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PREVALENCE OF MENTAL AND BEHAVIOURAL DISORDERS IN ETHIOPIAN CHILDREN

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ABSTRACT

Objective: To determine the magnitude of specific mental and behavioural disorders in children in Butajira, southern Ethiopia.

Design: A cross-sectional survey.

Setting: Butajira district, southern Ethiopia.

Subjects: Amharic version of the diagnostic instrument for children and adolescents was used to interview parents of 1477 children.

Results: Of the surveyed children 3.5% had at least one or more mental or behavioural disorders. The most frequent diagnoses were anxiety disorders (1.6%), attention deficit hyperactivity disorder (1.5%) and disruptive behaviour disorders (1.5%). Mood disorders (1%) and elimination disorders (0.8%) were relatively less common.

Conclusion: The study shows that specific mental and behavioural disorders in these children are significant public health problems.

INTRODUCTION

A number of studies have shown the importance of childhood mental and behavioural disorders in developing countries (1-4). In Ethiopia, very few community-based studies have been reported. In 1968, Giel studied 381 children in the age range of 0-20 years using a psychiatric interview and found a prevalence of mental disorder of 5.2%(5). In 1989, Mulatu, using the Reporting Questionnaire for Children (RQC) and Child Behavioural and Psychological Questionnaire (CBPQ) on 860 children aged three to twelve years, reported a prevalence of psychiatric disorders of 24%(6). In a 1995 study in Ambo, western Ethiopia, a total of 1400 mothers and care-takers were surveyed to enquire about the mental health status of 3,001 children. Over 17.7% of children had at least one of the ten symptoms listed in the RQC(7). However, none of the studies mentioned above employed a structured psychiatric interview.

We report on a survey of mental and behavioural disorders in children that employed the diagnostic interview for children and adolescents (DICA). The objectives of the study were to describe the magnitude of specific mental and behavioural disorders in children in a rural area, and to determine their socio-demographic correlates (described in the second part). DICA has been in use for more than two decades. It is, however, the first time that it is applied in a community-based survey in Ethiopia. We used the Amharic translated version of DICA that has previously been evaluated for its reliability and acceptability(8).

MATERIALS AND METHODS

The study was conducted between January and December 1998 in Butajira district of southern Ethiopia, 150 km south of

Addis Ababa. The district has a population of 227,135. Forty five percent of the population belong to the 15 - 49 year age group(9). The district is administratively divided into 87 sub-districts. Four of these are in Butajira town. The altitude ranges from 1500 to 2300 metres above sea level. The climate varies between temperate in the highlands and tropical in the lowlands. The major ethnic group is Gurage. The population is predominantly Muslim by religion. Maize and Enset (false banana) are the main crops. The district has one health centre and five health stations. A new hospital is under construction. There are also five drug shops, a traditional medicine shop and several traditional practitioners in the area. A psychiatric clinic has been established in the health centre and has been functional for three years. Two psychiatric nurses are running the service.

Nine villages and one sub-district in Butajira town, with a population of 35,000, were randomly sampled from the district in 1987 and have been continuously followed since then, within the framework of the Butajira Rural Health Project. The project's main objectives were to establish a demographic study base for research on essential health problems in a rural area and to strengthen and develop research capacity and infrastructure for this purpose. A surveillance system was established in January 1987 which made it possible to estimate the occurrence of vital events. The study base is now well established and is being utilised for other more focussed studies on various health problems(10). This project's infrastructure was used in launching the present study.

Sampling: Assuming the average mental disorder in children as ten percent and with 95% confidence level and two percent error, a sample size requirement of 600 was calculated. Since we planned to measure the prevalence of specific mental and behavioural disorders a sample size of 1,200 was chosen. This was because specific disorders have a much lower prevalence. A village consists of 500 households on average, with at least two eligible five to fifteen year old children living in a household. A total of 120 children were screened in 60 households in each of the ten study communities by a systematic sampling scheme.

Training interviewers: Interviewers were recruited from

among residents of the communities. All had completed high school, and had fieldwork experience. There were two supervisors and eight interviewers. Five of the interviewers were females. All were native speakers of the local languages, and were also fluent in Amharic, which was the medium of interview. Intensive training was conducted for one month. The training process was supervised and complemented by a psychiatrist, who had participated in the translation of DICA into Amharic.

Procedure: The translated Amharic version of DICA parent version was used. Parents or caretakers of the study children were interviewed. An interview, on average took 120-180 minutes. All items in DICA were not asked because of the skip rule. In case there was any doubt, questions were repeated; however this rarely occurred. Data was collected for three months by eight interviewers going from house to house. Either of the parents (father or mother), or any other caretakers available, were interviewed. In situations when both father and mother were available, they were asked to choose one of them for the interview.

In case of absence of all caretakers, two additional visits were made. In case of absence of eligible members after two such additional visits, adjacent houses in the order of +1, -1, +2, and -2 were searched in place of the original house number. Exclusion criteria were refusal to be interviewed or inability to grant an interview because of severe illness.

There were regular and non-formal meetings to discuss problems encountered during data collection. All interviews were edited on a daily bases by supervisors and then by the principal investigator. Data were entered using a software programme of DICA-R, which had a capacity of scoring and exporting diagnosis. Statistical analysis was then performed with Statistical Analysis System (SAS). For purposes of analysis CD and ODD were put together as disruptive behaviour disorders; phobia, general anxiety and post-traumatic stress disorders as anxiety disorders, and major depression, mania and dysthymia as mood disorders.

Approval for the study was obtained from the review committees of both the Department of Community Health and the Faculty of Medicine, Addis Ababa University, and the Butajira District Council. A psychiatrist examined all 52 children identified by the DICA as having mental or behavioural disorders. With the exception of one child who was misclassified by the DICA, all children were confirmed as having the disorders by the psychiatric examination. Appropriate treatment and medications were then offered to these children.

RESULTS

A total of 718 care takers/parents of 1,477 children between five and 15 years of age were interviewed. The response rate was 99.8%. Of the total 1,477 children, 49.4% were females and 51.0% were in the age group 10 to 15 years (Table 1). Most of the study subjects (98%) were from the "Guragie" ethnic group and came from rural areas (86.3%). Households with large family size (six and above) represented 86.4% of households. Most of the study subjects were Muslims by religion (74.3%). Also, most of the parents were married couples (89%) and lived in huts with thatched roof, a single room with no windows (81.2%).

Table 1

Socio-demographic characteristics of the study children, Butajira, southern Ethiopia, (n=1477)

Characteristic	No. (%)	
Age	5-9	724 (49)
	10-14	753 (51)
Sex	Male	748 (50.6)
	Female	729 (49.4)
Residence	Urban	201 (13.6)
	Rural	1276 (86.4)
Family size	Six and above	988 (66.9)
	Below six	489 (33.1)
Religion	Muslim	1097 (74.3)
	Others	380 (25.7)
Ethnicity	Guragie	1447 (98.1)
	Others	30 (1.9)
Father's education	Not literate	1025 (69.4)
	Literate	452 (30.6)
Mother's education	Not literate	1315 (89.0)
	Literate	162 (11.0)
Housing condition	Roof Thatched	1200 (81.2)
	Corrugated	277 (18.8)
	Room Single	1151 (77.9)
	More	326 (22.1)
	Window Absent	1265 (85.6)
	Present	212 (14.4)

Table 2

Prevalence of mental and behavioural disorders among children in Butajira, southern Ethiopia

Diagnosis	Prevalence (%)		
	Male	Female	Total
ADHD	11 (1.5)	11 (1.6)	22 (1.5)
Disruptive behavioural disorder	10 (1.4)	12 (1.6)	22 (1.5)
ODD	6 (1.2)	6 (1.6)	12 (1.4)
CD	4 (0.7)	6 (0.8)	10 (0.5)
Anxiety Disorder	10 (1.3)	14 (1.9)	24 (1.6)
General anxiety	2 (0.4)	5 (0.8)	7 (0.5)
Phobia	4 (0.5)	7 (0.9)	11 (0.7)
PTSD	4 (0.5)	5 (0.8)	9 (0.6)
Mood Disorders	6 (0.8)	9 (1.3)	15 (1.0)
Major depression	5 (0.6)	9 (1.2)	14 (0.9)
Dysthymia	3 (0.3)	3 (0.7)	6 (0.4)
Mania	3 (0.5)	2 (0.2)	5 (0.3)
Eliminative disorders	4 (0.5)	8 (1.1)	12 (0.8)
Enuresis	4 (0.5)	8 (1.1)	12 (0.8)
Encopresis	1 (1.09)	0 (0)	1 (0.1)
Substance abuse	3 (0.5)	1 (0.1)	4 (0.3)
Any DSM-III-R diagnosis	23 (3.1)	29 (4.0)	52 (3.5)
Total	748	729	1,477

ADHD = Attention Deficit Hyperactivity Disorder; ODD = Oppositional Deviant Disorder; CD = Conduct disorder; PTSD = Post-traumatic Stress Disorder; DSM-III-R = Diagnostic and Statistical Manual, Third Revision, Revised.

The most prevalent diagnoses of mental and behavioural disorders were anxiety disorders (1.6%), disruptive behaviour disorders (1.5%) and Attention Deficit Hyperactivity Disorder (ADHD), (1.5%). Mood disorder and enuresis were each present in 1.0% of children (Table 2). Substance abuse, bulaemia and encopresis were relatively rare occurrences. None of the study subjects were reported to have obsession, compulsion, somatisation, anorexia nervosa, gender identity crisis or psychosis. Overall, females were more affected (4.0%) than males (3.1%).

Table 3

Comorbidity of mental and behavioral disorders among children, in Butajira, Southern Ethiopia

No. of disorders per child	Frequency (%)	Cumulative % frequency
1	11 (21.2)	21.2
2	9 (17.3)	38.5
3	8 (15.4)	53.9
4	8 (15.4)	69.3
5	8 (15.4)	84.7
6	5 (9.6)	94.3
7	3 (5.7)	100
Total	52 (100)	-

Among the 1447 study subjects, 3.5% had at least one psychiatric disorder, out of whom the majority (78%) had two or more psychiatric disorders (Table 3).

DISCUSSION

This study shows that of 1477 children studied, 3.5% had one or more mental or behavioural disorder. This reveals that there are a considerable number of psychiatric problems among children.

In developed countries, various studies using different kinds of methods and samples have shown that 5 to 15% of children aged 3 to 15 years were affected with psychiatric problems; in developing countries, similar figures have also been shown. WHO studies in developing countries, using RQC, showed a range of 15 to 29% in primary health care facilities. In Kenya, it was 20% and in Senegal 17%(1). In Ethiopia, Giel *et al*(5) studied 383 children aged 0 to 20 years, by psychiatric interview and found that 5.2% of them were affected with mental and behavioural disorders. More recent studies using the RQC, a screening instrument, have reported a prevalence of over 17%(6,7). The differences between the results of the present study and those mentioned above may be due to the fact that most of the other studies mentioned were based on clinical samples so they may have lacked representation. Furthermore, the studies used the RQC which has been shown to be less specific(11). It is also notable that our results are closer to those reported by Giel *et al*(5) who employed a psychiatric interview for data collection that is similar to interviews using the DICA.

In our study, females were slightly more affected than their male counterparts, 4.0% and 3.1%, respectively. This finding is not consistent with surveys conducted elsewhere(4,6). In the absence of local studies that have employed similar methodology to ours, it is difficult to speculate on the significance of this inconsistency. Forty one (78.8%) out of 52 cases in this study had two or more specific psychiatric disorders, which shows that approaches towards a mentally sick child should be extensive, with interventions addressing all co-morbid disorders. Ulzen, in Canada, found that 63% of incarcerated and mentally affected children had two or more psychiatric disorders, which is consistent with our finding(12). Myres, in the USA also revealed that patients with conduct disorder had additionally ADHD and substance abuse(13).

The prevalence of anxiety disorders reported in this study is lower than other reports(14,15). Lower prevalence in the present study could be explained by the fact that, as several studies have revealed, parents may be less informative about their children anxiety status as this is an internalising disorder. It could also be due to the fact that the extended family system in the community might be a protective factor and thus the reason for the lower prevalence.

The magnitude of ADHD in the study subjects was similar with most community surveys so far conducted(16). On the other hand, the prevalence of disruptive behavioural disorders reported in the present study is lower than in developed countries(17). The small prevalence in our study may be due to cultural differences between the populations. The attitude of a community towards misconduct, especially in rural areas, may lead to under reporting. Moreover, male children in the younger age groups, showing misconduct may be considered as having normal behaviour.

Reports from various studies worldwide indicate that the prevalence of disruptive behaviour disorders is higher in males than females(17). Tadesse *et al*(7) also showed this variation. The finding in our study of similar prevalence between males and females might again be attributable to the following: (a) male misconduct may be under-reported; (b) females may have rather higher disruptive problems than males. This may be due to the more stressful upbringing environment such as heavy workload and early commitment to engagement and marriage, which may predispose female children to develop more problems than their male counter-parts. In any case, like all other studies, we showed that disruptive behaviour problems increased with age. This may be attributed to biological and social changes of the growing child.

The prevalence of mood disorders reported in the present study lies within the range of reported values of other studies, albeit on the lower side(18). This may be attributable to the following: (a) the different culture of a traditional society which may have a strong coping mechanism to bereavement; or (b) parents may not be the best informants for internalising disorders such as mood disorder.

The male to female prevalence difference of mood disorders in our study was minimal. In other community surveys depression increased with age and was higher in boys before puberty and increased in girls after puberty(19). Comparison of sex difference before and after puberty was not possible here since our study is limited to ages below 15 years. Moreover, female children may be out of parent's custody, due to marriage, and this may have an effect on the estimation of the prevalence ratio. We found the prevalence of enuresis to be only one per cent, lower than that reported in other studies. Surveys have shown that over 10% children wet their bed by the age of five(20). Children in rural areas, after the age of six or seven, sleep alone and parents rarely change children's cloths or make their beds. Thus, they may not recognise the condition in their children. Children on the other hand may be less inclined to report it to their parents because of the stigma. This may explain the lower prevalence reported in the present study.

Our use of a structured instrument, trained and supervised field workers to collect data from a randomly selected group of children decreases the likelihood of the occurrence of bias in the study. On the other hand, the limitations of the study include the lengthy interview that may have had some effect on the quality of the data collected. As noted earlier, the time taken to complete the interview ranged between 120-180 minutes. Even though in the portion of DICA which enquires from parents about their experience with the interview none of them complained, it is possible that they may have had a degree of uneasiness. They may have been concerned about their daily work. A second limitation relates to the potential impact and influence of previous studies in the area that may also affect the quality of their responses. Continuous and repeated vital events registration and a number of different research activities have been undertaken in the area for the past several years.

In conclusion, the present study showed that specific mental and behavioural disorders were found in 3.5% of children studied in Butajira and most of them had two or more psychiatric disorders. The results of this study indicate the need for further studies, using structured interview instruments, in other population groups in the country. Such data are a requirement if a rational mental health policy towards the needs of children and adolescents is to be worked out.

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