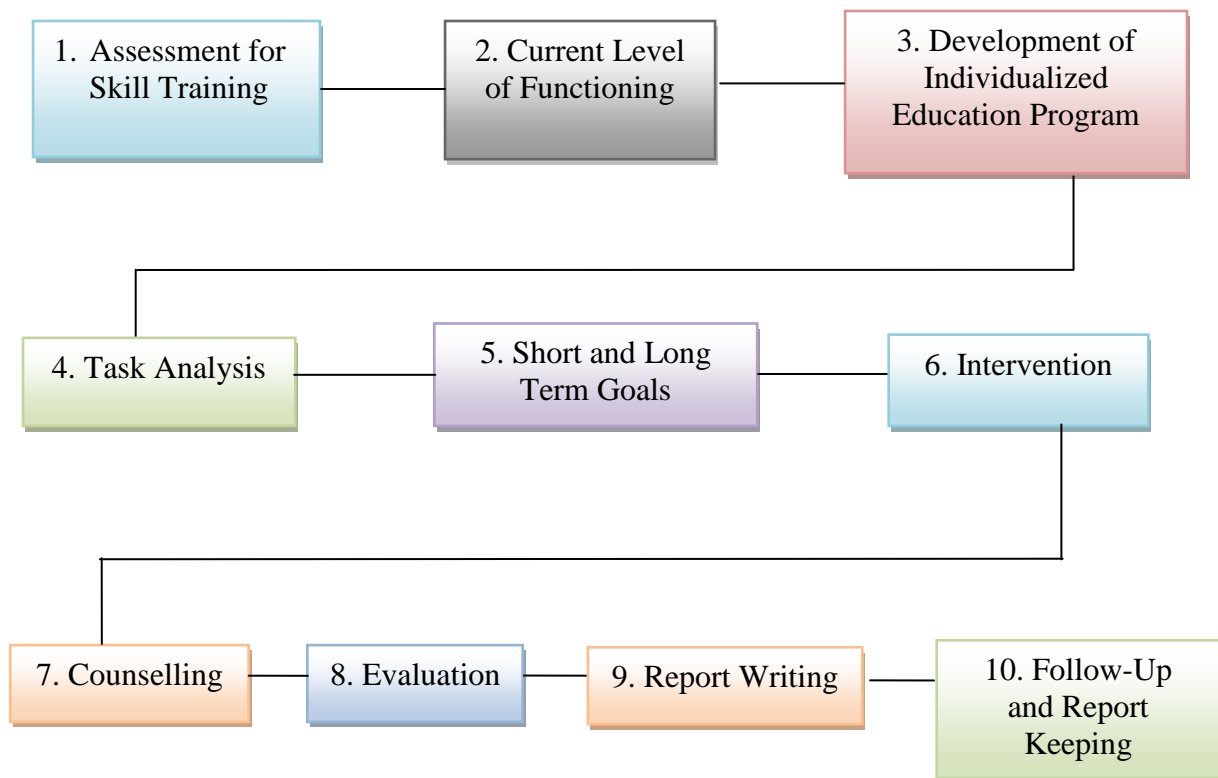


Figure 2. Steps of Intervention for Rehabilitation (Adapted from Teotia, 2018)

**Ethics of Rehabilitation.** Ethics can be defined as the process of decision making which is formal and determined whether the conduct can be considered right or wrong the American Psychological Association has given the ethical principles of psychologist and conduct, 1992 as,

- Release of test data: the individuals need to be well informed about their conditions
- Four types of informed consents: research, therapy, assessment and other psychological services delivered through their organizations
- Ethical decision making: maximum welfare and universal benefit with no harm. The primary goal of rehabilitation is to function for maximizing the abilities of the individuals in the least intrusive way.

### Adolescence

Adolescence has been described as the period in life when an individual is no longer a child but not yet an adult. It is a period in which an individual undergoes

enormous physical and psychological changes. In addition, the adolescent experiences changes in social expectations and perceptions. Physical growth and development are accompanied by sexual maturation often leading to intimate relationships. The individual's capacity for abstract and critical thought also develops, along with a sense of self-awareness when social expectations require emotional maturity. Adolescents are individuals between ages 10-19 years and youth are between 15-24 years. These two age groups are combined in the age group of 'young people' between 10-24 years. (World Health Organization, Commonwealth Medical Association Trust, UNICEF, 2006)

**Adolescents with Disabilities.** According to the United Nations, almost one-third of the world's population is disabled youth and 80% live in developing countries. It is a known fact that adolescents with disabilities often experience social exclusion discrimination and inequality in human rights. (International Online Resource Centre on Disability and Inclusion, 2012). Special needs are an emerging area in the Indian context. Advancement is perceived in terms of facilities, opportunities, education, and empowerment. Psychology and special needs are interrelated because the mental wellbeing of an adolescent is essential for his or her development and growth. There are several reasons why an individual with a disability always has prolonged adolescence. A delay in maturity is observed in adolescents due to lack of exposure to social settings and peers other than immediate family

**The problems related to adolescents with disability.** Adolescents have various difficulties like:

- Physical deformities and abnormal growth.
- Experiences misconceptions about physical appearance, development and mental abilities.
- Sibling discrimination and unhealthy relationships. They also go through a feeling of fear in the educational setting.

**Role of Parents.** Family is the chief component in the life of disabled adolescents. Family is a platform to fulfill specific responsibilities: particularly generating income, protection, maintenance of love and education, sticking to the social norms. The families with disabled adolescents require excess expenditure, time and energy for satisfying the

needs. Parents' reaction to the birth of these adolescents varies extensively. It is speculative in five emotional stages.

- A feeling of shock and disbelief.
- Denial.
- Anger and guilt.
- Depression.
- Shift from self-absorption to concentrating on the adolescent's need.

Parents take multiple roles that often overlap and share common elements. They are provided training to make them more resourceful for the betterment of their adolescents. It has been recognized that a family has the value of following and practicing the implemented program. They often gain unique insights from their day to day experiences living with disabled adolescents. Parents serve as a mechanism providing mutual support and information to each other. They have initiated efforts in education, residential facilities, recreational and vocational services. Therapists and educators have accepted the potentials of the parents as active participants in planning and implementing professional advice at home. (All Jung National Institute of Speech and Hearing Disabilities, 2018).

*Significance of rehabilitation for parents.* It is important to understand the fact that disabled adolescents face many hurdles and struggles to pursue his or her primary tasks. Once parents know that their child is born with a disability, they become shattered, experiencing pain with the inability to recognize and acknowledge the situation. This leads to grieving, regretting and agony. Life changes and the innocent child becomes a matter of attention and concern. These adolescents have complex needs that scare their parents. They cannot leave them in such a situation; hence, they take responsibility and choose to sacrifice their lives for the wellbeing of their adolescent. In addition to giving medications and taking personal care at home, another important aspect is the rehabilitation process that can miraculously change the focus and direct the life of an adolescent productively (All Jung National Institute of Speech and Hearing Disabilities, 2018).

**Teachers Offering Special Education.** Every citizen has the right to education, he or she being normal or disabled. Nevertheless, adolescents with special needs have a difficulty benefiting from regular classroom education on account of their condition.

Hence modifications are made in curriculum decisions, classroom adjustments, financial aids, and teachers are trained appropriately. The role of teachers in special education is competent as they conduct different service programs (Myreddi. V and Narayana. J, 2000).

Globally a survey was conducted by UNESCO (n.d.) on the education provision for children with special needs. A thorough examination from 63 countries across the globe helped in finding the types of programs implemented for the differentially abled. At present integrated inclusive education is the rising trend that is practiced in the form of support teaching system in regular classes with the establishment of a resource room facility.

Special education is a major element of 'Community-Based Rehabilitation' (CBR) giving opportunity for the development of self-confidence and independence. The purpose of all CBR programs is to enable adolescents to receive assistance with the existing structures of education, health, and social services. In India, the service provision for adolescents is more or less similar to global circumstances. Earlier commencement of special schools was more in urban areas, but off late CBR program has been initiated to deliver services closer to their homes.

A consultant teacher is assigned to work with a disabled adolescent in the mainstream class as he or she faces fragmentation. A teacher as a resource person transfers practical techniques and suggestions to facilitate an adolescent's success. A self-contained teacher allows mainstream through the involvement of disabled adolescents in the general population. A teaching assistant accompanies the individual and is called a shadow teacher. An agency employs a special educator to visit various schools in several districts and work with adolescents. This person provides the required auxiliary services. A school-based support team called the Child Study Team operates to discuss and make a recommendation on high-risk adolescents. This team includes an educational evaluator to understand the testing and evaluation procedure, diagnosis, and interpretation. In conclusion, there is no doubt that a teacher should have good knowledge in the legal and educational areas at the same time be prepared for an exciting, rewarding, but demanding profession (Myreddi. V and Narayana. J, 2000).

*Special Education in India Today.* Similar to western culture, the early origins of Special Education in India was commenced by Christian Missionaries and Non-Governmental organizations. After independence from Britain, in 1947 the Indian Government was occupied in providing educational rehabilitation and social services to the differentially abled population (Das and Shah, 2014).

In India, teachers are trained and qualified in special education according to the norms of the 'Rehabilitation council of India' (RCI). They acquire their course either through regular or distance education. Every teacher is given the option of specializing in a particular disability or generally handling multiple disabilities. Special educators became familiar with their roles by understanding their responsibilities and increasing the chances for success. They take multiple roles to accomplish their goals (Narayanan and Myreddi, 2000).

### **Government Policies for Persons with Disabilities**

The Department of Disabilities Affair has been addressed as the Department of Empowerment of Disabilities, soon after the assumed power. Several campaigns and schemes had been launched over the past 2 to 3 years towards creating a disabled-friendly environment; in every sphere such as accessibility, education, providing assisting aids and empowering them through life skills and employment. 'Accessible Indian campaign' (Sugmaya Abhiyan) seeks to make at least 50% of all government architectures in both national and state capital fully accessible for the disabled. Sughamaya Pustakalaya (2015) was launched in collaboration with the National Institute of Visually Handicapped. It is an Online Library with books in diverse languages and accessible formats. Much emphasis was laid on education, leading to the commencement of the Pre-Matric Scholarship Scheme launched 2014-15. Nearly 2,747 students studying in the 9<sup>th</sup> and 10<sup>th</sup> standard benefited through financial assistance (Pustakalaya, 2015).

A total of 5,267 students were benefitted from the Post-Matric Scholarship Scheme launched in 2014-15. Financial Assistance was provided for students from the 11<sup>th</sup> standard to post-graduation. The Top-Class Education Scholarship Scheme was useful for 44 students taking post-graduate courses in institutes of excellence. The National Fellowship for Persons with Disabilities was launched 2012-13 for scholars pursuing their

Master and Doctor of Philosophy. Free Coaching has been envisaged for economically disadvantaged students enabling them to appear for competitive exams for appropriate jobs in Government, Public and Private sectors.

National Action Plan for Skill Development (2015) provides Vocational Training and Employment opportunities improving the quality of life. The Indian Sign Language Research and Training Centre (ISLRTC) were started in 2016. District Disability Rehabilitation Centre provides comprehensive services at the grass-root level. Individual, Institutions, States/Districts are awarded for their achievements by the Ministry of Social Justice and Empowerment on the International Day for Disabled Persons on 3<sup>rd</sup> December. The Parliament has passed the Rights of Persons with Disabilities bill in 2016. In this act, enlarged Reservation Quota could be from 3 to 4 % in a Government Job (Rao, 2017).

### **Government Initiatives for Welfare of Physically Disabled in India**

The National Policy offers Physical and Educational Rehabilitation as a primary objective. The Conversational Right for Persons with Disabilities was implemented as an Act in 2008. The Government promoted several schemes to improve the living standards of persons with disabilities by way of infrastructure facility (Ministry of Social Justice and Empowerment, 2015).

### **Tamil Nadu State Policy for Welfare of Differentially Abled Persons**

The State Government is empathetic and forward-looking in framing welfare schemes for the socially disadvantaged group. The initiative to refer the Disabled as a 'Differentially Abled Person' was an eye-opener in increasing awareness among the public to accept and provide equal participation in social life on an inclusive footing (Government of Tamil Nadu, 2016).

### **National Policy for Intellectual Disability**

The Rehabilitation Council of India (1992) played an important role by regulating training programs and courses in the field of Disability and by maintaining the Central Rehabilitation register of all qualified professionals. The rules on the procedure for issuing Disability certificates were amended by the Central Government in 2009. The Right of Children to Free and Compulsory Education Act, 2009 guaranteed the right to full-time

elementary education for children between 6 and 14 years. The United Nations conventions on the Rights of Persons with Disabilities promote equal enjoyment and fundamental freedom concerning their inherent dignity. The paradigm shift from the Welfare and Charity Approach to the Rights of Persons with Disabilities is encapsulated most effectively through the landmark enactment of the Persons with Disabilities Act, 1995. This was followed in 1999 by the enactment of the National Trust for the Welfare of Persons with Autism, Cerebral Palsy, Intellectual Disability and Multiple Disabilities Act. The objective of this enactment was to enable and empower persons with these disabilities to live independently. It also addresses the needs of those persons who do not have family support and provide for their care and protection (Chavan and Rozatkr, 2014).

### **Education of Persons with Intellectual Disability in India**

The education of persons with disabilities is very vital for their development and independent living. Evolving strategies to enlist the support; the Department of Human Resources and other Developmental Agencies has become a continuous process for inclusion in India. Mainstreaming students with disabilities in regular education classes was a great challenge. These concepts have transformed from various philosophical frameworks that cannot escape the practicality of remediation and constrain involved in implementation. Each of the systems of Special Education is interdependent. The continual consultation and involvement of parent and family members are an integral part of the Special Education Process (Rao, 2008).

### **Theoretical Construct on Cerebral Palsy and Intellectual Disability**

Adolescents with Cerebral Palsy can be managed with the application of Dynamic Systems Theory. This concept is used for the specialized understanding of how movement develops and change occurs. It delivers an understanding of readiness to acquire new motor challenges. As CP affects movement and posture, with possible limitations in activity and participation, this service contributes to the families typically including various forms of intervention, consultation, education, and support. It is recommendable to provide this service before the adolescents reach the peaks and to develop new abilities. DST suggests non-linear, motor development by determining clinically whether an

adolescent gets ready for motor change. The therapy works well in CP and ID (Bartlett and Sauve, 2010).

Researchers stress the significant features of these aspects of identity and consequent implications for the Self-Concept. Social Comparison theorist points out that the particular social identities may vary suggesting that people with Intellectual Disabilities may use selective processes and dimensions that strengthen their self-concept. Social Comparison Theory is a theoretical orientation that is now considered to influence the field of ID. (Dixon, 2006)

Research relating to Social Comparison Theory and people with Intellectual Disability found that rejected people such as those that have been institutionalized shows a greater negative feeling than normal population. Implication of these Dynamic Conceptualizations of Theoretical Comparison process suggests that it is crucial to examine the social comparisons of people with ID to assess the extent to which a sanitized social identity is presented. Low IQ scores are typically associated with Developmental Disabilities and other conditions (Dagnan and Sandhu, 1999).

### **Cerebral Palsy (CP)**

Cerebral palsy is a disorder of movement and posture that appears during infancy or early childhood. It is caused by non-progressive damage to the brain before, during or shortly after birth. CP was first described by the English physician Sir Francis William Little in 1861 (Berker and Selim, 2010).

**Causes.** At the time of pregnancy problems like multiple births, damaged placenta hindering the fetal growth leads to infections. Malnutrition, exposure to toxic substances, gestational diabetes or hypertension are some of the other reasons. Birth complications are pre-mature or post-mature delivery, abnormal position of the baby, rupture of the amniotic membranes, delayed birth cry and respiratory distress due to lack of oxygen. An adolescent may be diagnosed with cerebral palsy considering his or her early childhood difficulties such as brain hemorrhages, meningitis infection, and head injuries due to accidents or abuse, lack of oxygen due to drowning, seizures, and non-functional connections between the brain cells. (Berker and Selim, 2010).

**Signs and Symptoms.** The signs and symptoms of CP are observed during the infant stage at three levels. The first level is abnormal behaviour, when the adolescent show problems like excessive irritability, poor eye contact, and poor sleep. Oromotor problems are the second level causing troubles; frequent vomiting, poor sucking, tongue retraction, persistent bite, and grimacing. The third level indicates poor mobility lacking head and neck control. It is further classified into primary, secondary and tertiary. The primary signs include problems with muscle tone, balance, strength, and sensation. Secondary includes contractures and deformities. Tertiary is related to adaptive problems. (Berker and Selim, 2010).

**Examination for Diagnosis.** The diagnosis of cerebral palsy is carried out in four steps: physical examination, history, clinical and neurological examination. The first step is the physical examination. It has two purposes a detailed history enabling accurate diagnosis and helping the physician to define the disabilities to determine the functional prognosis and set treatment goals. The second step is history that provides valuable information for diagnosis. The third step clinical examination is the observation of movements before proceeding. The fourth step neurological examination is necessary for the adequate knowledge of neurodevelopment stages. Musculoskeletal and functional examinations are the two other forms (Berker and Selim, 2010).

**Management.** Many issues of sensation, perception, cognition, communication, behavioural problems, epilepsy, difficulties with sleeping, drooling and feeding accompany the motor disorder that are seen in CP requiring medical management. A large number of experts and professionals such as physiotherapists, surgeons, occupational therapist and developmental professionals are involved. They apply various treatment procedures and work in harmony for the success. Priorities in management are educating the family, addressing the exact needs of the infant and providing adequate support for optimal growth and development. Play activities, attending mainstream education if possible, and socialization with peer plays a crucial role in the development of adolescents. There are certain treatment goals for cerebral palsy. These objectives are accomplished through the management of medical conditions, controlling pain, assisting with behaviour and social interaction, promoting independence, grooming; optimizing mobility, education, and learning. (Berker and Selim, 2010).

Specific managements for CP include medications to control symptoms causing a muscle spasm, uncontrollable limb movements and seizures. Surgical procedures can help in reducing muscle spasticity and increase flexibility. Complementary and alternative treatment options include energy therapy and manipulating the child's energy, in an attempt to promote energy flow in the body. Movement therapy teaches body movements that promote physical, spiritual, emotional and mental balance. Mind and body techniques include massage, acupuncture, hypnotherapy, guided meditation and imagery, followed by yoga and breathing exercises. Aqua therapy also known as water therapy, promotes physical function, improved muscle tone, confidence, and independence. Occupational therapy assists to improve function in adolescents while they are at home, school or community. Speech therapy aims to help understand language and communicate effectively. Music therapy improves learning, motivation, relaxation and language skills. Behaviour therapy uses positive reinforcements to help change negative behaviour into more desirable adaptive behaviour patterns. Chiropractic care focuses on abnormalities in the muscular-skeletal and nervous systems. According to ayurvedic medicine, CP is a multi-factorial disease with clinical features with wide variation. It can help the disabled with improved functions. The focus is on treating the present symptoms. To some extent, ayurvedic medications improve the functional capacities and regenerations of the damaged brain cells. Yoga postures are also proved to be effective (Jansheski, 2019).

**Prevention.** The two-way preventive strategies in CP are

- a. Universal access to high-quality obstetric care through pregnancy and labor.
- b. The education for women on birth control techniques, reducing pregnancy in a very young or older age

**Classification of CP.** The prime types of motor difficulties are Spastic, Athetoid and Ataxic. The spastic type is further classified into Monoplegia, Diplegia, Triplegia, Quadriplegia, and Hemiplegia. Spasticity is an increase in the physiological resistance of muscle to passive motion. Spastic CP is the most common form. Approximately 70-80% of adolescents with CP are under the spastic category. It is further divided into five subtypes: Monoplegia refers to deformity and inappropriate function in one of the extremities, either one upper limb or one lower limb. In Diplegia, the lower extremities (legs) are affected than the upper extremities (arms). For adolescents with Spastic

Triplegia, three extremities are affected. In Hemiplegic, the upper and lower extremity on one side of the body is affected. Quadriplegia leads to a problem in all four extremities plus the trunk, neck, and face. Athetoid CP refers to abnormal movement of the body. Ataxic CP refers to the loss of balance, coordination and fine motor control. These adolescents cannot coordinate their movements. Mixed CP commonly has mild spasticity, Dystonia, and Athetoid movements. Ataxia and spasticity often occur together. Spastic ataxic Diplegia is a common mixed type of CP. (Berker and Selim, 2010).

**Life Expectancy.** Mortality in CP is extremely varied. The life expectancy is normal in most Diplegic and Hemiplegic adolescents because they receive adequate medical care and have strong family support. Some severely affected Quadriplegics die of malnutrition, infections or respiratory problems before reaching adolescence (Berker and Selim, 2010).

**Prevalence of Cerebral Palsy.** The overall global rates of CP are between 2 and 3 per 1000 live births. In India, it is 3.8% of the population. Nearly 15-20% of the total physically disabled suffer from CP. India has an estimated incidence of around 3/1000 live births; however, being a developing country, the expected annual figure may be much higher (Edwin, 2017). The prevalence of mental and physical disability in Tamil Nadu is 1.6% of the population (Velayudham, 2017).

### **Intellectual Disability (ID)**

It is a neurodevelopment disorder that begins in childhood and is characterized by limitations in both intelligence and adaptive skills affecting at least one of the three adaptive domains: conceptual, social and practical with varying severity (Pivalizza, 2018).

ID is characterized by below-average intelligence or mental ability and lack of skills necessary for day to day living. It is a condition of arrested or incomplete development of the mind, especially characterized by lack of skills manifested during the development period. This disturbance can occur with or without any other mental or physical condition.

Adolescents with ID can learn new skills at a slow pace. There are varying degrees of intellectual disability from Mild to Profound. An IQ test measures Intelligence

Quotient. The average IQ ranges from 90-110 (Edwin, 2019). Standardized intelligence tests conventionally estimate degrees of intellectual disability. These can be supplemented by scales assessing social adaptation in a given environment. These measures provide an approximate indication of the degree of intellectual disability. The diagnosis will also depend on the overall assessment of intellectual functioning. Social adaptation may change over time; however, they may improve as a result of training and rehabilitation.

**Causes.** An adolescent is diagnosed with ID if he or she has undergone any of the following circumstances. Trauma complications such as oxygen deprivation before, during or after birth, malnutrition and environmental toxins during prenatal and postnatal stages. Inherited metabolic disorders, genetic abnormalities and conditions like Phenylketonuria, Down Syndrome and Fragile X Syndrome are added indications. (Philips, 2014).

**Signs and Symptoms.** Adolescents with intellectual disabilities depict different signs and symptoms. They may appear during infancy, or may not be noticeable until adolescence. It often depends on the severity of the disability. Some of the most common signs are rolling over, sitting up, crawling or walking late and talking behind schedule. Slow in activities of daily living like bowel training, dressing, feeding him or her and difficulty remembering things. Inabilities to connect actions with consequences, difficulty with problem-solving and behaviour problems such as explosive tantrums are some of the areas of difficulties for them. In adolescents with severe or profound intellectual disability, there may be other health problems as well. These problems may include seizures, mood disorders, motor skill difficulties, vision and hearing problems (Philips, 2014).

**Diagnosis.** The first and foremost important step in the diagnosis of ID is to obtain a comprehensive medical and family history of the adolescent. Assessment of mental health status during pregnancy is used to establish a knowledge baseline history of the adolescent. The physician obtains information regarding the span of pregnancy, premature onset of labor or rupture of the membranes, duration, and course of labor, type of delivery and any complications. The parents are asked about any illness, feeding or sleeping difficulties in the newborn period and problems with sucking or swallowing as well as the baby's general disposition. A developmental screen is used at all visits to obtain information about the milestone. Specific questions about the adolescents' current

developmental abilities are asked during each visit. The Revised Denver Pre-Screening Developmental Questionnaire (Denver, 1967) is a useful screening tool that parents can readily complete to help determine the need for further evaluation. Another practical and reliable tool used to monitor development in infants is the Bayley Scale of Infant and Toddler Development developed by Nancy Bayley (1993-2006). The purpose is to describe the current developmental functioning of the infants assisting in diagnosis and treatment. The test intends to measure the child's development in three domains: cognitive, motor and behaviour. The age range is 1-42 months. A complete physical examination begins with a review since birth. Most minor abnormalities are seen on the face, ear, hand or feet. The presence of three or more minor abnormalities provides clues to developmental problems of possible parental origin. Evaluation of the head, face, eyes, ears, and mouth includes a general assessment of visual clarity and hearing

**Management.** To develop an appropriate management plan, an assessment of age-appropriate adaptive behaviours is used as developmental screening tests. The idea of these tests is to determine the missing developmental milestones. The most important goal of treatment is to develop an adolescent's potential to the fullest. Specialized education and training may begin as early as infancy. Attention is given to social skills to help him or her function as normally as possible. Trained professionals need to evaluate for coexisting affective disorders that may require treatment. Behavioural approaches are essential in understanding and working with intellectually disabled. Counselling and occupational therapy is also a form of management. (Sulkes, 2018).

**Prevention.** Efforts for the prevention of intellectual disability usually are based on the different causes and conditions. Genetic counselling for those families with a risk for known inherited disorders may help reduce the risk of an adolescent being born with intellectual disability. Malnutrition is linked with ID; hence, government nutrition programs can help reduce it. Environmental awareness program on the dangers of using alcohol and drugs during pregnancy is also vital in preventing intellectual disability. Taking steps to prevent diseases such as congenital rubella can reduce the risk of intellectual disability (Sulkes, 2018).

**Types.** Intellectual disability is classified into four categories; Mild, Moderate, Severe and Profound. Adolescents with mild ID will have some learning difficulties in school. They will be able to work and maintain good social relationships and contribute to society. Their IQ ranges approximately from 50-69. Moderate ID results in marked developmental delays but most can learn to develop some degree of independence in self-care and acquire adequate communication and academic skills. These adolescents will have IQ ranges of 35-49. The IQ of severe ID ranges from 20 to 34, resulting in need of continuous support. In profound ID, there is a limitation in self-care, communication, and mobility (ICD-10 -WHO version, 2016).

**Prevalence of Intellectual Disability.** ID is a global public health concern. Overall India has a prevalence of 10.5/1000 live births in ID. The urban population has a slightly higher rate (11/1000). It is also estimated that number of intellectually disabled persons are 1,505, 624. A door-door survey was conducted in Tamil Nadu in the districts of Kancheepuram, Ramanathapuram in 2001 and earlier in 1984 in Trichy on a population of 50,000 indicating a prevalence of 1 per 1000. The Department of Empowerment of persons with Disabilities- Ministry of Social Justice, The Government of India has published a state-wise census conducted in India in the year 2011, the total number of population in Tamil Nadu diagnosed with ID are 1,00,847. (National Institute for the Empowerment of Persons with Intellectual Disabilities, 2018)

### **Co-morbidity of Cerebral Palsy and Intellectual Disability**

Associative conditions of cerebral palsy include intellectual disability seizures, hearing and vision problems. Intellectual disability is accompanied by motor or sensory deficits, behavioural problems, epilepsy, and mental illness. (Berker and Selim, 2010).

### **Behaviour in Adolescents with Cerebral Palsy and Intellectual Disability**

Behaviour refers to the actions by which an organism adjusts to its environment. Challenging Behaviours or Behavioural Issues is a term used to describe behaviour that interferes with the child's daily life. Adolescents with Cerebral Palsy and Intellectual Disability are more vulnerable to these struggles because of the challenges that the physical and mental disability presents or even because of the underlying brain damage

that led to the condition. Anyone with a disability can struggle with behavioural conditions, challenging behaviours or disorders like aggression, impulsiveness, self-harm, etc. To be considered a behavioural disorder or problematic behaviour, a set of behaviours must be exhibited in an adolescent for six months or longer. There must be a pattern of problematic behaviours that persist, despite interventions by parents or other adults. Examples of problematic behaviours are those that are inappropriate for an adolescent's age or development status: harming self or others, being destructive, hyperactive, impulsive, lying, stealing, aggression, etc. It is hard to locate specifically why adolescents with cerebral palsy and intellectual disability are more likely to have behavioural challenges. Outside factors also contribute including lack of proper care and inability to cope. Difficulty with communication seems to be a significant factor in challenging behaviours. Any behaviour that is inappropriate for an adolescent's developmental age is problematic (American Psychological Association, 2015).

The problem behaviours are dependency, being, anxious or prone to conflict with their peer group and exhibiting antisocial behaviours. Adolescents with CP and ID also have emotional problems such as intense emotional responses to new challenges. Teenagers and adults are more prone to depression and anxiety disorders. (Child Development Corporation, 2019)

Emotional and behavioural disorders associated with CP and ID, obstruct the adolescent's progress. Most adolescents recognize that they are behind others of their age. Some become frustrated, withdrawn and anxious or act 'bad' to get the attention of other youngsters and adults. Adolescents are victims of bullying in school and social settings. They become depressed. They do not have the language skills needed to talk about their feelings, and problems in their behaviour leading to depression. It is essential to have an adolescent evaluated both medically and psychiatrically if sudden changes in the behaviours are noticed. An adolescent also experiences medical problem that he or she is unable to express. Early diagnosis of psychiatric disorders in adolescents leads to early treatment. Medications are helpful as a part of the overall treatment and management.

## **Diagnosis and Management**

Parents, other caregivers, and teachers recognizing an adolescent with cerebral palsy and intellectual disability are struggling with problem behaviours should consult professionals for diagnosis to help develop a treatment plan. As a parent, he or she may want to start with the adolescent's school. A school psychologist or teacher may evaluate or refer to an appropriate professional. For a younger child, a pediatrician is the right person for initial consultations.

A behavioural health expert evaluates the adolescent through a series of observations and tests. Even if he or she does not meet the criteria for a diagnosis, an expert still guides towards appropriate resources or professionals who are helpful. Any challenging behaviours, even those not labeled are disruptive and should be evaluated and addressed to both the adolescent and family.

Cognitive-Behavioural Therapy is a type of treatment for behavioural disorders. It is a type of therapy that helps adolescents become more aware of their behaviours and realize that they are problematic. They learn to change those behaviours by targeting troubling thoughts and emotions. It is an effective treatment that helps many of them. Adolescents learn to change negative behaviours and replace them with those that are positive and productive.

The types of behaviours related to disability are divided into four: self-injurious, aggressions, stereotyped and non-person directed. A self-injurious adolescent portrays problem behaviours like head-banging, scratching, pulling, eye-poking, grinding teeth and eating things that are not edible. Aggressive behaviours include biting, hitting, punching, grabbing, hair pulling, throwing objects, verbal abuse, screaming and spitting. Repetitive movements, speech, manipulation of objects and rocking are observed with stereotyped problem behaviours. Some problem behaviours resembling damage to property, hyperactivity, stealing, inappropriate sexual behaviour, destruction of clothing, lack of awareness of danger and withdrawal are non-person directed. (Sarah 2019)

Behaviour modification is a therapeutic technique based on the work of Skinner, a famous psychologist known as the father of behaviourism. He developed a theory of Operant Conditioning, stating that all behaviour is generated by reinforcing and punishing

stimuli. Behaviour modification uses a scheduled approach that rewards desired behaviours and punishes undesirable behaviour. This technique continues to be used in therapy and psychological settings.

An ABC model of behaviour modification includes a chart as a direct observation tool that is used to collect information about the events that are occurring within an adolescent's environment. It is used to organize information over several observational sessions by recording the types of behaviours and the events that precede and follow. Observing and recording ABC data assist the team in forming a hypothesis statement and gathering evidence that the problem behaviour has been identified.

### **Self-Esteem**

Self-esteem refers to the favourable or unfavourable attitude towards the self (Rosenberg, 1965). In psychology, it refers to a person's overall sense of self-worth or personal value (Cherry, 2018). It is an essential human need that is vital for average survival and healthy development. Self-esteem plays a significant role in motivation and success throughout life. Abraham Maslow's Hierarchy of Needs Theory (1943) depicts, needs must be fulfilled for a person to grow and achieve self-actualization. Some of the factors that influence self-esteem are genetics, thoughts, age, illness, disability or limitations.

**Characteristics of high self-esteem.** The following qualities describe presence of high self-esteem:

- A belief on firmly placed values and principles.
- Opposing manipulation by others.
- Being receptive to the feelings and needs of others, admit and adhere to social norms. (Sherman, 2019)

**Characteristics of low self-esteem.** The following qualities describe presence of low self-esteem:

- Feelings are insignificant.
- General negativity about life and often an inability to enjoy life. (Sherman, 2019)

**Self-Esteem and Disabilities.** A disabled adolescent's self-identity is very fragile. He or she has mixed feelings always. The causes of low self-esteem are unhappy childhood, poor academic performance, ongoing medical problem, and mental illness. He or she has an added challenge of viewing himself or herself as healthy individuals. They, along with their family, must be able to accept the situation as a component of life. Many variables influence self-esteem. The society emphasizes appearance, speed, and being equal to others. Hence disabled adolescents have additional pressure on themselves to meet society's impossible standards.

The lives of adolescents with special needs are a revolving door of physical, occupational and speech therapies. There is a mutual connection between self-esteem and skill development. Improvement in skills is extremely challenging for them. Overcoming low self-esteem is a task. Since parents and teachers are keen and insightful observers of their adolescents, they can help boost self-esteem through praising, nurturing and encouragement. The development and maintenance of self-confidence are done through non-judgmental and non-comparison. Every adolescent requires high self-esteem to grow into a well-adjusted and productive adult. Unfortunately, this is not the case in adolescents with special needs, for whom setting goals is a battle. Parents and educators can cultivate them right from childhood to adolescence and adulthood.

**Tips for Parents and Teachers to increase Self-Esteem in Adolescents.** The self-esteem of an adolescent with a disability will improve if their parents and teachers understand the nature of the disability and accept it. It is essential to value an adolescent as an individual with unique strengths, interests, and needs. Success can be anticipated with the help of setting realistic goals. These adolescents can also be given opportunities to learn through teaching and assistance. Small and measurable tasks can be assigned to ensure mastery and retention. It is safe to avoid communicating disappointment. Spending quality time with them establishes rapport among each other leading to care, concern, and harmony. Positive reinforcement is a form of motivation for better learning. Providing suitable responsibilities helps adolescents to become more independent. A good sense of humor to have fun helps him or her to enjoy life. Parents and teachers are role models in grooming him or her. Mutual bonding creates a firm platform for improving self-esteem (Dalien, 2019).

### **Positive Psychology**

Positive Psychology focuses on building strengths and competencies rather than merely treating deficits and disorders. It has been defined as the scientific study of optimal human functioning (Seligman, 2009). Positive psychology is concerned with discovering what makes people happier, more productive and more successful (Seligman, 2003). Parents of adolescents with disabilities expect their son or daughter to be happy, healthy, confident and successful. Positive emotions contribute psycho-neuro-immunological benefits which include decrease in pain, longevity and overall health outcomes. These prospects can be made realistic positively through need-based interventions and rehabilitation. Positive psychology is a focus on mental health to give adolescents more opportunities.

**Strategies for a Happy Life.** Effective strategies for a healthy and happy life are an act of kindness, a healthy parent-adolescent relationship, nurturing social relations, practicing spirituality, forgiveness, and sharing. In the present research, these strategies were incorporated in the intervention through social and daily living skills training in addition to relaxation. The researcher created a platform for developing reasonable leadership skills and independence in adolescents. Parents and teachers were masters of support for achieving the goal.

### **Psychosocial Rehabilitation or Intervention**

Psychosocial Rehabilitation promotes personal recovery, community integration and satisfactory quality of life in individuals with mental illness or any disabilities. These services are provided in groups or individually. The focus is on developing individual skills, along with resources increasing their learning, creating a smooth and stress-free environment. Psychosocial rehabilitation approaches are evidence-based in the vital life domains like employment, education, leisure, wellness, necessary life skills, family involvement, and peer support (British Columbia advance practice, Canada 2013).

**History of Psychosocial Rehabilitation in India.** Psychosocial Rehabilitation is a part of psychiatric treatment for persons with chronic illness. In the past two decades, it is increasing gradually. The concepts and approaches are spreading all over the world. It is growing in countries like India. Though the information on history is inadequate, its roots

can be seen from the British Government. Various developments were seen in both phases of pre-independence till 1947 and post-independence 1947-1975 (Ponnuchamy, 2016).

### **Intervention Module**

All rehabilitation intervention packages generally include the following modules which can be designed to suit specific disability needs.

#### **Herbert Benson's Relaxation Response.**

The author of this deep breathing exercise is a medical doctor, cardiologist, and professor in the United States of America. He established the Body/Mind institute in Boston. His interests were medicine and physiology. The base of this relaxation technique is 'flight or fight response'. The fight or flight response is the body's primordial, habitual, natural response that prepares the body to fight or flee, from attack, or danger for continued existence. This relaxation technique is beneficial because it turns off the flight or fight response and brings the body to a pre-stress level. It helps in reducing physical and mental health problems such as gastrointestinal ailments, blood pressure, insomnia, hypertension, stress, and anxiety. This procedure is practiced once or twice a day, either in the morning or at night. The researcher applied this method in the current research to minimize the emotional disturbances in the sample (Benson. H. 2000).

**Behaviour Modification.** Behaviour modification is defined as the alterations of behavioural patterns through the use of techniques like positive or negative reinforcement (Morin, 2018). This therapy is based on the experiments by Skinner (1938) and his theory of Operant Conditioning. The ABC Model is a part of Applied Behavioural Analysis.

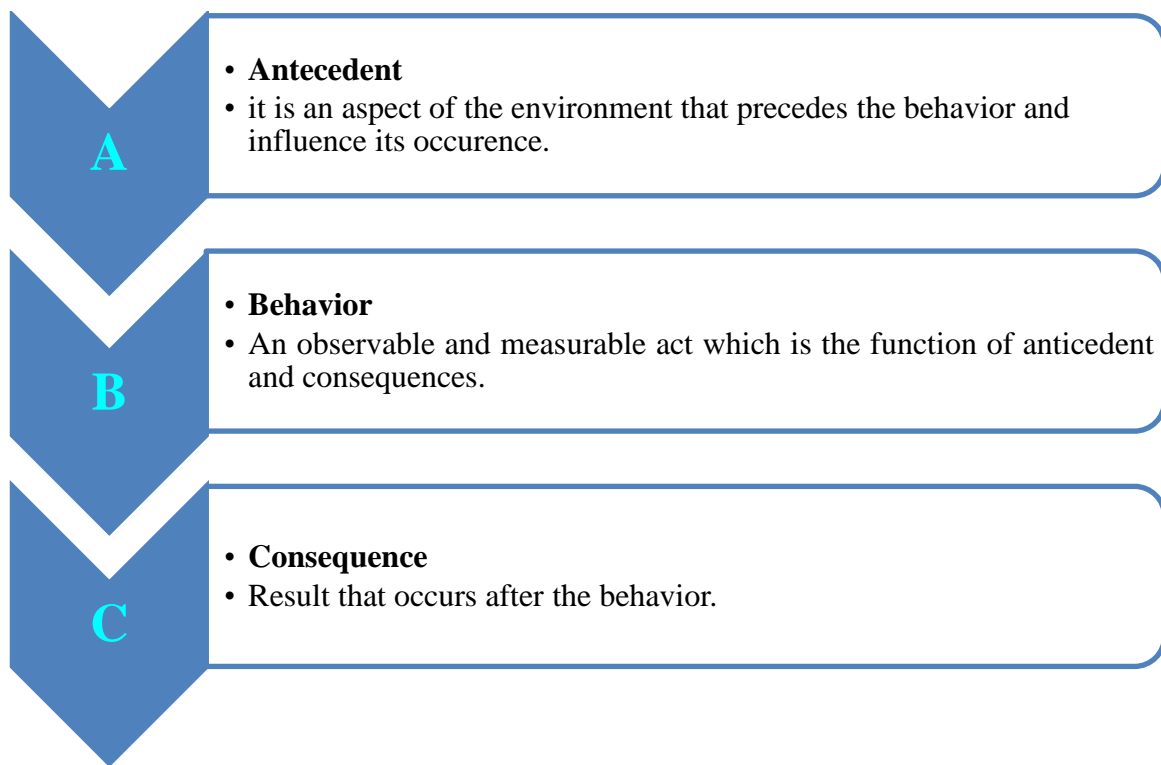


Figure 3. ABC Model (Koegel and Lovaas, 1970)

***Techniques in behaviour modification.***

- Shaping: refers to slowly moulding or training an adolescent to perform a specific response.
- Modeling occurs when an individual intentionally displays a behaviour.
- The token economy is designed to increase desirable behaviour and decrease undesirable behaviour with tokens. Adolescents receive tokens immediately after showing desirable behaviour.
- Reinforcement is a technique that strengthens or weakens behaviour.
- Chaining builds, a series of behaviour. Each provides the cue for the next.
- Prompting is defined as a cue or hint to induce an adolescent to execute the desired behaviour. The researcher applied these methods in the current research to minimize the inappropriate behaviour in the sample (Sarah. C, 2019).

### **Social Skill Training**

Social skills refer to any competence facilitating interaction and communication with others both verbally or through gestures. Common social problems faced by adolescents are anxiety, shyness, emotional connectivity, frustration, sadness, depression and low confidence. This process of learning is termed as socialization.

This training is required for an adolescent with disabilities because more chances and exposures are essential for developing social skills. If they are not trained and left at home isolated, they are deprived of outings and participation in social functions. Once they learn to behave appropriately in a group setting, they are honored to be accepted. This training is beneficial since it enhances relationships, develops personality, increases creativity and productivity, encourages collaborative efforts, increases independence with self-regulation and coping skills. A decrease in feelings of loneliness and isolation, reduction in stress and anxiety is also observed. The training is started at the earliest because an adolescent needs stimulation, repeated chance and supervision to develop proper skills. During infancy, the child must get maximum stimulation from the family to play along. This process is continued through adolescence and adulthood. The researcher applied this to minimize social skill deficits in the sample.

**Self-Esteem.** It refers to a person's overall sense of self-worth or personal value. It is a belief about oneself. It is an essential human need that is vital for healthy development. It synchronizes an adolescent's thoughts, behaviour, feelings, and actions. The hierarchy of needs as specified by Maslow (1943) indicates the lower order need physiological is satisfied before moving up to the safety need and so on upwards to realize oneself moving on to the self-actualization. The concerns of an adolescent with disability is that the lower needs may be taken care of but to feel worthy of self is dependent on the environment, both near and dear for motivation and sustenance of love. It is difficult for adolescents with disability to achieve self-actualization due to their barriers and restrictions. The researcher applied this method in the current research to improve the self-confidence in the sample.

**Stress Management.** Stress is a reaction to a stimulus that disturbs the physical or mental equilibrium. The side effects are anxiety, depression, weight problems, autoimmune disease, skin problems, reproductive issues, heart disease, sleep problems, and cognitive-memory problems. The symptoms are of 4 types: cognitive, emotional, behavioural and physical. Stressed adolescents are unable to concentrate; they feel overwhelmed, leading to nausea or dizziness. They have nervous habits, i.e. Nail-biting. The causes are both internal and external. Relationship difficulties according to situations and negative self-talk are common. The three types of stress are acute, episodic and chronic. Acute stress is the body's reaction to the new change. Episodic stress refers to acute stress occurring frequently. If acute stress is not resolved and lasts for a more extended period, it leads to chronic stress. The researcher used this training in the current research, to reduce the stress in the sample.

**Anger Management.** Anger is an emotion categorized by tension on something or someone. It is a way of expressing one's feelings in a difficult situation resulting in increased blood pressure or physical condition, causing harm to mental and physical health. The types of anger are hasty, sudden, settled, deliberate and dispositional. The first type is connected to impulse for self-preservation. The second type is a reaction to the unfair treatment of others. The third is more related to character traits than instincts and cognition. Adolescents with disabilities get angry because they experience denial, argument; lack of quality time with loved ones, low self-esteem, comparison or sibling discrimination, the researcher used management strategy in the current research to reduce anger and frustration in the sample.

**Positive Parenting.** It is very successful when parents look beyond diagnostic labels, considering the adolescent's potential regardless of his or her stage of development, helping him or her to integrate with others and cope with the inevitable frustration. Some essential tips are: constant observation, be consistent, learn about the adolescent's condition, use rewards, offer praise, establish routines, believe in the adolescent, have confidence in self abilities and flexibility in interactions. The researcher aimed to improve and modify the parenting style.

**Teacher Guidance Program.** Special education programs are designed to fulfill the requirements of the adolescents with disabilities in a classroom setting that enables them to learn skills and information in par with peers. A special educator works with a wide range of adolescents of different ages, abilities and grade levels. In the current research; effective classroom management was helpful; it gave additional inputs to the teachers. They learnt to use the techniques appropriately based on the intensive nature of the problem.

**Individual Counselling.** Individual counselling is also called as psychotherapy or talk therapy. it is a form of treatment procedure through which an adolescent works with a trained professional on a face to face basis in a safe, comfortable and caring environment. It is a personal opportunity to receive support and growth during the challenge. Counselling helps to explore their feelings, behaviour, and beliefs. It focuses on the adolescent's immediate to near future concerns. The benefits are coping with grief, handling depression, psychological trauma or any form of dissatisfaction. It is an effective way to solve problems, set and achieve desirable goals. this process is a form of building a professional relationship through teamwork, communication, and expression. The mode of execution is in the form of individual or group sessions based on the requirement. It is also considered as a discussion between a counselor, and the adolescent. The roles of individual counselling are as follows: a school counselor employed in a special school is either a regular school psychologist, or a special educator who takes the role of a counselor. His or her tasks are challenging because the adolescents are diagnosed with a disability or any limitations, unlike the normal populations. Both parents and adolescents are counseled together or individually. the issues dealt with are anxiety, depression; low self-esteem, difficulty in creating healthy relationships, body image and cultural issues. Any severe case that the counselor finds difficult to handle is referred to as other professionals. They encourage parents for IEP (Individualized Educational Program). Other professionals are collaborated in delivering the services. The counselor identifies adolescents who need to be assessed, to determine eligibility for special education. In the present study, individual counselling helped the researcher to understand other hidden problems in the sample apart from the questions for investigation in general, there were hindrances like spouse conflict, teacher-adolescent conflict, health concern, extended

family conflicts, etc. all the six modules of the intervention gave clarity on understanding, acceptance, and flexibility.

### **Rationale of the Study**

In the present study, as a psychologist, the researcher would like to focus on the following aspects.

- Importance of awareness and acceptance of disability.
- Effect of psychosocial intervention, consisting of 6 different topics focusing on emotion, behaviour, social and psychological aspects of adolescents.
- To educate and demonstrate the practical skills to adolescents, parents, and teachers.
- Involvement of parents and teachers as supporting system to help their wards in fostering a positive outcome.

A literature survey was made considering the nature of the population, variables chosen for the present study and the tools used for administration. The researcher reviewed studies conducted over the past 5-10 years and found that reviews are very limited in cerebral palsy co-morbid with intellectual disability. There are International and Indian studies conducted on cerebral palsy and intellectual disability individually. Previous evidences are limited on both parent and teacher perceptions on the variables' behavioural issues and self-esteem in India. To mention a few studies, research on the types of disabilities, physical and intellectual disability possesses greater challenges than other categories. Adolescents with these two disabilities in amalgamation have a condition of arrested or partial development of mind and body. The families of adolescents with CP and ID, predominantly, the parents have expectations of normalcy in their ward. The essential family concerns are: information about the condition, management, services accessible, vocational rehabilitation, marriage, emotional needs, societal acceptance, governmental benefits and legislation, etc. The needs of the families having adolescents with CP and ID are very compound and it is required for building support programs for them.

The teachers, as special educators, need help in designing and implementing the educational plan based on the requirement and capacity of the adolescents. He or she also requires effective strategies in handling negative classroom behaviours such as distractions, inattentiveness, laziness, attention-seeking behaviours, etc. Considering the previous reviews, the researcher envisages a psychosocial approach (a tailor-made intervention package) evolved by the researcher, to be effective in reducing emotional disturbances, behavioural issues, social deficits, and increase self-confidence among adolescents with cerebral palsy and intellectual disability. It focuses on the providence of the basic essential knowledge and support for this combination of disability involving parents, teachers, and adolescents through psychosocial education and training modules. The following skills and services will be taken into account.

- Arithmetic skills.
- Independent living skills.
- Community integration.
- Counselling services.
- Parent counselling and training.
- Psychological services

Based on the in-depth insight from various academic sources on the nature and condition of the population the researcher framed the significance of her study proceeding to the next chapter.