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Prevalence of Learning Disability and Emotional Problems among Children: An Overview of Emotion and Creativity Focused Interventions

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Abstract

Learning disability (LD) among school going children affects their academic and social life. Children with LD struggle in their learning process. Delay in identification and inadequate remedial and emotional support derail their overall development. In India, school based psychological assessment and services are at infancy stage. Teachers are not equipped to meet the special needs of such children. This review article aims to describe the prevalence of LD and the psychological issues faced by the children with LD. This article also gives an overview of interventions provided to children with LD. The article is based on a systematic review of available literature, published in peer reviewed and indexed journals during 2000-2017. Articles for review were identified from following data base; EBSCO, PUBMED, PROQUEST, JSTOR, SAGE, TAYLOR AND FRANCIS and GOOGLE SCHOLAR. Based on selection criteria, 56 articles were considered for systematic review. Findings indicate that the Prevalence of LD in India has been identified as 1% to 19% among school going children. Review of the prevalence articles reported the mean of prevalence as 10%. Children with learning disability are vulnerable to low self-esteem, anxiety and depression. Though few intervention packages are developed for remedial training and to enhance the skills and self-esteem, those programmes are not used appropriately in India. Children with LD need more focused and specialized care and nurturing exposure to ensure their emotional growth and wellbeing.

Keywords: learning disability, prevalence of LD, impact of LD, emotional problems, interventions for LD

Introduction:

Learning associated difficulties are an important area of research in India among school and educational psychologists. In this context, understanding recent developments in the area of learning disability (LD) might help to conceptualize more comprehensive therapeutic interventions for children with learning disability. Studies in this area mainly focused on prevalence, impact, comorbidity, biopsychosocial risk factors and attitudes and experiences of parents, and teachers. Some studies specifically looked into problems and interventions associated with types of LD, mainly dyslexia, dyscalculia and dysgraphia. Many such studies followed the definition of LD as declared by American Psychological Association (APA). According to APA, learning disability (LD) is defined as persistent difficulty in academics and learning, mathematical, reading and writing ability as measured by individually administered standardized tests, is substantially below expected given the person's chronological age, measured intelligence and age appropriate education. These disturbances significantly interfere with academic achievement or activities of daily living that require mathematical, reading and writing ability (American Psychological Association, 2013). This review article comprehensively presents the prevalence of LD in India, diagnostic practices, provisions for children with LD, psychological impact of LD and evidence-based interventions provided to children with LD.

Learning Disability: Diagnostic Practices in India.

In India, the children with poor academic performance are evaluated initially for understanding environmental factors and physical conditions affecting the learning, if there are no positive findings, then intelligence tests (WISC- Weschler intelligence scale for children, MISIC- Mallins intelligence scale for children, BKT- Binet Kamath test of intelligence, Bhatia's intelligence test, CPM- Colour progressive matrices or SPM- standard progressive matrices) are given to rule out the children's low intelligence. If the child has an average or above average intelligence then also the performance in academics is not up to the age and grade level, NIMHANS index of specific learning disability is used to assess the LD. This battery has two levels, level 1 (5 to 7 years) and level 2 (8 to 12 years). When the child performs below two grade level to their actual grade, then the child is considered to have mild LD and if it is below four grade levels then severe learning disability. Curriculum Based Assessment is a challenging task, since in India students follow various syllabuses such as State Syllabus, Indian Certificate for Secondary Education (ICSE), Central Board of Secondary Education (CBSE) and other International Syllabuses. Poverty and Parenting styles also directly affect the learning process. Current Assessment system is not sensitive towards familial and school environment factors. Recent development in developmental psychology, indicate the unique learning needs and the styles of children. A single framework to assess the level of learning will lead to labeling than to comprehensive child friendly therapeutic interventions. Children with LD need support and guidance to build their self esteem, even assessment has to set that as a goal. Inadequate remedial facilities delay further interventions after the assessment and diagnosis.

Provisions for Continuing Education.

Children with LD received special provisions such as extra time to write the examination, use of calculators, use of scribe, exemptions from spelling mistakes and exemption from second language in 1996, by the government of Maharashtra, India. Initially State syllabus schools provided these provisions, later ICSE and CBSE boards also granted same provisions. Slowly other states also started to encourage children with LD with exemptions and supportive provisions. But schools do not have adequate facilities to cater the learning needs of children with LD. Schools need more trained staff, materials and infrastructure to provide support to children with LD. Individualized Educational Plan (IEP) is prepared for each child, considering the uniqueness of their problems. The IEP consists of the details of the difficulty, the training and outcome of the training. National Open School examination is another step by government of India to support Children with LD. In this system, children can complete their secondary education, with more flexible manner. The child need not write all the subjects at a time. (Bhandari & Goyal, 2004)

In-depth understanding on the impact of LD on children and the scope for psychological interventions would help school-based psychologists to address the developmental and learning struggle of the Children. The review

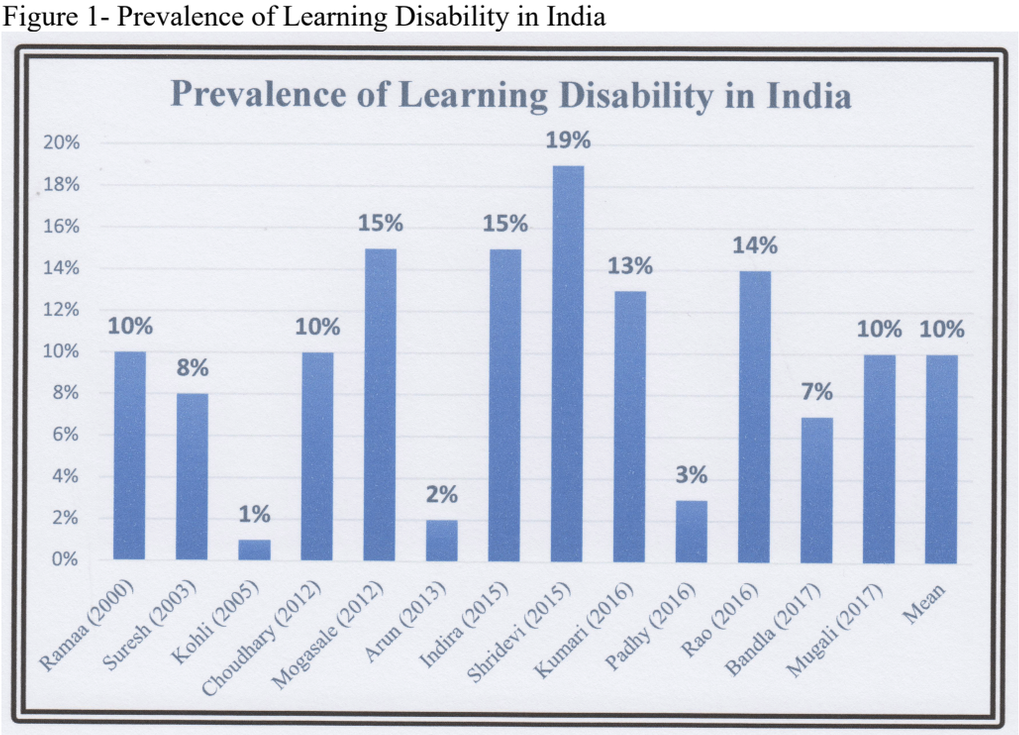
attempts to bring a paradigm shift from diagnosis-centric to child-centric approaches would reduce the emotional problems of the children and would enhance the confidence of parents. Insight into nature, intensity and prevalence of mental health problems among the children with LD would help parents and teachers to adopt preventive measures. Exploring set of strategies supported with research, to nurture the competency of children with LD would give insights into other comprehensive interventions. Hence this review article would address above mentioned issues of children with LD. Some of the causes of Learning disability might be neurological damage: that can occur due to prenatal, natal and postnatal periods. Factors such as prolonged labour, premature birth, birth complications, maternal age, use of drugs and alcohol, maternal-foetal blood incompatibility, maternal endocrine disorders, Rh-factor, cigarette smoking and low birth weight; Maturational delay: Delayed development of motor skills, slow maturation of language skills, right-left confusion and visual motor problems; Genetic factors; biochemical factors; nutritional deficiencies and environmental factors.

Method

The article is based on a systematic review of available literature, published in peer reviewed and indexed journals during 2000-2017. Articles for review were identified from following data base; EBSCO, PUBMED, PROQUEST, JSTOR, SAGE, TAYLOR AND FRANCIS and GOOGLE SCHOLAR. Following key words were used to search articles; Learning Disability, Prevalence of Learning Disability, Children with Learning Disability, Learning disability and Self-Esteem, Learning Disability and Anxiety, Learning Disability and Depression, Emotional Problems Faced by Children with Learning Disability, Interventions for Learning Disability, and Remedial Training for Learning Disability.

Based on selection criteria, 56 articles were considered for systematic review.

Figure 1- Prevalence of Learning Disability in India



As mentioned in Figure: 1, a study from Rajasthan reported learning disability among 10% of students who were studying in class 3 and 5 (Choudhary, 2012). Ramaa (2000) also reported that 10% of Indian students had learning disability. Similarly, a study from Karnataka reported that 15% of school children of 8 to 11 years had specific learning disabilities (Mogasale, Patil, Patil, & Mogasale, 2012). To worsen the situation, such children experience a lot of psychological disturbances. In a school-based study in Chandigarh the prevalence of LD

was shown as 2% (Arun, Chavan, Bhargava, Sharma, & Kaur, 2013). A hospital-based study in north India in an outpatient tertiary clinic found the prevalence of LD as 1 % (Kohli, Malhotra, Mohanty, Khehra, & Kaur, 2005). Survey conducted on the prevalence of LD in a south Indian city reported 8% (Suresh & Sebastian 2003). Study conducted in Mysore among primary and upper primary children of government school reported the prevalence of dyslexia as 14% (Rao et al, 2016). From Andhra Pradesh, a study found the prevalence of Specific learning disability as 7% (Bandla, Mandadi, & Bhogaraju, 2017). In a study done among 30 private school children of 3 districts in Telangana the prevalence of learning disability was 15% among fifth grade children. (Indira, &Vijayan, 2015). A study done in Warangal, India among children with age group of six to 13years the prevalence of learning disabilities was found to be 19% (Sridevi, George, Sriveni, & Rangaswamy, 2015). Kumari and Bakriya (2016) conducted a cross-sectional study over a period of 1-year from July 2013 to June 2014 in Kerala, and reported the prevalence of learning disability as 13%. Mugali, Patil, Gosavi, Pattanshetti, Kovvuri, and Deepthi (2017) screened 1483 children studying in three schools of Belagavi city of Karnataka, aged between 6 and 12 years. They identified 312 children with poor academic performance. Estimated prevalence of specific learning disorder among the population was 10 % in the study. The estimated mean of the prevalence reported in these studies is 10% in India.

Psychological problems of the children with LD

Compared to the peer group without LD, children with LD have four times more mental health problems (Wilson, 2004; Peleg, 2009). When 6% of mainstream population experience depression, around 20% of learning disability population experience depression (Sikabafori, & Anupama, 2012; Emamjohmeh, & Bahrami, 2015). Children with Learning Disability have been vulnerable to depression, anxiety, low self-esteem, behavioural disorders and suicidal behaviour (Oladelea, & Oladeleb 2016; Wilson, Armstrong, Furrie, & Walcot, 2009). Children with Learning Disability had higher rate of suicide ideation and attempts which was also related to school dropout (Daniel, Walsh, Goldston, Arnold, Reboussin, & Wood, 2006;). Around 21-40% of high school girls of Lahore with learning disability had co-existing depression and anxiety (Ashraf, & Najam, 2015). In a study conducted in Mumbai city, Maharashtra, among school going English medium school children, 8 to 15 years with LD, the newly diagnosed with specific LD, children had higher rates of anxiety than the normal peers (Thakkar, Karande, Bala, Sant, Gogtay, Sholapurwala, 2015). Around 40-60% of children with dyslexia had depression and anxiety among children with LD (Korne, 2010). Preadolescent Children with LD had higher rates of depression than non-learning disabled (Palladino, Poli, Masi, & Marcheschi, 2000). Children with dyslexia had more depression and anxiety compared to children without dyslexia (Mugnaini, Lassi, Malfa, Florence, 2009).

The higher rate of social anxiety is showed among people with LD, than normal people (Melfsen, Walitza, & Warnke, 2006). Among adolescent children with LD, a study found that 21-40% of depression and anxiety co-existed, reported more co-existed among girls (Ashraf & Najam, 2015). Learning disability is associated with low level of self-esteem and academic self-concept. The self-esteem of children with LD is affected due to their poor academic performance (Klassen, & Lynch, 2007). As the students get older, the depression and low self-esteem which are commonly present in these children increases and leads to severe emotional problems (Siegel, 2003). Impulsivity, social skills deficits, and higher rates of suicide are the other impacts of LD (Bender, Rosenkrans, & Crane, 1999).

Reasons for Psychological Impact

Academic failure is the main factor that is leading to low self-esteem in children with LD compared to Children without LD. Since they face failure, even after putting efforts will reduce their self-esteem (Zeleke, 2004). Such children experience less acceptance among peer group and bullying and develop low self-esteem and which leads to depression. Children with LD also have social skill deficit (Humphrey & Mullins, 2002). The children with LD are frequently teased and have less friends and due to stigma associated with LD and they are bullied (Martinez & Semrud-Clikerman, 2004; Mishna, 2003). Children with LD by peer victimization can develop

psychological issues like anxiety and adjustment difficulties. As peer group reject children with LD they internalize these problems leading to loneliness and depression (Mishna, 2003; Weiner, 2004).

The parenting styles like authoritarian and permissive kind had an influence on anxiety of children with LD. Such children were found to be more anxious. Over restrictions, punishment, and demanding rules make them feel more anxious. In permissive parenting, the child is left to do anything and everything the child wants to do. But if the child is not guided, miss opportunity to progress in life (Ranjana & Moudgil, 2017).

Feedback plays a great role in self-esteem of dyslexics. Negative feedback leads to low self -esteem. Positive feedback leads to high self-esteem. The children should be informed about their positives through feedback. Verbal or material reward will encourage children with LD to improve their strengths and to improve their self-esteem (Reid & Gavin, 2011). Children with LD frequently show behavioral inhibition, anxiety and maladaptive cognition. As studies show that the children with learning disability has social skill deficit they have negative thoughts and limited social engagement (Al-Yagon & Mikulincer, 2004). Apprehensive temperament is exhibited by few children with LD (Margalit & Al-Yagon, 2002), which leads to school frustration, limited flexibility, poor adaptability, anxiety and depression (Teglasi, Cohn, & Meshbesher, 2004).
Interventions for children with Learning Disability.

The children with LD need support to handle their academics as well as emotional problems. For the academic aspect, remedial training is helpful to improve academic performance and for the social skill deficit, social skills training programmes and life skill training are used. The children with LD face social skill deficit due to their academic failures which leads to difficulty in social situations. Most of the IEPs (Individualized Education Plans) focus on the academic related social skills (Bender & Wall, 1994). PREP (PASS Reading Enhancement Program) and COGENT (Cognitive Training) which follows the PASS model have shown effectiveness to improve the reading skills, compared to the direct instruction method (Mahapatra, 2015). COGENT plays a role in improving the reading skills of preschool children (Rodríguez, Gallart, Alvarez & Das, 2015).

Mindfulness mediation showed an improvement in academic performance, improving social skills reducing anxiety (Beauchemin, Hutchins, & Patterson, 2008). In a review study from1990 to 2014 CBT has shown as a tool to reduce the depression of children with LD. Study also reported the efficacy of a training programme to prevent the difficulties with reading and improvement in self-esteem (Jennings, & Hewitt, 2015). CBT has been successful to decrease anger, anxiety, depression and challenging behaviours. CBT has a valuable influence on children with LD. In a study on anxiety management group using CBT on 6 children with mild to moderate LD for 12 weeks showed significant reduction in anxiety and a qualitative analysis showed improvement in coping strategy (Douglass, Palmer, & O'Connor, 2007).

Creative Training Programmes. In India the education system gives more importance to their marks, less importance given to the skill development. Each child will have a specific skill and that can be enhanced further. Parents and teachers expect children to join few professions and push children to such fields without knowing their wards' competencies and aptitudes. As parents are behind their social status and to get acceptance from others, they attempt to achieve their unmet dreams through their children. In this context, the application of creative training programmes for children with LD are explored in following section. As studies have shown that creativity can be nurtured and these programmes which have been done for normal population can be used for children with LD. Studies have shown that self-esteem of children can be improved through creative activities. Some of the such training programmes are briefly reviewed here.

Cognitive Research Trust Programme. Al-Zyoudi, (2007) used Cognitive Research Trust programme (CoRT) to enhance thinking skills including creative thinking and critical thinking. Children benefited to express their ideas and to recognize their potentials. Two components of CoRT programme breadth and organisation was used for 14 weeks on children with LD. CoRT programme showed a significant improvement in creative skills of children with LD. The findings have been corroborated by other researchers (Monahan, 2000; Renzulli, 2003; Winebrenner, 2003; Davis & Rimm, 2004; De Bono, 2004; Kattab & Al Hadidi, 2008).

Melhem & Isa (2013) also used CoRT programme (De Bono, 2004) for 6th grade children who had LD in Mathematics. The sample consisted of 93 students and training were given for 2 periods a week for 16 weeks. The results showed that the programme had a significant effect on critical and Creative thinking of children with LD.

Eureka' Imaginative Training. Eureka' imaginative training, aimed to enhance the creativity of children. Programme help children to attention, memory, creative thinking and self-beliefs (Karwowski, 2014). This programme nurtures language skill and motivation. This programme was initiated for children aged from five to nine.

Creativity Compass. Creativity Compass (Dziedziewicz, & Karwowski, 2015), the main goal of this programme is stimulating child's creativity. This programme aims to s develop the creative imagination of children. Thus, they equip with intercultural competence which includes intercultural sensitivity and cultural self-awareness.

Future Problem-Solving Program. Future Problem-Solving Program International (FPSPI) is a training program for creativity enhancement (Treffinger, Selby, & Crumel, 2012). The program aims to promote creativity, cognitive skills, emotional and social competencies. This training is structured to promote creativity among children and young people. Morais, Jesus, Azevedo, Araújo and Viseu (2015) used the intervention programme FPSI (Future problem solving) to see its influence on creativity. The participants were 77 children in experimental group and 78 children in control group. 7th to 12th grades children aged 12 to 17 years attending the Portuguese school. The programme was for four months in weekly sessions. Representation of creativity and academic motivation was assessed on pre-and post-tests. As promotion of creativity in a great concern of present education settings this programme was found to have a significant influence on creative problem solving not only on cognitive level but also emotional level.

Purdue Creative Thinking Program. This program was developed by Feldhusen and his team (Feldhusen, 1983). This program consisted of 28 audio recorded sessions and each session was for 14 minutes. The program will enhance the various dimensions of creativity such as fluency, flexibility, originality, and elaboration.

MORCEGOS. Nogueria (2006) created a module MORCEGOS (Motivation, Originality, Reasoning, Curiosity, Elaboration, Generalization, Observation and Sensibility towards problems). The aim of the programme was to enhance the creativity of children of two groups. Group A consisted of gifted students (6-14 years) and Group B consisted of children with LD (12-16 years). The module was adapted based on Torrance test of creativity thinking (TTCT). The results showed that the both groups benefitted mainly on originality and fluency and positive effects on enjoyment and development.

Cooperative Creative Play Programme. This programme consisted of games which would help to improve communication, confidence, relationship and creativity. Sessions are planned in such a way to nurture cooperation, and sharing, through play-based activities. Garaigordobil and Berrueco (2011), they found this programme is useful to improve the creativity of school children. Torrance Test of Creative Thinking, Scale of creative behaviours and personality traits were the tools used. The results showed that programme stimulated verbal creativity in three area flexibility, originality and fluency and also graphic creativity in the areas of elaboration, originality and fluency. The programme significantly improved the creative behaviour and personality traits.

Conclusion

Along with remedial training, screening of mental health would decrease mental health problems in Children with LD. To reconstruct their life, they need support and care from parents, teachers and psychologists. As studies have reported, children with LD are vulnerable to low self-esteem. Comprehensive interventions such as CBT and Creativity Enhancement Programme will enhance the self-esteem of children with LD. This systematic review brought insights into emotional problems faced by children with LD. High prevalence of anxi-

ety and depression are raising concerns to parents and teachers. School counsellors would use integrated approaches to identify and to prevent emotional problems among children with LD.

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Contributors
First author has selected the studies for review. Second and third authors were part of conceptualization and the organization of the review article.

Conflict of Authors
Authors are not of any of the mentioned studies in this systematic review. We are not intended to promote specific interventions.

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