

A Comparative Research on Possibility of Onset of Bipolar Disorder among Physically Challenged and Normal Children

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ABSTRACT

Physical disability is a very common part of human society and it comes in different forms. In addition to the well-known negative effects of these disabilities on the development of a child, such as motor development, inability to perform in educational settings and inability to communicate properly, they also have an effect in other areas of development such as behavioural, social and emotional development. The current study explored the comparison of possibility of onset of bipolar disorder between physically challenged children with that of normal children based on the Child Bipolar Questionnaire (CBQ) and the different factors affecting it. In the given sample, the difference in the distribution of the scores between physically challenged children and normal children is not statistically significant. In addition, the type of physically disability is not a statistically significant factor in the possibility of onset of bipolar disorder. Furthermore, it is also found that the type of family of a physically challenged child has a significant impact on the possibility of onset of bipolar disorder.

Keywords: *Disability, children, physically challenged, psychological problems, Bipolar disorder, Mann-Whitney, Kruskal-wallis.*

The examination of the issue of physically challenging conditions has been, traditionally, through one of the following perspectives. 1. Medical and clinical approaches that focus on functional impairments. 2. Psychological approach with its orientation on psychological disturbances. 3. From an economic-vocational standpoint that stresses vocational limitation emanating from physical, intellectual or sensory impairments. 4. From systems analysis approach, which perceives the phenomenon of disability in systematic terms? 5. From a minority group perspective, which seeks to justify analogies between the disabled and other minorities 6. From the human rights paradigm, which views legal measures as constituting the fundamental framework by which the mechanism for equality of opportunity can be ensured (Karna, 2001). The present paper takes the second, of the above mentioned, approach towards the topic.

According to WHO, International Classification of Functional Disability (ICF) defined physical disability (Physically Challenged) as a state with remarkable defect, limitation or

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inability of certain organs or processes of the body, which create hurdle in carrying out normal physical movements and thus affect normal functioning in different areas of life (Mushtaq & Akhouri, 2016). Census 2011 has revealed that in India, out of 121 crore population, about 2.68 crore person (which is 2.21% of total population) are disabled or physically challenged and the proportion of physically challenged children vary across different age group, gender, state and type of physically challenging situation. According to the Indian census of 2011, the prevalence of physically challenged children across age are 1.14%, 1.54% and 1.82% for age range 0-4 years, 5-9 years and 10-19 years respectively. Similarly, census of 2001 and 2011 also reveal that the proportion of the physically challenged population in Uttar Pradesh to the total population is 2.01-2.25% (Census, 2011).

There are different types of physically challenging conditions which are defined in different ways by different academicians, primarily based on the purpose in view. Generally, the different types of physically challenging conditions also include visually challenged, hearing challenged, and orthopaedically challenged which have been considered for the purpose of this study (Chaudhary, 2012; Sabharwal & Sharma, 2012).

The legal definition of visually challenged depends upon measurement of the field of vision and visual acuity. It is defined as vision loss of a person to such a degree as to qualify as a handicap through significant limitations of visual capability resulting from either disease, trauma or any generative conditions that cannot be corrected by refractive correction, medication or surgery (Rastogi, 2014). According to Kar (2016), Hearing challenged or "Hard of Hearing", "Deaf", and "Partial Hearing" are some terms, that are commonly, used to denote hearing impairment and the term deaf means either partial or total loss of hearing. In practice, the term "deaf" is used to denote any person whose auditory channel is sufficiently damaged such that it precludes the auditory development and comprehension of speech or language, with or without sound amplification (Kar, 2016). Orthopaedic impairment constitutes one of the most common or more prevalent physical impairment in the human being. According to WHO, all individuals suffering from orthopaedic impairment exhibit difficulties in terms of locomotion i.e. moving (Lenka & Kant, 2012). Orthopaedic or locomotor impairment signifies impairment (difficulties, disturbances and defects) of one's muscular or skeletal system (involving one's bones, joints, limbs and associated muscles) and/or nervous system which can be caused by a number of factors like, congenital diseases, accidents, etc. (Mangal, 2007).

Research tells us that children with disabilities have a greater chance of developing mental health problems than children without disabilities (Dix, Shearer, Slee & Butcher, 2012). Bipolar disorder is one of the oldest and most reliably recognized mental health disorder. Bipolar disorder, also known as manic-depressive illness, which is also referred to as bipolar affective disorder or Bipolar Spectrum disorder or manic depression, is a brain disorder that causes unusual shifts in mood, energy, activity levels, and the ability to carry out day-to-day tasks. Bipolar disorder is defined by the presence of one or more episodes of abnormally elevated energy levels, cognition, and mood with or without one or more depressive episodes. According to NMHSI (2015-2016) report, mental disorder in India contributes 29.9% and out of which the prevalence of Bipolar Affective Disorder (BPAD) or Bipolar disorder is 0.3%. Across gender, the prevalence of BPAD among males and females is 0.3% and 2.8% respectively (Gururaj & Varghese, 2015-16)

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Environmental factors play a significant role in the development and course of bipolar disorder, and individual psychosocial variables may interact with genetic dispositions (Serretti & Mandelli, 2008). It is probable that recent life events and interpersonal relationships contribute to the onset and recurrence of bipolar mood episodes, just as they do for unipolar depression (Geddes & Miklowitz, 2013). In surveys, 30–50 percent of adults diagnosed with bipolar disorder report traumatic/abusive experiences in childhood, which is associated on average with earlier onset, a higher rate of suicide attempts, and more co-occurring disorders such as PTSD (Brietzke, et al. 2012). The number of reported stressful events in childhood is higher in those with an adult diagnosis of bipolar spectrum disorder compared to those without, particularly events stemming from a harsh environment rather than from the child's own behaviour (Miklowitz & Chang, 2008). The present paper, therefore, tries to build a link between the possible mental disorder issues that physically challenged children could face and the nature of bipolar disorder being an early onset disorder

Objective

The purpose of the study is to understand the possibility of onset of Bipolar Disorder among physically challenged children when compared to normal children; and to assess the impact of various other factors affecting it

Hypotheses

Based on previous literature, the following hypotheses can be defined –

1. Possibility of onset of bipolar disorder will be significantly different between physically challenged children and normal children.
2. Possibility of onset of bipolar disorder will not be significantly associated by the type of physical disability.
3. Possibility of onset of bipolar disorder for physically challenged will be significantly associated with the following variables:
 - 3.1: Age
 - 3.2: Gender
 - 3.3: Type of family (nuclear or joint)
 - 3.4: Domicile (urban or rural)
 - 3.5: Number of sibling

METHODOLOGY

Sample

Jawaharlal Nehru Medical Hospital in Aligarh was selected through deliberate random sampling to collect data from different physically challenged departments i.e., Department of Oto- laryngology, Department of Ophthalmology, Department of Orthopaedics. The sample of the study were 90 physically challenged children (30 orthopedically challenged, 30 visually challenged, and 30 hearing challenged children) and 30 normal children (who came for regular check-ups are selected randomly), all aged between 6 and 12 years.

Measure

For this motivational qualitative research, Questionnaire cum structured interview method was adopted to collect data of the children who came to visit the medical hospital with their parents/guardians. The Child Bipolar Questionnaire developed by Demetri Papolos (2006) consisting of 65-items was used to assess the possibility of onset of bipolar disorder (Papolos, Hennen, Cockerham, Thode Jr., & Youngstrom, 2006). The core characteristics of bipolar

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disorder swings from extremely low (Depression) to extremely high (Mania). The questionnaire contained two sections; section A contains information on personal data of the sample and section B (Questionnaire) requires responses of alternative options from the Parents/ Guardians of the sample. Options ranged from “never or hardly ever” to “very often or almost constantly”. The data regarding onset of bipolar disorder was collected and diagnosed under the supervision of Dr. Suhail Ahmed Azmi (Psychiatrist), Jawaharlal Nehru Medical College, A.M.U. Aligarh.

Procedure

The data was collected from the parents/ guardians of physically challenged as well as normal children who came to visit the hospital for regular routine check-ups from 9:00 a.m. onwards till 1:00 p.m. Parents/ Guardian were explained the objective and rationale behind the sample selection and they were made aware about the confidentiality of their responses. On an average, it took nearly 20 minutes to complete one questionnaire.

Method of Data Analysis

The analysis has been done with the help of the IBM SPSS software, using Mann-Whitney test and Kruskal- Wallis test as methods for analysing the data depending on applicability.

RESULTS & DISCUSSIONS

Table.1. Socio-demographic characteristic, Frequency (%)

Demographic factors	Groups	Physically Challenged Children (n=90)	Normal Children (n=30)	Total (n=120)
Age (years)	6-9	41 (45.6)	10 (33.4)	51 (42.5)
	9-12	49 (54.4)	20 (66.6)	69 (57.5)
Gender	Male	53 (58.9)	16 (53.3)	69 (57.5)
	Female	37 (41.1)	14 (46.7)	51 (42.5)
Type of family	Nuclear	49 (54.4)	21 (70.0)	70 (58.3)
	Joint	41 (45.6)	09 (30.0)	50 (41.7)
Domicile	Urban	42 (46.7)	13 (43.3)	55 (45.8)
	Rural	48 (53.3)	17 (56.7)	65 (54.2)
Number of siblings	0	03 (3.30)	02 (6.60)	05 (4.17)
			14 (46.7)	41 (34.2)
			11 (36.7)	46 (38.3)
			03 (10.0)	27 (22.5)

Table.1. depicts the distribution of physically challenged children (visually challenged, hearing challenged and orthopedically challenged) and normal children across age in the sample. Physically, intellectually and non-physically challenged children identified for the present study were categorized in the age brackets of 6-9 years and 9-12 years. More than half the physically challenged (54.4%) and normal children (66.6%) are in the older age group of 9-12 years. Across gender, majority of physically challenged children (58.9%) and normal children (53.3%) are males. Majority of physically challenged children (40.0%) have two siblings whereas, among normal children majority of them (46.7%) have one sibling only. Most of the children whether physically challenged (54.4%) or normal (70.0%) lives in a nuclear family with a majority belonging to the rural areas.

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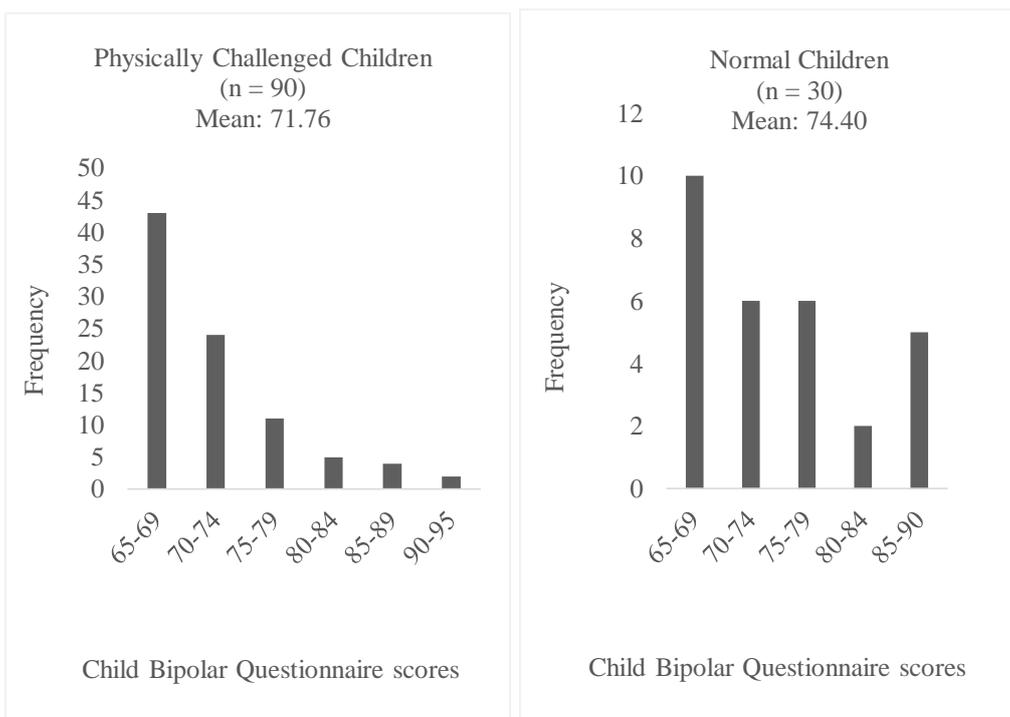


Figure.1. Frequency of Child Bipolar Questionnaire scores for all the groups within the sample

Figure.1. displays the possibility of onset of bipolar disorder using child bipolar questionnaire score. A majority of the sample (77.3%) were within the range of 60-79. Higher scores (90+) were seen only in 2.2% of physically challenged children (PCC) samples. Normal children did not have score in this range. The scores for physically challenged children and normal children ranged from 65 to 110 with a mean value of 71.77 and 74.4 respectively.

Table.2. Comparison of Child Bipolar Questionnaire scores of PCC and normal children

Groups	N	Mean Rank	Mann-Whitney (U)	Wilcoxon W	Z	p-value
Physically Challenged	90	58.26	1148.5	5243.5	-1.227	0.220
Normal Children	30	67.22				

PCC = physically challenged children

Significant at: *.0.1, **.0.05, ***.0.01 significance levels

2-tailed Significance

Table.2. shows an analysis of distribution between the scores of physically challenged children and normal children. It indicates that the calculated p-value > significance level at 0.05, which means physically challenged children don't have a significantly different possibility of onset of bipolar disorder when compared to normal children. Hence, hypotheses No.1 is rejected.

A possible reasoning for this is that, although physically challenged children may be more prone towards stressful events in life, the likelihood of such events occurring remain the same as normal children at a younger age. This leads to the conclusion that physically challenged children have an indifferent possibility of onset of bipolar disorder compared to normal children.

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Table.3. Comparison of Child Bipolar Questionnaire scores on type of physical disability

Groups	N	Mean Rank	Chi-square	p-value
Visually Challenged	30	40.80	2.212	0.331
Hearing Challenged	30	50.75		
Orthopedically Challenged	30	44.95		

Significant at: *0.1, **0.05, ***0.01 significance levels
2-tailed Significance

Table no.3. Shows that the calculated $x^2 < \text{table } x^2$ value as well as $p\text{-value} > \text{significant value}$, that means there is no difference in the distribution of scores among the three types of physical disability considered. Therefore, the hypotheses no.2 is accepted. The reason for the lack of difference in the possibility of onset of bipolar disorder among types of physical disability could be that children with either type of disability, despite the different challenges faced by them, are similarly prone towards stressful life events that are seen as a cause for bipolar disorder. Hypothesis No.2 is, therefore, accepted.

Table.4. Association of demographic factors on the possibility of onset of bipolar disorder to physically challenged children and normal children

Demographic factors	Groups	Physically Challenged Children (n=90)			Normal Children (n=30)		
		Mean Rank	Mann-Whitney (U) ⁺	p-value	Mean Rank	Mann-Whitney (U) ⁺	p-value
Age (years)	6-9	43.70	930.5	0.547	16.40	91.00	0.668
	9-12	47.01			15.05		
Gender	Male	46.77	913.0	0.579	16.81	91.00	0.376
	Female	43.68			14.00		
Type of family	Nuclear	51.78	697.0**	0.012	14.93	82.50	0.582
	Joint	38.00			16.83		
Domicile	Urban	48.56	879.5	0.297	15.04	104.5	0.799
	Rural	42.82			15.85		
Number of siblings	0	68.67	3.447	0.328	08.50	1.622	0.654
	1	43.87			15.54		
	2	42.40			16.00		
	3 or more	49.08			18.17		

Significant at: *0.1, **0.05, ***0.01 significance levels
2-tailed Significance

+ Chi square values for the variable, “Number of siblings”

Furthermore, Table.4. reveals the differences in possibility of onset of bipolar disorder for PCC for different factors: age, gender, type of family, domicile, and number of siblings. For comparative purposes, a similar analysis is done for the normal children as well. Among all the factors it is seen that only type of family of physically challenged children (p value = 0.012) is significantly associated with possibility of onset of bipolar disorder with a higher level among nuclear family (Mean Rank: 51.78) as compared to joint family. The main reason for this is the level of care afforded to children in a joint family. Physically Challenged Children are able to receive more attention and love from several family members when part of a joint family, and therefore a lesser likelihood of facing events that

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may lead able to bipolar disorder. In comparison, normal children don't show a significant affect based on the type of family. This is most likely because the requirements of attention and affection warranted by normal children are a lot lesser than physically challenged children, given that they do not face a form disability to limit them. Therefore, having a joint family or a joint family does not affect their likelihood of potential events leading up to bipolar disorder. Therefore, the hypothesis 3.3 is accepted and the other hypotheses within No.3 are rejected.

CONCLUSIONS

Childhood is the time when foundations of life are laid, so it is important for a child to have positive social surroundings for his/her successful psychological development. Prevalence of negative factors such as extreme parental control, psychological distress, and other barriers are often faced by the children with developmental issues or physical challenges. Disability could lead to conditions where a child is in the phase of sadness, inferiority complex, aggression and even depression. Long duration of such symptoms can be a causative factor leading to possibility of onset of bipolar disorder. This study aimed to assess the differences in possibility of onset of bipolar disorder between physically challenged children and normal children. Based on the samples collected from the Jawaharlal Nehru Medical College, Aligarh and the Child Bipolar Questionnaire developed by Demitri Papolos (2006), the results of the study adds to the existing literature on psychological perspectives of disabled children.

It was found that the level of scores of bipolar disorder is not significantly different between physically challenged children and normal children. This concludes that both physically challenged children and normal children have the same possibility of onset of bipolar disorder. Furthermore, the study concludes that the type of physical disability is not a significant factor that would affect the possibility of onset of bipolar disorder in physically challenged children. In addition, it was also found that the type of family of physically challenged children has significant association with possibility of onset of bipolar disorder. On the other hand, the study also found other factors such as age, gender, domicile, number of siblings, and type of physical disability are insignificant for physically challenged children as well as for normal children.

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Conflict of Interest

The authors carefully declare this paper to bear not conflict of interests

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