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Attention Deficit Hyperactivity Disorder in Children Living in Child Care Homes in Kathmandu

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ABSTRACT

Introduction: Attention Deficit Hyperactivity Disorder (ADHD) is a common neurodevelopmental disorder of childhood, which is characterized by pervasive and impairing symptoms of inattention, hyperactivity, and impulsivity. Mental health is a major challenge in vulnerable children. The study aimed to assess ADHD among children living in childcare homes.

Methods: A cross-sectional, descriptive study was conducted among 151 children living in childcare homes in Kathmandu. Data were collected conveniently through face-to-face interview using a structured questionnaire. The ADHD was assessed using validated Devkota's ADHD scale. Ethical approval was received, and ethical issues were addressed. Data were processed using IBM SPSS v.25.0. Descriptive statistics and chi-square tests was used.

Results: ADHD was 11.92%. Hyperactivity was the most common subtype (9.93%), followed by impulsivity (5.30%) and inattention (1.32%). ADHD was higher in males (16.2%) than in females (8.4%). Similarly, the distribution of ADHD was higher in early-aged children, early-aged admitted, with long stays in childcare homes, those with family problems, and had lower educated caregivers. However, there was no significant association was observed.

Conclusions: ADHD was high among children residing in childcare homes. Hyperactivity was the most common subtype. Children in childcare homes could be vulnerable to developing behavioral disorders including ADHD. Further study is recommended to explore co-morbidity and associated factors with behavioral and emotional disorders in children in childcare homes.

Keywords: *Attention Deficit Hyperactivity Disorder (ADHD); Children; Child Care Home.*

INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder onset in early childhood. Pervasive and impairing symptoms of inattention, hyperactivity, and impulsivity characterize it.[1,2,3] Children's mental health problem is a major challenge, which may affect many aspects of an individual's life including academic interactions and social skills.[3,4]

Early detection and appropriate intervention may produce the greatest impact on health and well-being.[5] There is limited context-specific evidence on the issue.

The study aimed to assess ADHD among children living in childcare homes.

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METHODS

A cross-sectional descriptive study was conducted among 151 children living in childcare homes in Kathmandu. Children of age group 5 to 18 years who had been living in the childcare home for over six months since the date of data collection were included in the study.

The sample size was determined using the Cochran formula for finite population,

$$n = \frac{\frac{z^2 pq}{e^2}}{1 + \frac{z^2 pq}{e^2}}.$$

Where,

n = required sample size
e = margin of error (5%)
p = 10% = 0.10 (Prevalence from a study conducted in Nepal).[6]
q = 1-p = 0.90
z = 1.96 at 95% level of confidence
N = 9247 (Number of children living in child care homes in Kathmandu)

A sample size of 137 was obtained and assuming 10% non-respondent rate, the total sample size (n) for the study was 151.

Ethical approval was received from the IRC of Manmohan Memorial Institute of Health Sciences (MMIHS-IRC 597), informed consent was taken from adult caregivers/ parents, and the ethical aspect was considered. Data were collected from November to December 2021. The data was conveniently collected from adult caregivers/ parents of eligible children from three childcare homes. The face-to-face interview technique was adopted using a pretested structured questionnaire, which includes the characteristics of the participants (individual, interpersonal and caregiver/parental-related characteristics) and ADHD scale.

The ADHD was assessed using Devkota's ADHD scale, which is a validated and reliable diagnostic scale for children (age 5 to 15 years) in Nepalese context and language.[7] The scale consists of 21 items relating to behavioral problems in children. Questions 1 and 2 related to Hyperactivity, 3-11 related to Impulsivity, 12-20, and the last question associated with functional impairment. A score from 0 to 3 was assigned for each question where 0=Never, 1=Sometimes, 2=Often, and 3=Very Often. The scores for each factor were added and the total was compared with the age-based cut-off scores.

The data were entered and analyzed using IBM SPSS Statistics version 25.0. Based on the distribution and variance, appropriate statistical tests were used for analysis. Descriptive analysis was used to describe background characteristics and prevalence. Cross tabulation and Chi-square test was used to test the difference between the categorical variables, and $p < 0.05$ was considered statistically significant.

RESULTS

Among 151 participants, 11.92% scored above the cut-off for ADHD. Hyperactivity was the most common subtype (9.93%), affecting nearly 1 in 10 children, followed by impulsivity (5.30%) and inattention (1.32%) (Fig 1).

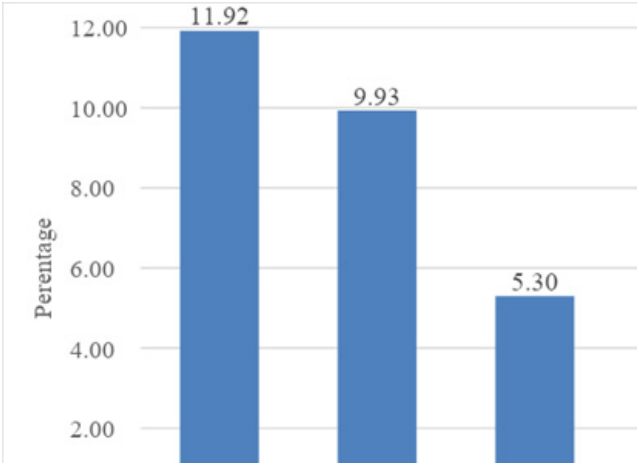

Figure 1 : ADHD and subtype among the participants (n=151)

The mean age of the participants was 12.58 years with a Standard Deviation (SD) of 2.48, ranging from 5 to 18 years. Out of 151 participants, 55% were female children and 45% were male. More than half (58.3%) of the children were admitted to childcare homes before the age of 5 years. The mean age of the participant while brought to the child care home was 5.30 years and the average duration of the stay in the child care home was 7.53 years. The reported reasons for admission to home were broken families (41.7%), followed by the death of parents (23.2%), displacement or abandonment (11.3%), and others (23.8%).

Nearly half of the participants (49%) had a sibling staying with them in the childcare home. Similarly, more than half (55.6%) of the participants had some form of communication with their parents while 44.4% had no contact with their parents. In the context of the caregiver's education, more than two third (65.6%) of the caregiver were just literate while 34.4% had school and higher education (Table 1).

Table 1. Characteristics of the participants (n=151)

Characteristics	n (%)
Age in years	
Below 13 years	78 (51.7)
13 years and above	73 (48.3)
Mean ± SD (12.58± 2.48 years)	
Sex	
Male	68 (45.0)
Female	83 (55.0)
Age at Admission	
Below 5 years of age	88 (58.3)
5 years of age and above	63 (41.7)
(Mean ± SD (5.30 ± 2.92)	
Reason for Admission	
Death of parents	35 (23.2)
Broken family	63 (41.7)
Displacement or abandonment	17 (11.3)
Others	36 (23.8)
Duration of stay at the facility	
(Mean ± SD= 7.53 ± 3.162)	
Less than 8 years	88 (58.3)
8 years and more	63 (41.7)
Siblings in the facility	
Yes	74 (49.0)
No	77 (51.0)
Contact with parents	
Yes	84 (55.6)
No	67 (44.4)
Caregiver's educational level	
Literate	99 (65.6)
School and Higher	52 (34.4)

The proportion of ADHD was higher in males (16.2%) than in females (8.4%). The distribution of ADHD was observed to be higher in children below the age of 13 years (14.1%) as compared to older children (9.6%). Similarly, the proportion of ADHD was observed slightly higher in children who were admitted younger in child care homes, had a long duration of stay in child care homes, had family problems and who had just literate caregivers. However, there was no statistically significant association observed (Table 2).

Table 2. Association of ADHD with selected variables

Characteristics	ADHD		Total	P value
	Present, n (%)	Absent, n (%)		
Age				0.392
Below 13 years	11 (14.1)	67 (85.9)	78	
13 years and above	7 (9.6)	66 (90.4)	73	
Gender				0.145
Male	11 (16.2)	57 (83.8)	68	
Female	7 (8.4)	76 (91.6)	83	
Age at admission				0.795
Below 5 years	11 (12.5)	77 (87.5)	88	
5 years and above	7 (11.1)	56 (88.9)	63	
Duration of stay				0.803
Below 8 years	10 (11.4)	78 (88.6)	88	
8 years and above	8 (12.7)	55 (87.3)	63	
Reason for admission				0.753
Death of parents	5 (14.3)	30 (85.7)	35	
Broken family	7 (11.1)	56 (88.9)	63	
Displacement/Abandonment	3 (17.6)	14 (82.4)	17	
Others	3 (8.3)	33 (91.7)	36	
Siblings in the facility				0.274
Yes	11 (14.9)	63 (85.1)	77	
No	7 (9.1)	70 (90.9)	74	
Contact with parents				0.995
Yes	10 (11.9)	74 (88.1)	84	
No	8 (11.9)	59 (88.1)	67	
Caregiver's education level				
Literate	14 (14.0)	86 (86.0)	100	0.269
Higher	4 (7.8)	47 (92.2)	51	

*Significant at p <0.05

DISCUSSION

The study reported that 11.92% scored above the cut-off for ADHD, hyperactivity was the most common subtype (9.93%), followed by impulsivity (5.30%) and inattention (1.32%). A similar proportion of ADHD was reported in other studies in Bangladesh, Nigeria, and Nepal.[8,9,10]

The prevalence of ADHD was higher in males as compared to females. Other studies suggest that male children are more likely to develop ADHD symptoms as compared to girls.[11-15] However, some studies contrast with the findings that ADHD was higher in females as compared to males and the association was not significant. [8,16]

ADHD was observed slightly higher in children who were admitted younger in childcare homes. A study in Korea also suggested that children who were placed later ate in care homes were better adjusted and had fewer behavioral problems.[17]

The ADHD symptoms were observed slightly higher among children who had lived in childcare homes for longer periods. A study from Bangladesh[8] also suggested that behavior problems were associated with a higher length of stay in orphanages. However, a study suggested that with an increased duration of stay in a childcare home there is evidence of normalization of behavior.[12]

The children who had siblings in the facility exhibited more ADHD symptoms as compared to those who did not. A similar finding from a study[18] in China, risk factors related to emotional and behavioral abnormalities were higher among the children living with siblings but not significantly associated. Further, the risk factors related to emotional and behavioral problems were higher among the children who were in contact with parents as compared to those who were not.[18] However, no relevant results have been observed in this study. In addition, there was no significant difference in ADHD development among toddlers and preschool children who were cared for by parents and non-parents.[19]

In this study, ADHS symptoms were observed lower with the higher education of their caregiver. A study from Bangladesh and Norway. also showed that behavioral and emotional disorder was higher in children whose mothers' and caregivers' education was lower and lower-educated parents had higher ADHD outcomes. [8,20] However, other studies on institutionalized orphans and left behind children suggest that there is no significant correlation between foster mother education and emotional behavioral disorder.[18,21]

The study limitations include convenience sampling in selected childcare homes in Kathmandu. Further, the study was based on caregivers' responses and ADHD diagnostic scale tool, and the associated comorbidity was not assessed.

CONCLUSIONS

The study revealed high ADHD among children residing in childcare homes. Hyperactivity was the most common subtype, followed by impulsivity, and inattention was the least. The study explored the individual and interpersonal aspects of the participants that could be associated with ADHD. This suggests that children in childcare homes could be at a high risk of developing ADHD. Further study is recommended to explore co-morbidity and associated factors with behavioral and emotional disorders in children in childcare homes.

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CONFLICT OF INTEREST

None

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