Chapter II

Review of Literature

Special needs and rehabilitation are an emerging area in Indian society. There is a lot of advancement in terms of facilities, opportunities, education, and empowerment. Addressing the psychological and other special needs in addition to rehabilitation is necessary for the development and growth of a child with a disability. The environment in which the child grows is highly influenced by his or her close and extended family members as the experience with peers is limited. Also, adolescents with a disability are at a disadvantage in dealing with developmental demands. Hence the risk of maladaptive behaviour and psychological issues are high in these adolescents. This also brings about the need for various psychological interventions and techniques in improving their quality of life.

It is of paramount importance for any researcher to acquaint himself/herself with the previous literature on one's topic. This helps in formulating a practical methodology on how to go about doing the research. The literature related to the research on ‘Effect of Psychosocial Intervention through Parents and Teachers Support among Adolescents with Cerebral Palsy and Intellectual Disability’ has been reviewed and presented under the following topics considering the sample and questionnaires used for administration.

Multiple Disabilities and Rehabilitation

Carlberg and Granlund (2018) inquired on achievement and participation in schools for young adolescents with self-reported neuropsychiatric disabilities in Sweden. The aim was to investigate whether any difference existed in participation and achievement in school between these adolescents, and to explore the relationship among the two aspects. A cross-sectional study from the southern part of Sweden was carried out based on data collected from 1,520 adolescents in the sixth and seventh grades. Multiple logistic regressions were conducted. The study indicated that having self-reported neuropsychiatric disabilities restricts participation and lowers achievement in school. The authors concluded that these adolescents are at a deprived school situation and are exposed to factors that have long-term adverse effects. They also are likely to have negative relationships with their teachers, being bullied, have poor connectedness to their parents, and low socioeconomic status. More longitudinal research is required to conclude on the factors causing these two aspects.

Sunil et al (2018) researched the growth and neurodevelopment outcome in preterm low birth weight (LBW) infants with sepsis in India: a prospective cohort involving 128 eligible preterm low birth weight infants admitted from 2013 to 2014 in Durgabai Deshmukh Hospital and Research Centre. Patients were followed up in the outpatient Department of Pediatrics. They were divided into the sepsis and non-sepsis group. A total of 94 infants were evaluated, in the age group of 9-15 months. Low birth weight infants with neonatal sepsis had an increased risk of neurodevelopment disorder. Statistically, there exists no significant difference in growth outcomes. Neonatal infections were associated with the abnormal neurodevelopment outcomes in LBW infants, but there was no significant difference in growth outcome at 9 to 15 months of corrected age between both groups.

Adriaan et al (2018) analyzed the immediate preoperative outcomes of pain-neuroscience education on patients undergoing total knee arthroplasty: a case series determined the direct effects of 12 female osteoarthritis surgical patients undergoing preoperative educational session by a physical therapist on the neuroscience of pain accompanied by an evidence-based booklet. The study measured the fear of movements and belief systems of the patients. It statistically resulted in decreased sensitivity to pain and positive shifts in belief systems towards their knee surgery.

Alotaibi (2017) quantified the co-teaching perception of special educators at middle and high schools in Saudi Arabia. The effectiveness of co-teaching for students with learning disabilities was considered. The participants were 43 special educators who have experience in co-teaching. The data was collected through an online survey. The study concluded stating that co-teachers at middle and high schools in the Riyadh region in Saudi Arabia did not implement the co-teaching approach to the best in their practices.

Benromano et al (2017) detected the physiological and behavioural responses to calibrated noxious stimuli among individuals with cerebral palsy and intellectual disability. Individuals with ID due to CP are at a high risk of experiencing pain. Measuring their pain is crucial for adequate treatment. The indication was the presence and intensity of pain in these individuals. Thirteen adults with CP and ID, and five adults with CP without ID were taken. The study also included fifteen healthy controls. The subjects received pressure stimuli of various intensities. Self-reports using a pyramid scale, facial expressions using facial action coding system and autonomic function were analyzed. Individuals with CP and ID have increased responses to pain and facial expressions.

Dolapo et al (2017) examined the theory of mind, social and emotional functioning and motor severity in children and adolescents with dystonic cerebral palsy. The aim was to investigate whether children and adolescents diagnosed with this particular type of CP experience emotional and social difficulties due to their motor limitations. Twenty-two verbally and non-verbally communicating samples with cerebral palsy were compared with a normative sample of twenty-two children and adolescents on measures of theory of mind, emotion regulation and social difficulties. Higher emotional and social difficulties were found in the CP group compared to the control group. Non-verbal participants with CP presented greater social impairment and lower theory of mind ability than their verbal counterparts. Emotional regulation, hyperactivity and attention difficulties significantly predicted the theory of mind ability and social difficulties. Lower gross motor function and IQ level also contributed to the difference in theory of mind ability. The findings of the study indicated that more attention should be paid to the emotional health and social development of the sample with cerebral palsy along with assessments of their motor difficulties in the planning and implementation of interventions and individual care plans.

Karin (2017) examined the potential benefit of mindfulness and acceptance-based interventions mainly Acceptance Commitment Therapy (ACT) and Mindfulness Acceptance Commitment Approach (MACA) on sports injury rehabilitation. The goals were to help injured athletes handle the negative emotions and thoughts caused by a severe sports injury. The feature of Mindfulness and Acceptance Based Intervention (MABI) is a modified relationship with internal experiences such as thoughts, feelings and body sensations. A thorough literature search has been conducted to find articles on the outcomes of mindfulness training. Results from the reviews revealed that mindfulness practice had a positive effect on stress, anxiety, depressive symptoms, emotion, behaviour regulation and well-being in adults with a sports injury.

Lunsky et al (2017) evaluated the comparative effects of mindfulness, support and information group interventions for parents of adults with autism spectrum disorder and other developmental disabilities. The two interventions were community-based. Parents in the mindfulness group reported significant reductions in psychological distress while parents in the support and information group did not. Reduced levels of distress in the mindfulness group were maintained at 20 weeks of follow-up. Mindfulness scores, parenting scores, and related constructs did not differ between the two groups. Results suggested that the psychological components of mindfulness-based group intervention were effective over and above the non-specific effects of group processes and informal support.

Maree et al (2017) explored the psychological well-being of adolescents with physical disabilities in the Zimbabwean inclusive community setting. The purpose was to eliminate exclusionary practices within the community and encourage a community system that accepts all people irrespective of their difference. Purposive sampling was used to select 14 participants. Data were collected through face to face interviews and transcribed verbatim. Four themes emerged from the thematic analysis of data sources. It was found that adolescent participants with physical disabilities living in inclusive community settings were having high levels of autonomy, choice, purpose in life, positive relations with others, good personal growth and self-acceptance.

Mathilde et al (2017) studied training of fluid and crystallized intelligence: a game-based approach in adolescents presenting with below-average IQ. The study aimed at whether two aspects of global intelligence, fluid and crystallized could be improved in adolescents with below-average IQ by using a game-based cognitive intervention. Thirty-four adolescents participated in cognitive interventions conducted for two days in a week, for one hour, over eight weeks. Standard neuropsychological assessments were conducted before and after the intervention to measure possible improvements in global crystallized intelligence using the Wechsler Scale and Global Fluid Intelligence using a test of Non-Verbal Intelligence. The results indicated that individuals with below-average IQ could improve their fluid and crystallized intellectual functioning through direct cognitive training using commercially available games.

Moskowitz et al (2017) performed an intervention for anxiety and behavioural problem in children with Autism Spectrum Disorder and Intellectual Disability**.** The sample comprised children aged 6, 8 and 9 years from three schools. A multiple baseline design was used to evaluate the effectiveness of a multi-component intervention package, incorporating individualized strategies from positive behaviour support and cognitive behavioural therapy. The results produced out of the intervention is that all three participants showed a substantial decrease in anxiety and problem behaviour and a significant increase in respiratory sinus arrhythmia in the situations that had previously been identified as anxiety-provoking.

Pushpalatha et al (2017) aimed to study stress and to coping among caregivers with cerebral palsy and ADHD children. One twenty caregivers, 30 males, and 30 females having children with cerebral palsy and 30 males and 30 female having children with ADHD were considered. The male caregiver's age ranged between 28-40 years, and the female caregiver's age ranged between 22-30 years. The disabled children's age ranged between 7-12 years. Purposive sampling technique was used as a research design. After obtaining socio-demographic details, the caregivers were administered using the Parenting Stress Index (short form) and Coping Checklist. The data were subjected to the ‘t’ test to find out the significant difference between the two sample groups. Results revealed that there was a significant difference in stress and coping between caregivers of cerebral palsy children and caregivers of ADHD children.

Bal et al (2016) experimented on a vocational rehabilitation intervention for young adults with physical disabilities: they explored the participant's perception of beneficial attributes, their experienced barriers, and facilitators for finding and maintaining employment. Semi-structure interviews (n=19) were held with former intervention participants. Interviews were recorded and transcribed verbatim. Themes were derived using the phenomenological approach. Physical functions, capacities, supervisor's attitude, self-esteem, self-efficacy, openness, and assertiveness were the experienced barriers by facilitators for finding and maintaining employment. Improvement of self-promoting skills and disclosure skills through job interview-training increased their self-esteem. A suitable job was given through placement. The improvement in workability was made by the arrangement of adjusted work conditions. The supervisor’s attitude had changed after he was educated. Assertiveness and openness skills training were recommended for future research.

Canha et al (2016) investigated on the well-being and health in adolescents with disabilities using self-ratings of health and its relationship to life satisfaction. The sample included 213 students with disabilities and a control group of 242 students without disabilities. Participants completed questionnaire ‘Health Behaviour in School-Aged Children, (HBSC) that was administered in the classroom. The result showed that students with disabilities who reported better health self-rating were happier and more satisfied with their lives. A comparison between groups showed that students with disabilities presented more symptoms and lower health perception than their nondisabled peers. There is a need for intervention to empower adolescents with disabilities to better manage their health.

Cornoldi et al (2016) scrutinized the attitudes of primary school teachers towards learning disabilities in three western countries. The beliefs and attitudes of 557 primary school teachers from three countries (Italy, Spain and the United States) were compared. Results from this study supported the hypothesis that in general, teachers in these areas are adequately well informed about students with LD and were in favour of policies supporting their needs. However considerable differences emerge among countries about the etiology of LD, teachers' and specialists' roles in managing LD students, intervention planning; inclusion, compensatory provisions and range of emotional attitudes that teachers’ exhibit. These differences have implications for interventions and suggest that efforts should be made to enlarge teamwork and promotion of common policies across countries.

Das et al (2016) overviewed the interventions for adolescents' mental health. Thirty-eight, systematic reviews were included. Evidence from school-based interventions suggested that targeted group-based interventions and cognitive behavioural therapy were effective in reducing depressive symptoms. School-based suicide prevention programs suggested that classroom-based didactic and experiential programs increased short-term knowledge of suicide. Community-based creative activities have some positive effects on behavioural changes, self-confidence, self-esteem, levels of knowledge and physical activity. Evidence from digital platforms supported ‘internet-based’ prevention and treatment programs for anxiety and depression. The study evaluated mental health interventions among adolescents who were reported to be heterogeneous statistically in their populations, interventions, and outcomes.

Wallander and Nikko (2016) empirically tested the interventions targeting improvements in mental health for parents of children with Autism Spectrum Disorders. The study was conducted to investigate the effect of written disclosure intervention on the psycho-physiological stress of 71 parents caring for children with ASD. Out of 13 studies, seven randomized controlled trials and six pre-posttest designs met the inclusion criteria. The treatment produced improvements in parenting stress, general health, reductions in depression and anxiety. Interventions included Stress Management, Relaxation Techniques, Expressive Writing, Mindfulness-Based Stress Reduction, Acceptance, and Commitment Therapy. The result indicated that all parents experienced a decrease in parenting stress and caregiver burden over time.

Bogart (2015) explored in his research that ‘disability identity’ predicts lower anxiety and depression in multiple sclerosis. He stated that disability affirms one's status incorporating one's identity in a relationship with depression and anxiety. It was hypothesized that disability identity would predict lower depression and anxiety above and beyond the effects of demographic and disability variables n=106. The participants were assessed on their daily living performances through an internet survey. Hierarchical regressions revealed that disability identity was a unique predictor of lower depression and anxiety.

Polak et al (2015) observed that the patterns of depressive symptoms and social relating behaviours differ over time from other behavioural domains for young people with Down Syndrome. The study aimed to describe the subscales of the behaviour of depressive symptoms, communication disturbance, anxiety, disruptiveness and relating social abilities for young adults with Down Syndrome. Families of young adults with Down Syndrome in Perth, western Australia participated. The Developmental Behaviour Checklist-Adult and Developmental Behaviour Checklist-Primary Care Version were administered to measure emotional and behavioural problems. Results revealed that young people who had lower functioning exhibited significantly more behavioural problems across every subscale when compared to higher functioning people. The behaviour of young adults with Down Syndrome improves over time, but depressive symptoms and social relating behaviour problems persist into adulthood. The study concluded that the identification of Down syndrome during their young age gives better prevention and treatment.

Thomas and Simpson (2015) reviewed on clinical psychology and disability studies: bridging the disciplinary divide on mental health and disability. Clinical psychology and disability studies have traditionally occupied the academic, philosophical and political spaces. The aim was to illustrate the positive consequences, implications and attempts to understand and bridge this disciplinary divide. The concept of psycho-emotional disablism originated within disability studies, seemed to be a useful concept to bridge the gap between the understanding of distress from both disability studies and clinical psychology perspectives. The study concluded that both perspectives can be combined to bring new concepts.

Kim et al (2012) inspected the effect of a psychological intervention program on competitive trait anxiety for the disabled shooting athletes in Korea during the sporting recovery rehabilitation process. Ten challenged athletes in a shooting team (6 males and 4 female) ages between 20-40 years were the study sample. Eight athletes were myelopathic, and 2 were amputees. They received five different psychological intervention programs (Goal Setting Training, Relaxation Training, Imagery Training, Self-Confidence Training, and Positive Self-Talk Training). Efficiency of the training program was evaluated through the Competitive Trait Anxiety Inventory and Athlete Coping Skills Inventory (ACSI-28.) The results indicated that psychological intervention program decreased competitive trait anxiety and increased the psychological skill levels of disabled shooting athletes.

Kishore (2011) investigated the impact and coping in mothers of children with intellectual disabilities and multiple disabilities. It was designed to recognize the differences in perceived disability impact and related coping in mothers having children with intellectual disabilities alone compared to those having children with intellectual and additional disabilities (n=60). Thirty mothers of children with intellectual disabilities and thirty mothers of children with intellectual and other disabilities were assessed for disability impact and coping. Group differences for disability impact and coping were present in specific domains but not overall. Despite variations in coping patterns, both positive and negative coping strategies were observed in both groups.

Cerebral palsy

Madi et al (2019) researched the perception of disability among mothers living with a child with cerebral palsy in Saudi Arabia to understand the perception of disability. A critical ethnographic approach was employed using focus groups and follow-up interviews with the mothers. Three primary themes were identified that specifically influenced and affected the mother's experience of culture and region; motherhood and disability; community stigma and discrimination. The study revealed much-needed knowledge on the topic. The findings endorsed the need for clinicians to listen to the mothers to consider their beliefs and impact of this viewpoint on their experiences. The study provided a conceptual framework for health care practitioners to use the family-Centred model when working with cerebral palsy children.

Avinash et al (2018) investigated the use of natural and ayurvedic medicine on cerebral palsy. The study evaluated a proven herbal neuroregenerative and neurofigurative composite neurovit in the modification of therapeutic outcome and lifestyle improvement of cerebral palsy cases. Selected patients were clinically examined as per various grades of activity to adjudge the severity of illness and examined for the baseline bio status to evaluate the therapeutic outcome and safety profile. Herbal composite ensured a marked improvement in all parameters such as motor power, muscle tone, mental capability, and intelligent quotient in 96% cases without any disease-related complication and drug-related sequel. Cerebral Palsy has no cure in modern medicine in spite of advancements in therapeutics and technologies, but cases diagnosed at an early age are treated with herbal composite adjuvant neurovit syrup. Ninety-seven percent of the cases showed a marked clinical improvement in their lifestyle.

Johnson et al (2018) conducted a qualitative study on school success and participation of students with cerebral palsy, exploring multiple perspectives. The study was centred on the idea of successful school experience in students with CP in Australia. In-depth interviews occurred with students (n=7), parents (n=11), teachers (n=10), school principals (n=9) and allied health practitioners (n=10) to gain the perspective from multiple viewpoints. Specific research questions, interview guides, and demographic questionnaires were configured for each group. Interviews were analyzed thematically within and between groups. Student and school success were impacted substantially by the capacity of adults in the student's life to collaborate, family, school professionals, and allied health practitioners.

Madhavi et al (2018) studied the maternal and perinatal risk factors of cerebral palsy among children attending a cerebral palsy clinic in Visakhapatnam, Andhra Pradesh. Data was collected by eliciting a history from the mothers of 90 cerebral palsy children who were treated for 6 months in 2016. After taking the consent, a pre-test questionnaire was used. A detailed history was made regarding the period of gestation at which the child was born (preterm or full-term), any previous history of pre-term delivery or abortions and neonatal complications was obtained from the caregivers. The total number of subjects was 90, 58 boys, and 32 girls. Around 38% of subjects were born from consanguineous marriage. As per the records available, only 7% of mothers had gestational diabetes. Outcomes were 13% of the subjects were preterm, 22% had low birth weight, 24% had perinatal hypoglycemia, 33% had neonatal jaundice, and 33% had birth asphyxia.

Chalipat et al (2016) assessed the quality of life of parents having children with cerebral palsy children aged between 2-12 years. This was a Cross-Sectional Descriptive Questionnaire-based study, which included 30 parents whose children were attending pediatric or rehabilitation services. Interviews were conducted using a semi-structured questionnaire, and quality of life was assessed using the World Health Organization Quality Of Life-Bref (Whoqol-Bref) Short Version. A descriptive statistical analysis was conducted. Seventy percent of parents reported their overall quality of life as neither good nor poor and 66.67% of parents were satisfied with their health. The quality of life of parents was affected in all domains, predominantly in the social domain. The study indicated that more than half of the parents were satisfied with their general health, while their overall quality of life was neither excellent nor poor.

Priyadharsini and Mukil (2016) studied the effects of Snoezelen in the management of children with cerebral palsy, who exhibits maladaptive behaviour, in selected special care units in Coimbatore. The study analyzed the effectiveness of Snoezelen on the reduction of maladaptive behaviour among cerebral palsy children. Twelve children between the age group of 3 to 13 years were selected. One group pre-test and post-test design without a control group was used. Behaviour assessment scale for Indian children with cerebral palsy was used to assess maladaptive behaviour. Overall, 69% of them were present with the behaviour problem. Wilcoxon Signed-Rank Test was used to find a significant difference between pre and post-intervention scores. The result revealed that there was a substantial reduction in maladaptive behaviour among cerebral palsy children.

Bhinde (2015) conducted a case study on the Ayurvedic management of Cerebral Palsy. It was stated that CP is a non-progressive neuro-motor disorder of cerebral origin. It cannot be correlated with any single disease or condition in Ayurveda, as it is a multi-factorial disease with clinical features of a wide variation. According to Vagbha A, it is classified in the disease categories of Sahaja (hereditary), Garbhaja (congenital) and Jataja (psychosomatic) type of diseases. Of the many types and subtypes of CP, none has any known ‘cure.’ the study took the effort to treat a 3-year-old male child with the spastic type of CP using multiple Ayurveda treatment modalities. At the end of 94 days of treatment, Panchakarma procedures along with internal medication resulted in a 10–15% improvement. The overall effect of therapy has been proved successful.

Mohanpatra et al (2015) intended a retrospective study on parents' expectations from rehabilitation services for their children with cerebral palsy: the aim was to find whether parent's expectations changed across age. The study found some interesting findings, such as the ratio of males and females registered and the mean age range of the children enrolled. The study examined and analyzed the documentation of case history files of children brought by their parents and caregivers to the national institute for the mentally handicapped, Bowenpally, and Hyderabad. General services (n=3960) for male and female ratio, mean age of registration, developmental and social age for 3-36, 36-72 and 72-120-months ranges respectively. As age increased psychosocial difficulties also increased with psychomotor problems. Male cases were more than female. It is concluded that psychosocial rehabilitation and family counselling are more effective than behaviour modification programs. A mobile rehabilitation team is essential to visit area-wise, offering in-neighborhood services along with psycho-education in remote areas.

Ramaswamy et al (2015) scrutinized the clinical profile, predisposing factors and associated co-morbidities of children with Cerebral Palsy in south India. The study was conducted from January 2012 to 2013 on children visiting a neurodevelopment clinic at a tertiary care teaching hospital in India. Cases were evaluated by history, clinical examination, and necessary investigations. Perinatal Asphyxia was the important etiological factor followed by 60% of preventable intra-natal causes and 20% of antenatal causes were the other significant etiological factors including co-morbidities.

Sait (2015) investigated on the self-esteem and quality of life in mild spastic cerebral palsy. A cross-cultural study was conducted across India and the United States of America. Sixty participants aged 12 to 25 years (30 from India, 30 from the USA) were the subjects. They were administered with the Rosenberg Self-Esteem Scale and the world health organization-quality of life brief scale to measure the study variables. Data was collected using convenience sampling. The results were analyzed using a multivariate analysis of variance. There was no significant difference between Self-Esteem and quality of life among cerebral palsy adolescents in India and the United States of America.

Sinha et al (2015) described the physical profile of children with Cerebral Palsy in Jalandhar district in Punjab. It examined the association with biological and social factors. The survey focused on physical examination of the child and scheduled interview on the parents of 248 children with CP (3-13 years) by descriptive analysis. Spastic CP (83.46%) was observed to be the most prevalent type of motor impairment. In Spastic type, Diplegia has been a significant presentation (43.5%), followed by quadriplegia (34.3%), the majority of children fall in level v (57.7 %,) of Gross Motor Function Classification System (GMFCS). Mental Retardation (MR) is (42.3%) the most frequently associated disability. Epilepsy is the most prevalent co-morbidity. About 69% of subjects have been found non-ambulatory and are dependent on their self-care domains. More than 70% of children had been observed with deformities. GMFCS levels were significantly associated with topography, ID, age of diagnosis, time constraint of the parent, difficulty in arranging physiotherapy, ignorance, and beliefs of parents about condition, rehabilitation services required and poor belief in rehabilitation methods. Lack of comprehensive rehabilitation facilities for children was reflected in their poor physical and functional status. Besides the primary impairments, social factors have played an essential role in determining the functional state of these children.

Van et al (2015) investigated the predictors of participation among adolescents with cerebral palsy: A European multi-centre longitudinal study on whether childhood factors that are amenable to intervention (parenting stress, child psychological problems, and pain) predicted participation in daily activities and social roles among adolescents with CP. It was a random selection of 1,174 children aged 8–12 years from eight population-based registers of children with CP in six European countries; 743 (63%) agreed to participate. Scales used were: Parenting Stress Index-Short Form, Strength and Difficulties Questionnaire, Life Habits Questionnaire. The study concluded that the participation of adolescents with CP was predicted by early modifiable factors related to the child and family. Interventions for reduction to pain, psychological difficulties and parenting stress in childhood are justified not only for their intrinsic value but also for probable benefits to childhood and adolescent participation.

Joseph et al (2014) measured the family burden on parents of children with cerebral palsy. The effectiveness of the Family-Centred Psychosocial Intervention Program was analyzed. A quasi-experimental research design without a control group was used. Thirty-five parents in the age group of 21-40 years were chosen using the simple random technique. Children belonged to the age group of 1-12 years, registered in a tertiary care hospital for treatment. The study was carried out from June to November 2013. The data was collected in two phases. The intervention package included the following topics: group interactive sessions on prevention and coping skills of family burden, individual and family counselling sessions for the parents and family members. The frequency of variables, mean, standard deviation; paired t ‘test and Cohen’s d' tests were applied to find the outcome. The paired sample t' test indicated a significant reduction in the level of family burden of the parents. Hence the Family-Centred Psychosocial Intervention was proved effective.

Manjusha et al (2014) determined the health-related quality of life in children with cerebral palsy and their families. One hundred children (3-10 years of age) receiving regular rehabilitation therapy for cerebral palsy for the past year at a Child Development Centre were enrolled for the research. The Lifestyle Assessment Questionnaire was administered to the parents. The physical independence, mobility, and social integration dimensions were more severely affected than the clinical-economic burden and schooling dimensions. The study concluded that health-related quality of life is affected in most children with cerebral palsy.

Somashekar et al (2014) conducted a qualitative study on psychosocial problems among parents of children with cerebral palsy attending two tertiary care hospitals in western India, mainly rural and urban settings. Qualitative research design: Focus Group Discussions

(FGDS) were used. A total of 13 parents participated in the two FGDS. Psychosocial problems experienced by the parents of children suffering from CP were measured. The results revealed that mothers experienced disturbed social relationships, health problems, financial issues, moments of happiness, worries about the future of the child, need for more support services, and lack of an adequate number of trained physiotherapists. All the children had problems since birth and most had approached various health care providers for a cure. The parents of children with CP experience a wide range of psychosocial issues. Future implications stated that studies like this could provide valuable information for designing a Family-Centred Care Program for children with CP.

Abraham (2013) inspected the quality of life among adolescents with physical disabilities undergoing integrated education attending 8-12th classes in government and aided schools in the Kerala district. The research design was descriptive. World Health Organization Quality Of Life: Whoqol-Bref Scale (1997) was used. The result showed that the majority of the participants had an average quality of life. Findings suggested ways to improve the quality of life of adolescents by reducing social and environmental barriers to promote the integration of adolescents in schools, family and communities.

Dababneh (2013) aimed to identify the socio-emotional behavioural problems of children with cerebral palsy in Jordan according to their parents' perspectives. The sample consisted of 96 students with CP aged between 6 and 16 years. Two scales were developed to achieve the study goals. According to their parents' reports, the results revealed that children with CP on average had a moderate degree of overall behavioural problems. The internalized problems composed of subscales such as shyness, depression, anxiety, and social isolation; and externalized problems comprising the Aggressiveness Scale. There were significant differences in the gender, the overall scale and the anxiety dimension in favour of male children. Moreover, there were substantial differences in shyness and isolation dimensions due to the level of disability in support of children with CP and mental retardation. The result showed statistically significant differences in the child's age and overall behaviour problems in both the anxiety and aggressive dimensions.

Majnemer (2013) described the pattern of rehabilitation service utilization in children and youth with cerebral palsy identifying the associated factors. In this research, 91 parents of school-aged children and 167 adolescents with CP completed a questionnaire regarding the educational and rehabilitation resources received within the last 6 months. Demographical details were documented; developmental and functional status was assessed. Half of the children (53.2%) and adolescents (57.5%) were in regular schools. 41% required special education services. The majority of children (84.6%) were receiving at least one rehabilitation, although this decreased (68.1%) in adolescence. Rehabilitation services included occupational therapy, physical therapy, speech-language pathology; psychology and special education for children in segregated schools. The author concluded stating the majority of the children and youth received one or more services. Individuals with greater motor or cognitive challenges were more likely to receive a range of school-based services from rehabilitation specialists. Adolescents were less likely to receive services, and when given, it was most likely consultative.

Reshmi et al (2013) inspected elementary school enrolment and its determinants among children with cerebral palsy in Thiruvananthapuram district, Kerala, to find out the proportion of children with CP who are enrolled for some formal education. This cross-sectional study was done among children, attending special clinics at Government Medical College, Thiruvananthapuram. Children between 3 and 12 years of age diagnosed with CP were the subjects. The factors associated with the initiation of formal education were tested using Chi-Square Test. Independent association of each factor was evaluated through Binary Logistic Regression Analysis. The mean (SD) age of the children (n = 86) was 5.7% two years and three months. Forty-six (53.5%) of them were girls. Diplegia was the most common limb abnormality found. Fifty-two (60.5%) children were undergoing some schooling. Those children who were less dependent physically and those who had achieved better language development were regular school goers. After Binary Logistic Regression the ability of a child to speak in sentences (p = 0.008) and ambulatory level of the child (p = 0.019) were factors which favoured, whereas delay in attaining the adaptive developmental milestone of transferring objects from one hand to another (p = 0.014) was found to be detrimental for school enrollment. Prudent measures should be adopted at family and community levels to aid the development of these children. This will help them achieve superior educational standards and rehabilitation, paving the way for a better quality of life.

Tylor et al (2011) focused on developing and validating the Communication Function Classification System (CFCS) for individuals with cerebral palsy, particularly children. It can be used by a wide variety of individuals who are interested in CP. An eleven-member development team created the comprehensive descriptions of the CFCS levels, while four groups comprising of 27 participants critiqued these levels. Then with a Delphi survey, 112 participants commented on the clarity and usefulness of the CFCS. The participants were adults with CP, parents of CP children, educators, physical and occupational therapist, along with speech-language pathologists. Test-retest reliability was adopted by 48 professionals who allowed at least 2 weeks between classifications. The results demonstrated the content validity of the CFCS and showed very good test-retest reliability along with competent professional and moderate parent-professional inter-rater reliability.

Donalley et al (2010) aimed to report the oromotor dysfunction and communication impairments in children with cerebral palsy. A register was maintained on the clinical links and trends overtime on oromotor dysfunction and communication impairments. A total of 1,357 children born between 1980 and 2001 were studied. Multiple sources of ascertainment were used. Assessment and follow-up of the children were done at 5 years of age using standardized assessment tools including motor, speech problems, swallowing/chewing difficulties, excessive drooling and communication impairments. Twenty-two percent had excessive drooling, and 42% had communication impairments. All impairments were significantly related to limited gross motor function and intellectual impairment.

Davis et al (2009) aimed to explore the impact of caring for a child with Cerebral Palsy: Quality of Life of mothers and fathers of children with CP on a sample aged 3–18 years. The authors examined whether the impact of caring for a child with CP changes from childhood to adolescence. A qualitative study was conducted utilizing a grounded theory framework. Twenty-four mothers and thirteen fathers of children and adolescents with cerebral palsy between the ages 3 to 7 years (n= 15), 8-12 years (n=10) 13-18 years (n=12) with varying levels of impairment based on Gross Motor Functional Classification System participated in semi-structured interviews about their quality of life. The transcripts were analyzed to identify issues affecting parental QOL. There was no difference in parental QOL among subgroups (mothers and fathers, age groups and GMFCS levels). Parental QOL ranged across a broad spectrum. Caring for a child with CP affects a parent's physical health, family and social well-being, freedom, independence, and financial stability. Parents indicated that they often felt unsupported by the services they access, as caring for a child with CP can both positively and negatively impact on a parent's life.

Intellectual disability

Krishnan et al (2018) experimented on the effectiveness of psycho education on psychological well-being and self-determination in key caregivers of children with intellectual disability. The present research focused on the effectiveness of psycho education in increasing the level of psychological well-being and self-determination. Twenty caregivers were selected from the Central Institute of Psychiatry and Deepashika Institute of Child Development and Mental Health Ranchi using a purposive sampling technique. General Health Questionnaire (GHQ-28), Ryff's Psychological Well-Being Scale, Family Interview for Stress and Coping in Mental Retardation (FISC-MR), Problem Solving Inventory (SPSI-R) and Self-Determination Scale were assessed before giving psycho education. The module was created with the help of three resources: national institute of mental health manual for psychologists and teachers, counselor's manual for family intervention in mental retardation and problem solving therapy manual. The intervention was applied individually for 4 weeks (8 sessions). The post-test revealed a significant increase in psychological well-being and self-determination.

Smith and Browne (2018) examined the effectiveness of current psychological interventions for anger and aggression in people with intellectual disabilities in forensic services. Due to the prevalence of difficulties with anger and aggression, and the associated substantial individual and societal consequences, the provision of psychological interventions have become increasingly common. The results highlighted an emerging evidence base for the use of CBT in improving anger regulation, and for a range of psychological therapies in reducing aggressive behaviour. Recommendations were made for future research to address these shortcomings, including clearly-defined adaptations, adequately powered sample sizes, carefully designed baselines and follow-up periods.

Schuiringa et al (2017) evaluated the effectiveness of an intervention for children with externalizing behaviour and mild to borderline intellectual disabilities. It was a randomized trial. One sixty-nine samples with externalizing behaviour and MBID were assigned to Standing Strong Together Training combined with care using cluster random sampling. The ‘Standing Strong Together’ Training (SST) was a combined group-based parent and child intervention for externalizing behaviour in 9-16-year-old. SST led to a significant benefit on teacher reports but not on parent report on externalizing behaviour. It had significant effects on parent-rated positive parenting and the parent-child relationship. The study showed multi-component group-based intervention for children with MBID was feasible and had the potential to reduce children's externalizing behaviour and improve both parenting behaviour and the parent-child relationship.

Abraham et al (2016) evaluated the discontinuity in the genetic and environmental causes of the intellectual disability spectrum. More than 1,000,000 sibling pairs and 9,000 twin pairs were assessed for IQ and the presence of ID. They were evaluated to find out whether the genetic and environmental influences at the extremes of the distribution are different from those operating in the normal range. The study resulted in factors influencing mild ID (lowest 3% of IQ distribution) that were similar to those influencing IQ in the normal range. In contrast, the factors influencing severe ID (lowest 0.5% of IQ distribution) differ from those influencing mild ID. The study concluded that the most severe ID is a distinct condition; qualitatively different from the prevalence, ID represents the low extreme of the normal distribution of intelligence.

Matthew et al (2016) intended on the prevalence of cerebral palsy and intellectual disability among children identified in two US national surveys, 2011-2013 based on parent reports among children aged 2-17 years. CP prevalence was 2.6 per 1000 in the National Survey of Children's Health (NSCH) and 2.9 in the National Health Interview Survey (NHIS). ID prevalence was 12.2 and 12.1 in NSCH and NHIS. For both conditions, the NSCH and NHIS prevalence estimates were similar to each other for nearly all socio-demographic subgroups examined. The result concluded that in spite of using different modes of data collection; the two surveys produced similar and reasonable estimates of CP and ID offering opportunities to better understand the need and situations of children with these conditions.

Munir (2016) summarized the co-occurrence of mental disorders in children and adolescents with an intellectual disability or intellectual developmental disorder. The purpose was to condense the supportive epidemiological data regarding the true co-occurrence (co morbidity) and course of mental disorders in children with intellectual disability across the lifespan. Published studies involving representative populations of children and adolescents with ID have demonstrated a three to four-fold increase in the prevalence of co-occurring mental disorders. The effect of age, sex, and severity (mild, moderate, severe, and profound) and socioeconomic status on prevalence is currently not understood. The new conceptualization of ID offers a developmentally better-informed psychobiological approach that can help distinguish the co-occurrence of mental disorders within the neurodevelopment section.

Naskar and Nath (2016) conducted a descriptive clinical study on intellectual disability in Northeastern India to gain insight on the socio demographic risk factors of a developing country. The purpose was to find the socio demographic variables of patients with ID, distribution of ID according to the types and correlation between types of ID and various socio demographic variables. One hundred patients fulfilling the diagnostic criteria of ID were taken from the outpatient and inpatient departments of psychiatry, Silchar Medical College and Hospital, Assam. The tools used for assessment were; Malin's Intelligence Scale for Children (MISC), Wechsler Adult Intelligence Scale (WAIS) and Vineland Social Maturity Scale (VSMS). A positive correlation was found among various socio demographic factors and the presence of ID. A strong association was observed between the classifications of ID and few demographical variables. In conclusion, the significant factors contributing to the development of ID are low parental education, delay in health care facilities, labor employment of parents with minimal remuneration and burden of belonging to lower economic status in the society.

Anne et al (2015) aimed to systematically evaluate the effectiveness of psychosocial intervention for children with a psychiatric disorder and mild intellectual disability to borderline mental functioning. The assessment for eligibility involved 1,409 unique reports, and the review ultimately included only 12 reports. Summary of the results and meta-analyses showed that the majority of studies suffer from multiple limitations and that methodological variation between studies is extensive.

Barros et al (2015) estimated the prevalence of genetic causes of intellectual disability in a birth cohort: a population-based study on children from a city in Southern Brazil. Children who showed poor performance in development and intelligence tests at the ages of 2 and 4 years were included. Out of 4,231 live born enrolled in the cohort, 214 children fulfilled the inclusion criteria. A diagnosis was established in approximately 90% of the children. Genetic causes were determined in 31 children, and 19 cases remained unexplained even after extensive investigation. The overall prevalence of intellectual disability in this cohort due to genetic causes was 0.82%. Since this study was nested in a cohort, there were a large number of variables related to early childhood and the likelihood of information bias was minimized by collecting information with a short recall time. This study was not influenced by selection bias, allowing identification of intellectual disability and estimation of the prevalence of genetic causes in this population. It increased the possibility of providing appropriate management and genetic counselling.

Shanthi et al (2015) conducted a cross-sectional study on the prevalence of caregiver burden and psychiatric morbidity in primary caregivers of mentally retarded subjects. Sixty ID subjects met with inclusion criteria. Primary caregivers were assessed on Zairt Burden Scale, General Health Questionnaire (GHQ-12), Mini-International Neuropsychiatry Interview and Modified Kuppuswamy Scale. Socio-demographic details were entered on Intake Performa. The IQ assessment was done using Bhatia’s Battery. There was a statistically significant association between physical illness and burden (p=0.00001). There was a negative correlation between caregiver burden and IQ (p=0.000169). There was a weak positive correlation between GHQ and burden (p=0.752313). Medical services offered to mentally retarded should, therefore, move from individual to family level.

Lakhan (2014) analyzed behavioural management in children with intellectual disabilities in a resource-poor setting in Barwani, India. It was done on 104 children between the ages of 3 and 18 years, who received interventions for behavioural problems in a clinical or community setting. The Behavioural Assessment Scale for Indian Children with Mental Retardation (BASIC-MR) was used to study the subjects before and after behavioural problems. The baseline and post-intervention scores were analyzed using the following statistical techniques: Wilcoxon matched-pairs signed-rank test for the efficacy of the intervention and chi-square for group differences. The results demonstrated behavioural improvements across all behaviour domains ($p<0.05$). Levels of improvement varied for children with different severities of id ($p=0.001$) and between children who did not have multiple disabilities ($p=0.011$).

Lakhan (2013) determined the coexistence of psychiatric disorders and intellectual disability in children aged 3-18 years in the Barwani district, India, focusing on the prevalence. A total of 262 children with ID were evaluated for psychiatric disorders using the Diagnostic Criteria outlined in the International Classification of Diseases (ICD-10). The prevalence of psychiatric disorders was statistically higher in severe intellectually disabled children ($IQ \leq 49$) than mild intellectually disabled children ($IQ \geq 50$).

Langdon et al (2013) evaluated the psychological therapies for people with intellectual disabilities. A systematic review and meta-analysis on the efficacy of psychological treatments for people with intellectual disabilities (ID) was carried out. A comprehensive literature search identified 143 intervention studies. Twenty-two trials were eligible for review, and 14 of those were subsequently included in the meta-analysis. Many studies did not include adequate information about their participants, especially the nature of their ID. Information about the masked assessment and therapy fidelity was also lacking. The meta-analysis yielded an overall moderate between-group effect size, $g=.682$, while group-based interventions had a moderate but smaller treatment effect than individual-based interventions. Cognitive-Behaviour Therapy (CBT) was effective for both anger and depression, while interventions aimed at improving interpersonal functioning were not powerful. When CBT was excluded, there was insufficient evidence regarding the efficacy of other psychological therapies that are intended to treat mental health problems in children and young people with ID. Adults with ID and concurrent mental health problems appear to benefit from psychological therapies.

Kumar et al (2010) studied the etiology of intellectual disability in pediatric outpatients in Northern India**;** the study was conducted for one year. A total of 122 children (84 males and 38 females) were enrolled in a cross-sectional analytic study. A definite etiology could be assigned in 66 children (17 prenatal, 38 perinatal/neonatal, and 11 post neonatal). Factors associated with reaching a conclusive diagnosis included younger age at presentation, presence of seizures, microcephaly, adverse neonatal events, and abnormal motor signs. Clinical history and examination gave important clues to etiology in 89 (72.9%) patients. Neuro-imaging was abnormal in 91 out of 114 children. The interpretation was perinatal/neonatal causes are the factors of Intellectual Disability in India, stating that the majority of cases seen were preventable.

Sudhakar et al (2010) attempted a case-control study on the risk factors of mental retardation from an urban area of north coastal Andhra Pradesh. The objective was to find the relationship between genetic demography and blood group markers in mentally retarded school children in Vishakhapatnam. The research design included a control group. Socio-demographic variables, consumption of drugs, gestation period, nature of delivery, pre-post-natal histories incompatibility played an essential role in the birth of children with low IQ. The study concluded that the menarcheal age of mothers, paternal age, smoking, gestational period and nature of delivery significantly increased the risk of mental retardation in the offspring.

Kumar et al (2009) stated that the social development of children with mental retardation has implications for prognosis. The study evaluated whether the Social Maturity Scale alone can reflect on the social maturity, intellectual level and consequent adjustment in family and society of children with mental retardation. Thirty-five mentally retarded children were administered on the Vineland Social Maturity Scale and Stanford Binet Intelligence Scale. It was found that there was a significant relationship between the measures of Social Maturity Scale and the IQ of the subjects. Further, it was also found that with increasing severity of retardation, social development also decreased, and age did not have any effect on social development.

Anxiety

Dagnan, Jackson and Eastlake (2018) investigated on a systematic review of cognitive-behavioural therapy for anxiety in adults with intellectual disabilities. Anxiety disorders have a high prevalence in people with intellectual disabilities. In populations without intellectual disabilities, cognitive behavioural therapy is the first line of psychological therapy for these presentations. There is no existing review on the range of methods and outcomes from intervention studies in this area. A systematic review was carried out following the guidance in the Cochrane Handbook for systematic reviews of interventions. Nineteen studies were identified. The majority of reports were descriptive case studies. The most frequently described presentations were non-specific anxiety disorders and post-traumatic stress disorder. The most commonly described cognitive techniques were psycho-education and interventions directly aimed at thoughts and beliefs. Most studies reported positive outcomes, although the better-controlled studies tended to report less comprehensive impacts. A range of presentations has been described although the area is still at a primarily descriptive stage. The intervention structures and approaches that require further research were also discussed.

Maiano et al (2018) studied the prevalence of anxiety and depressive disorders among youth with intellectual disabilities. The purpose of this meta-analytic study was to determine the pooled prevalence estimates of anxiety and depressive disorders among children and adolescents with intellectual disabilities (ID) and to assess the extent to which these prevalence rates differed according to studies' characteristics. A systematic literature search was performed in nine databases and 21 studies, published between 1975 and 2015, met the inclusion criteria. The resulting pooled prevalence estimates of combined subtypes of anxiety and depressive disorders were respectively (a) 5.4% and 2.8% across samples; (b) 1.2% and 0.03% among children; and (c) 7.9% and 1.4% among adolescents. Pooled prevalence estimates for specific subtypes of anxiety disorders ranged from (a) 0.2% to 11.5% across samples; (b) 0.7% to 17.6% among children; and (c) 0.6% to 19.8% among adolescents. Pooled prevalence estimates of dysthymic disorder and major depressive disorder were respectively (a) 3.4% and 2.5% across samples; (b) 2.1% and 3.2% among children; and (c) 6.9% and 5.7% among adolescents. Finally, subgroup analyses showed significant variations in the pooled prevalence estimates of combined subtypes of anxiety disorders, obsessive-compulsive disorder, and generalized anxiety disorder; and combined subtypes of depressive disorders. Findings provide recommendations for future studies investigating psychological disorders among youth with ID, as well as how clinicians and policymakers can improve diagnostic practices and support the youth with ID.

Kang et al (2017) researched the impact of anxiety and depression on physical health conditions and disability in an elderly Korean population. This study aimed to investigate the longitudinal effects of anxiety, depression, and co morbidity on physical disorders and disability in an elderly Korean population. In total, 1,204 community-dwelling elders were evaluated at baseline, and of these, 909 (75%) were re-assessed two years later. Anxiety and depression were identified at baseline using questions from the community version of the Geriatric Mental State Diagnostic Schedule (GMS-B3). Participants were assessed for functional disability and 11 physical disorders both at baseline and at follow-up. Anxiety alone was associated with the incidence of heart disease, depression alone with the prevalence of asthma, and co morbid anxiety and depression with an incidence of eyesight problem, persistent cough, asthma, hypertension, heart disease, and gastrointestinal problems. Co morbid anxiety and depression were associated with an increase in the number of physical disorders and the degree of disability during the two-year follow-up, compared to anxiety or depression alone or the absence of anxiety or depression. Future study is required to determine whether interventions aimed at these disorders can mitigate their impacts.

Dhwanit et al (2014) conducted a study on anxiety and depression in caregivers of intellectually disabled children. Intellectual disability is a permanent condition, unlike many other diseases. It is a highly disabling condition. This is an attempt to study the negative impact on caregivers to help and manage this problem in the best possible way. The prevalence, influence of various socio-demographic variables and its clinical correlation with anxiety and depression in caregivers of intellectually disabled children, were studied. The study was conducted at the outpatient department (OPD) of psychiatry, Govt. Hospital, Jamnagar, in Gujarat. The caregivers who came with their intellectually disabled child for certification were recruited. Using specially designed semi-structured socio-demographic and clinical data sheets, information was collected about intellectually disabled children and their caregivers. Parents fulfilling inclusion and exclusion criteria consenting for the study were selected, and Zung's Self-Rating Anxiety and Depression Scale were used. The prevalence of anxiety was 57%, and depression was 63%. Earning status and type of family has been significantly associated with high anxiety scores, and other socio-demographic variables, i.e. Gender, religion, education, and marital status were not related to high anxiety scores among caregivers. Out of all socio-demographic variables, only the age of caregivers was significantly associated with elevated depression scores. The study shows a high anxiety score and depression score among caregivers of intellectually disabled children.

Julie et al (2010) examined the anxiety, depression, and disability across the lifespan: the relationship between stress, depressive symptoms, and physical disability was carried out both independently and in combination. The authors explored the relationship between anxiety, depression and physical disability after controlling the demographic and health variables in a sample of 374 adults aged 18-94 years. Results indicated that anxiety, depression in addition to co-morbid anxiety and depression are associated with higher levels of disability, after controlling the factors such as age, gender, income, self-rated health, number of medical conditions and number of physician visits in the past year. These findings suggested that physicians working with older adults should assess and treat anxiety as well as depressive symptoms.

Judith et al (2009) investigated a cognitive-behavioural group treatment for anxiety symptoms in children with High Functioning Autism Spectrum Disorders: a pilot study stated that individuals with Autism Spectrum Disorders (ASD) are at an increased risk for developing anxiety disorders relative to children without ASD and those with other Developmental Disabilities. Thirty-three children between 7 and 14 years with high functioning ASD and their parents participated in an original annualized cognitive-behavioural group treatment aimed at reducing the severity of anxiety symptoms. Parent-child dyads entered into either active treatment condition or wait-list control conditions. The results showed a significant reduction in parent reports of anxiety symptoms after the delivery of group treatment, compared with the wait-list control conditions. The findings of the study were promising, particularly in the light of the high rates of co-morbidity between ASD and anxiety.

Behaviour

Ghoti (2016) quantified that behaviour modification could improve the self-confidence of disabled students. The investigation was on disabled school students aged 15 to 20 years in Aurangabad. The Self-Confidence Inventory was used as the assessment tool. The proposed statistical procedure was descriptive statistics with mean, standard deviation and t-test. The study concluded that the self-confidence of disabled students could be improved using behaviour modification.

Baker et al (2015) associated disruptive behaviour disorders in adolescents with ASD: comparisons were made on youth with intellectual disability or typical cognitive development. A disruptive behaviour diagnosis was conducted in a sample of 13-year-old adolescents with ASD (n=58), intellectual disability (id; n-40) and typical cognitive development (td; n=100). The tools used were the Child Behaviour Checklist and the Diagnostic Interview Schedule for children (DISC). The occurrence of co morbid disruptive behaviour disorders was unrelated to the intelligent quotient indicating higher intelligence remained as an unproductive factor for disruptive behaviour disorders in ASD. Youths with ASD had significantly higher rates of disruptive behaviour than ID youth though not generally higher in youth with ID. The implications are planning for school-based interventions, particularly for high-functioning children with ASD to be fully included in general education.

Hummer et al (2015) examined the relationship of brain structure to age and executive functioning in adolescent Disruptive Behaviour Disorder. Thirty-three individuals aged 13-17 years with DBH along with a matched control sample, completed neuropsychological testing and underwent magnetic resonance imaging (MRI) to measure grey matter volume and micro structural white matter properties. The data proposed that youth with DBD have altered brain development compared with typically developing youth. The abnormal maturation of the anterior cingulated and front parietal tracts during adolescence may contribute to the persistence of behavioural deficits in teens with a DBD.

Brown et al (2013) studied individuals with intellectual disabilities and challenging behaviours with adapted dialectical behaviour therapy. This longitudinal single-group pilot study examined whether individuals with impaired mental functioning would show reductions in CB while receiving standard DBT individual therapy was used in combination with the Skills System (DBT-SS). Forty adults with developmental disabilities (most of whom also had intellectual disabilities) and CBS, including histories of aggression, self-injury, sexual offending, or other CB, participated in this study. Changes in their behaviours were monitored over 4 years while they were undergoing the DBT-SS. Significant reductions in CBS were observed during the 4 years. These findings suggest that modified DBT holds promise for effectively treating individuals with intellectual and developmental disabilities.

Poon (2012) aimed to understand challenging behaviours among children with autism spectrum disorders and multiple disabilities attending special schools in Singapore. The primary concern was to understand the profile and the factors that create an impact on challenging behaviours. The sample included 322 teachers, 132 children with ASD and MD, respectively. The teachers completed the Developmental Behaviour Checklist, Teacher Version (DBC-T; Einfeld and Tonge, 1995). The findings suggested that children with ASD exhibit elevated levels of challenging behaviour in all areas, relative to children with MD. Multiple regression analyses also indicated that the diagnostic category was associated with all aspects of challenging behaviour measured by the DBC-T. Besides, age was associated only with disruptive behaviour. Theoretical and practical implications were discussed.

Social skills

Omigbodun (2016) investigated the effects of a classroom-based intervention on the social skills of pupils with intellectual disabilities in southwest Nigeria. Thirty pupils with mild to moderate range of intellectual disability attending a special school were the subjects. The participants' level of social skills was assessed with the Matson evaluation of social skills for individuals with severe retardation (messier) at baseline and immediately after the intervention. Paired t-test, Wilcoxon Signed-Rank Test, Mann-Whitney test, and Kruskal-Wallis test were used to assess the pre-and post-intervention changes in social skills scores. Analysis of changes in social skills across socio-demographic variables is $p<0.05$ after the intervention 20% reduction was observed in the number of participants with severe social skills impairment category and a 13.3% increase in the number of participants in the minimal social skills category. The social skills of the pupils with intellectual disabilities who participated in the study improved significantly during the 8 weeks of intervention.

Golzari et al (2015) researched the effects of social stories intervention on the social skills of male students with autism spectrum disorder (ASD). Thirty male students 6-12 years with ASD were selected through convenience sampling and randomly assigned to an experimental group (n=15) and a control group (n=15). The Social Skills of both groups were assessed in both pre-test and post-test using Stone and Colleagues' Social Skills Scale (which included subscales for understanding/ perspective-testing, initiating interactions, responding to interactions and maintaining interactions). The experimental group participated in 16 sessions of social stories training, while the control group did not. Overall, the results showed that the intervention improved the social skills of the children with ASD in the experimental group compared to the control group. The effects of the intervention were most evident in the subscales for understanding perspective-testing, initiating interactions and maintaining interactions with others. The intervention had no impact on the subscale, assessing the ability to respond to others. The study findings emphasized the effectiveness of the intervention in improving the social skills of children with ASD, which may be used by teachers, parents or professionals who work with these children.

Aruna (2013) described the social skills of children with an intellectual disability attending a home-based program and children attending regular special schools: a comparative study was undertaken to find out the differences in achievement in social skills among children with intellectual disability based on their schooling. The sample consisted of 150 children between the ages of 5 to 10 years. Among the 150 children, 75 were educated at home and 75 were in special schools, all residing in the twin cities of Hyderabad and Secunderabad. To assess social skills, a Social Skills Rating Scale (SSRS) was developed by the researcher. It consisted of six domains- attachment, interaction, initiation, cooperation, self-management, and social play. The findings of the study indicated a significant difference in the achievement of social skills in children attending special schools compared to children attending home-based programs. The further domain-wise comparison revealed a high achievement in the interaction domain and a low achievement in the initiation domain in both groups of children. The findings of the study indicated the need for more emphasis on training of social skills of children attending home-based programs.

David et al (2012) examined social inclusion: teachers as facilitators in peer acceptance of students with disabilities in the regular classroom in Tamil Nadu. The focus was on the impact of classroom teachers' attitude to the inclusive education, teacher's self-efficiency and classroom practices on the social status of the student with disabilities. The questionnaire, interviews, and observations were employed to gather data. The data analyses included descriptive statistics and regression analyses. Findings showed that in the context of the intergroup contact theory, teacher's classroom practice influenced the social status of students with disabilities in a regular classroom and that it was similar to the social status of their peers without limitations. The implications of these findings are, teachers can make a difference in social inclusion experiences of students allowing, better school outcomes that are associated with increased peer interaction among students with and without disabilities.

Hartley et al (2009) scrutinized the nonverbal social skills of adults with mild intellectual disability diagnosed with depression. The concern was nonverbal social skills of 18 adults with mild ID diagnosed with depression and a matched sample of adults with Mild ID without depression. Nonverbal social skills were coded from videotapes of actual social interactions. Results indicate that adults with mild ID diagnosed with depression shows a profile of maladaptive nonverbal social skills including limited body movement, a restricted range of facial expressions, infrequent smiling, speaking in a flat and quiet voice, and taking a long time to respond to the questions or comments of a social partner. Findings from this study have implications for enhancing the early detection, diagnosis, and treatments for depression in an id population.

Self-esteem

Augestad (2017) summarized the self-concept and self-esteem among children and young adults with visual impairment: a systematic review of current scientific knowledge relating to self-concept and self-esteem among children and young adolescents with Visual Impairment (VI). A systematic re-examination was conducted on articles published between 1998 and 2016. A total of 26 publications, representing 15 countries, met the inclusion criteria and 24 studies used a cross-sectional design. Some studies found that the age and degree of vision loss influenced perceived self-esteem. Independence in mobility, parenting style, social support, and friendship was reported as important for children with VI to enhance their self-concept and self-esteem.

Khayat (2017) analyzed the impact of cognitive behaviour counselling on the self-esteem of Visually Impaired subjects. The samples comprised of 8 visually impaired female students from a university in Jeddah, Saudi Arabia. The age group was from 18-25 years. They were assessed using the Rosenberg Self-Esteem Scale followed by their participation in the intervention program. The program was scheduled for two sessions per week in February and March 2017. The post-test was assessed after the intervention and the follow-up was conducted two months later. The results showed differences in the level of self-esteem among the group, emphasizing the value of the cognitive behaviour counselling intervention program. Improving the self-esteem of visually impaired subjects helps in integrating them into society.

Mushtaq et al (2016) investigated self-esteem, anxiety, depression, and stress among physically disabled people. The study explored the psychological stressors, mental health, and self-image of the physically challenged people. Any physical disability leads to feelings of inadequacy, which results in feelings of depression, anxiety and low levels of tolerance. Fifty physically challenged and fifty normal women and men were taken for the study. It was found that physically disabled people have a low level of self-esteem and a high level of depression, stress, and anxiety in comparison to a normal population.

Mahadevi et al (2015) experimented with the effect of teaching stress management skills on self-esteem and behavioural adjustment in people with somatomotor- physical disabilities in iran. Pre-test post-test control group design was applied in the current research. Forty girls were selected using convenience sampling and they were divided into an experimental and control group. Three tools were used for data collection. Demography Questionnaire, Rosenberg Self-Esteem Scale and Behaviour Adjustment Questionnaire were used. After the pre-assessment, the experimental group underwent ten sessions of Stress Management Training. Both the groups were assessed after the intervention and the data collected were statistically analyzed. Stress management training was proved beneficial in improving self-esteem and behavioural adjustment in this particular sample. The study concluded that stress management training is highly efficient especially in the form of group intervention.

Anuradha and Lakshmi (2014) emphasized on the self-esteem among physically and visually disabled late adolescents. A marginalized group needed special attention when entered into adulthood. The study aimed to find out the level of self-esteem among physically and visually disabled late adolescents and to know the gender difference in self-esteem among them. A quantitative comparative research design with sample size 120, consisting of 60 physically disabled and 60 visually impaired male and female were considered. Rosenberg's Self-Esteem Scale was used, and the respondents were asked to reflect their feelings. T-test was planned for the analysis of the data. Results revealed that there was a significant difference in self-esteem between physically and visually disabled late adolescents, with visually disabled late adolescents having more self-esteem.

Saban and Arikan (2013) determined the self-esteem and anxiety of children with and without mentally retarded siblings. The sample included 227 healthy children (age group 15-18): 108 of them had a mentally retarded sibling, and 119 of them do not have a mentally retarded sibling. Personal information form, Rosenberg Self-Esteem Scale, and Trait Anxiety Scale were used. It was found that the trait anxiety of children aged 17-18 years with mentally retarded sibling was higher than that of the children without mentally retarded siblings. It was observed that the self-esteem of children with a mentally retarded sibling was not affected by the handicap of their siblings. The study concluded that the scores in trait anxiety and self-esteem in both groups were not significantly different; scores of trait anxiety of children with mentally disabled siblings were higher in comparison. The anxiety of children with and without mentally retarded siblings increased as the self-esteem of these children decreased.

Abraham (2010) conducted a study on self-esteem and the social relations of adolescents with learning disabilities. The samples were from an alternative school in Bangalore. The size was 50, including both genders with purposive sampling. Adolescents 11-18 years were included. The students' level of Self-Esteem was assessed by Rosenberg’s (1965) 10 items scale. The scale was rated on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). The researcher reverse-scored 5 items that was negative so that the higher score indicates a higher level of self-esteem. A pilot study was conducted among 10 percent of the sample, and the necessary modifications were made. The statistical analysis was done on the data. There was a less significant relationship between respondent's self-esteem. The study indicated that adolescents with LD had a better social relationship. A multidisciplinary approach is required to initiate appropriate interventions in building self-esteem and teaching a learning-disabled child.

On exploring the previous related reviews pertaining to the study from a wide range of sources facilitated the researcher to plan the methodology in the following chapter.