BURDEN OF DEVELOPMENTAL AND BEHAVIORAL PROBLEMS AMONG CHILDREN - A DESCRIPTIVE HOSPITAL BASED STUDY

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Abstract

The child development is a dynamic process that utilizes the genetic potential of the baby to achieve full potential within the context of available environment. Throughout the world, there are growing concerns about developmental, behavioural, social and emotional wellbeing of children. The management of these issues is possible only with an organized approach through a multidisciplinary team

Objective:
To estimate the prevalence of developmental and behavioral disorders in children.

Method:
Data were collected from primary caregivers of children presented to a developmental and behavioral pediatrics clinic over a period of 12 months. Standard screening and assessment tools like Strength and Difficulty Questionnaire (SDQ), Spence anxiety scale and Vanderbilt rating scale for ADHD were used. Cases were referred to the Psychiatrist, psychologist, speech therapist and physiotherapist for assessment and management when needed.

Results:
A total of 85 children with developmental problems presented to our clinic which gives clinic prevalence of 8.5%. There were 51 (60%) of male and 34 (40%) of female. The majority of these children were from Morang district 39 (46%), Sunsari district 13 (15%) and Jhapa District 9 (10.6%). The most common diagnosis were speech and language delay (22.4%), behavioral problems 21.2%, Anxiety disorders 18.8% , cerebral palsy 14.1% and Global developmental delay of 11.8% and several others. The highest number of children i.e 27 (31.8%), were referred to the psychologist/Psychiatrist followed by speech therapist 25 (29.4%) and physiotherapist 21(24.7%). Behavioral modification strategies and CBT were provided to children.

Key words: *Developmental and behavioral problems, anxiety disorders, Depression, Cognitive behavioral therapy, Behavioral modification strategies.*

Introduction

The child development is a dynamic process that utilizes the genetic potential of the baby to achieve full potential within the context of available environment. Throughout the world, there are growing concerns about developmental, behavioural, social and emotional wellbeing of children.[1] One of the multicentre study done in 5 developing country including India found the prevalence of self-reported mental health problem as high as 10.5% with conduct and emotional problems being most common.[2] Now, all the

pediatricians have crucial role to play in early diagnosis and management of developmental and behavioral problems in children because they have high prevalence in our region. The management of these issues is possible only with an organized approach through a multidisciplinary team.

Objective

To estimate the prevalence of developmental and behavioral disorders in children.

Method

Data for this study were collected during interviews with primary caregivers of children presented to a developmental and behavioral pediatrics clinic at the Nobel Medical College over a period of 12 months. Information was also received from the child as appropriate. We used standard screening and assessment tools like Strength and Difficulty Questionnaire (SDQ), Spence anxiety scale and Vanderbilt ADHD rating scale. Cases were to the Psychiatrist, psychologist, speech therapist and physiotherapist for assessment and management when needed.

The final diagnosis after complete assessment was entered into the database and result was analyzed using standard software (SPSS 16.1) using the Strength and Difficulties Questionnaire (SDQ). The SDQ is an instrument that has been widely used to assess mental health problems, emotional and behavioral problems and strength among children and adolescents[3]. The final conclusion on the presence or absence of mental health problems as measured by SDQ is ideally computed from the combined reports from parents, teachers, and self-report by child[4]. However, self reports may be sufficient screening tool for adolescents aged 11 years or older[5].

Spence anxiety scale

The Spence Children's Anxiety Scale was developed to assess the severity of anxiety symptoms broadly in line with the dimensions of anxiety disorder proposed by the DSM-IV. The scale assesses six domains of anxiety including generalized anxiety, panic/agoraphobia, social phobia, separation anxiety, obsessive compulsive disorder and physical injury fears. This measure consists of 44 items; of which 38 reflect specific symptoms of anxiety and 6 relate to positive, filler items to reduce negative response bias.

Vanderbilt ADHD rating scale

This rating scale includes the 18 ADHD symptoms described in DSM-IV , which are rated on a 4-point likert scale(0-3) that indicates whether each ADHD symptom occurs never(score of 0), occasionally(score of 1), often(score of 2) or very often(score of 3). Diagnosis is made based on DSM-IV criteria. It has 9 items that assess inattentive symptoms and 9 items that assess hyperactive and impulsive symptoms. The ADHS Rating Scale has been developed and standardized as a rating scale for children.

Result

Table1: Demographic characteristics of Study population

Variable	N=85(100%)
Gender	
Male	51(60%)
Female	34(40%)
Type of family	
Nuclear family	41(48%)
Joint family	37(43.5%)
Extended/separated family	7(8.5%)

As shown in Table 1. There were 85 children presented to the hospital which gives clinic prevalence of developmental and behavioral pediatrics problem among children of 8.5%.The mean age of participants in this study was 6 years. Among the participants, male and female children were 51 (60%) and 34 (40%) respectively. The majority of these

children were from Morang district 39 (46%) Sunsari district 13 (15%), Jhapa district 9 (10.6%) and 7 (8.2%) were from India. Rest of the children were from Bhojpur, Dhangadhi, Ilam, khotang, Okhaldhunga, Sankhuwasabha, Siraha, Saptari, Terhathum and Udaypur that made total of 17 (20%).

Among those children, 37 (43.5%) of them were from Joint family, 41 (48%) from nuclear family and rest were from extended family and separated parents.

In this study , 19 (22.4%) of participants had Language and speech delay, 18 (21.1%) had behavioral problems , 16 (18.8%) had anxiety disorder , 14 (16.5%) had Enuresis, 12 (14.1%) had cerebral palsy, 12 (14%) had intellectual disability including learning difficulties, 10 (11.8%) had seizure disorder, 10 (11.8%) had Global developmental Delay(GDD), 9 (10.6%) children had Autism Spectrum Disorder(ASD), 8 (10%) had ADHD, 7 (8.2%) had adjustment problem,4 (4.7%) had depression,12 (14.1%) had cerebral palsy, 8 (9.4%) had conversion disorder, 7 (8.2%) each had Recurrent abdominal pain and Tics. There were only 3.5% cases of child abuse and 4 (5.9%) had suicidal ideation. Table 2, shows the data about referral of patients to various Departments.

Table 2: Diagnosis using different tools And clinical evaluation

Diagnosis	**Number (percentage)**
Speech and language problems	19(22.4%)
Behavioral problems	18(21.2%)
Anxiety disorders	16(18.8%)
Enuresis	14(16.5%)
Cerebral Palsy	12(14.1%)
Intellectual disability including learning difficulties	12(14%)
Seizure disorder	10(11.8%)
Global Developmental delay	10(11.8%)
Autism Spectrum disorder(ASD)	9(10.6%)
Attention Deficit Hyper activity Disorder	8(10%)
Conversion disorder	8(10%)
Adjustment problem	7(8.2%)
Recurrent abdominal pain	7(8.2%)
Tics	7(8.2%)
Child abuse	3(3.5%)
Suicidal ideation	5(6%)

The highest number of children i.e 27 (31.8%), were referred to the psychologist/Psychiatrist followed by speech therapist 25 (29.4%) , physiotherapist 21 (24.7%), Otorhinolaryngologist 12 (14.11%) and Ophthalmologist 8 (9.4%). Table 3, shows the analyzed data regarding the intervention services provided to those children. Behavioral modification strategies were provided to 14 (16.4%) and Cognitive behavioral therapy were provided to 13 (15%) children.

Table 3: Professionals involved in the care of children

Professional	**Number of cases seen(percentage)**
Psychiatrist/Psychologist	27(31.8%)
Speech pathologist	25(29.4%)
Physiotherapist	21(24.7%)
Otorhinolaryngologist	12(14.11%)
Ophthalmologist	8 (9.4%)

Discussion

Over the past decades the public health relevance of mental health conditions in children and adolescents has been of growing concern for everyone[6]. In this study the prevalence of developmental- behavioral problems in children is 8.5 % which is comparable to the study done in another multicentre study done in 5 developing country including India found the prevalence of self –reported mental health problem as

high as 10.5% with conduct and emotional problems being most common[2].

Speech and language problem was found to be the most common problem which was 25.8%, followed by behavioral problem 21.2%, anxiety disorder of 18.8% and cerebral palsy of 14.1% .These findings are comparable to the findings of a study done in India by Nair et al[7]. In a study, based in a rural, socio-economically disadvantaged area of South Africa, aimed to examine the prevalence of children's psychological problems found the prevalence of anxiety/depression being 14% and this study has higher prevalence(18.8%) than this study which may be due to undue stress in school and home environment[8]. There is a consensus opinion that children and adolescents living with adversities and the experience of psychosocial difficulties are more vulnerable to have psychological and behavioral problems. But these inferences are mostly taken from the researches done in affluent and developed countries[9-11].

The prevalence of Attention Deficit Hyperactivity Disorder (ADHD) was reported to be 10% which is comparable to one of the study conducted by national center for health statistics in the year 2007 in USA where parent reported diagnosed prevalence of ADHD for all the children ages 6-17 years was 8.2% (95%CI 7.7-8.7)[12]. Another study done in Mumbai ,India in preschool children and the prevalence was noted to be 12.2%[13].

In this study 10 % of children were diagnosed with Autism spectrum disorder which is higher than the findings of US Centre for Disease Control (CDC) reporting that the autism prevalence rate in 2008 in 8-year-old US children was 1 in 88[14]. The Prevalence of conversion disorder is lower in our study10% vs 14.3% in the study done at Institute of Medicine, Teaching hospital by Chapagain ,Manisha et al[15]. The recurrent abdominal pain was found in 8.2% 0f children which is lower than the findings from a large, population-based, cohort study, (The Avon Longitudinal Study of Parents And Children where prevalence RAP was found to be 11.8% of 6 years old children[16].

Developmental-Behavioral pediatrics (DBP) practice relies heavily on a team approach to blend pediatrics, mental health, and allied health that includes psychologist, speech therapist , physiotherapist and occupational therapist[17]. In this study we referred very high number of cases 27 (31.8%) to psychologist and 23 (25.8%) to the speech therapist. In a study done among Australian pediatrician , it was noted that their management choices included referral to a multidisciplinary team (16%), referral elsewhere (10%) and manage alone (7%)[18]. The higher rate of referral in our center is probably due to higher prevalence of cases of anxiety disorders, behavioral problems, Speech and language delay.

The adequate functional development of children during infancy and early childhood period reflects the potential for the central nervous system of children for later development. Hence early detection of these problems and appropriate early intervention will improve the outcomes of children with developmental impairments[19]. Counseling services was offered to the parents, speech therapy and physiotherapy for the children who needed these services. Behavioral modification strategies were suggested to 16.4% of children with behavioral problems .There is plenty of evidence to support that cognitive behavioral therapy is a very important modality of management of anxiety disorders and depressive illness. In this study 21.2% 0f children received Cognitive behavioral therapy provided by a clinical psychologist.

Conclusion

In the context of having limited data about developmental and behavioral pediatrics

problem in Nepali Children, this study has added some data in this area. It has also highlighted the need for pediatricians to be aware of these problems and develop pragmatic approach to such problems through multi-disciplinary team involvement. Further multi center researches are needed to have the estimation of burden of such problems in our country.

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