Profile of child and adolescent psychiatry in Oman

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ABSTRACT

Objective: To find the common behavioral problems in youth, their co-morbidity, treatment, and other variables in Oman.

Methods: All patients who attended the child psychiatric clinic in Sultan Qaboos University Hospital (SQUH), Muscat, (the only child psychiatry clinic in Sultanate of Oman) for a 3-month period were investigated for behavioral problems, particularly hyperactivity (by Conners' Questionnaire). The diagnosis was based on the Diagnostic and Statistical Manual of Mental Disorders, 4th edition.

Results: Of the total 212 cases, Omani nationals constituted 89% and the rest were expatriates. Sixty five percent were boys, 57% were of school age, 26% were adolescents, 9% were preschoolers and 5% were toddlers. Consanguinity among their parents was high at 52%. The majority (60%) of the patients exhibited hyperactivity. Aggression was found in 49%, while stealing and lying were found in 25% and 22%. Approximately one-third suffered from headache and abdominal pain. The majority (62%) were of below-normal intelligence. Anxiety affected 14%, depression 4%, and conduct disorders 8%. One-third of the patients were taking psychostimulants and another one-third were taking tricyclics. The results were compared with those from other developing countries.

Conclusion: Behavioral problems among children and adolescents are high in Oman, same as other developing countries, though the type of disorders is different here. This calls for the attention of the health policy makers for diagnosing and treating such disorders in Oman as well as in the other developing countries.

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All over the world, psychiatric disorders in children and adolescents are increasingly coming to focus as serious, yet treatable conditions and as precursors of adult psychopathology.[1–2] Such is the demand for child and adolescent psychiatry in the developed countries such as the United States of America, that they have a great shortage of child and adolescent psychiatrists, often reaching crisis levels.[3] In contrast, the Arab countries suffer from another type of crisis due to the low priority given to mental health care in health service policies, particularly for children and adolescents, as is the case in the majority of developing countries.[4-11] In Oman, for a population of more than one million children and young people, there is only one child and adolescent psychiatry clinic. It is imperative to develop an easily accessible mental health services for the young people who constitute more than 50% of the population, and who have high prevalence of psychiatric disorders.[12-14] The perceived increase in mental disorders in developing countries could be due to factors such as drastic changes in lifestyle, migration from rural to urban areas and the negative effects of the media. The apparent increase could also be due to improved awareness among parents and teachers and the consequent increased reporting. However, there is a lack of precise figures, which makes the task of effective

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policy making difficult. In such a scenario, the objective of this study has been to obtain information on the most common mental disorders among the children and adolescents residing in Oman, in order to address the needed resources for their prevention, or alternatively to establish early diagnosis and prompt treatment to limit or even prevent further morbidity.

Methods. The study was conducted during the 3-month period from November 2000 to February 2001 at the Department of Behavioral Medicine, Sultan Qaboos University Hospital, a tertiary referral general hospital, located in the suburbs of the capital city Muscat. The outpatient facility of the department accepts all psychiatric cases, including patients with co-morbid epilepsy. The patients were usually referred from other hospitals and health centers across the country. The department's child psychiatry clinic accepts patients from early childhood up to the age of 18; however, sometimes older patients with disorders that started in childhood are also treated here. Every patient in this study, whether new or 'follow-up', was registered once only. First of all, a comprehensive history was taken from the patient, parents or guardians. Other information such as the nationality, age, sex, diagnosis, treatment, associated behavioral problems, psychosomatic complaints and consanguinity between parents were recorded as well. Every patient was examined clinically. Thereafter, the patient was assessed by Conners' Questionnaire for hyperactivity.[15] This questionnaire is widely used in community and clinical settings to screen children and adolescents for hyperactive behavior, inattention and impulsivity. Those who scored 15 or above were considered hyperactive. Intelligence was assessed clinically; however, in borderline cases, Raven's Progressive Matrices Test (RPMT), a non-verbal and culture-free general intelligence test, was administered.[16] The patients were then investigated. The vast majority of patients did not need to be admitted, and were treated as outpatients. The diagnosis was made in accordance with the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition classification,[17] except for the intelligence quotient (IQ) which was assessed by RPMT in borderline cases. Intelligence quotient assessment was considered necessary only in cases of borderline intelligence, since it was felt that there was no need to assess the IQ of good school performers or those who were obviously mentally retarded. The IQ of the latter were clinically assessed. The data was analyzed by SPSS package, and presented as percentage.

Results. The total number of subjects was 212, of which 77 (36%) were new cases. The patients aged from 2–26 years, and the average was 9.65 years (± 3.85). A total of 189 (89%) patients were Omani nationals. The majority were boys (n = 137, 65%), which is in accordance with other similar studies.[18-19] Parents of 111 (52%) patients were consanguineous (first and second cousins), higher than the average in the Omani community (36%).[20] A positive family history for psychiatric disorders was detected in 110 (52%) of the patients (**Table 1**). Moderate to severe head injury due to accidents was reported in 38 cases (18%). This result simulates other studies.[21-22] On the other hand, weight for age was less than the third percentile in 42 patients (20%), while other studies have reported higher figures (albeit in older patients).[23] The height for age was also less than the third percentile in 26 (12%) in this study. **Table 2** describes the behavioral problems and psychosomatic complaints of the children as described by their parents or guardians. Sixty percent (n = 127) of the patients scored 15 or higher on Conners' Questionnaire and consequently were considered hyperactive, 104 (49%) displayed aggressive behavior, 52 (25%) stealing and 46 (22%) lying behavior. Approximately one third of the patients had complaints of headache and abdominal pain. **Table 3** shows the age distribution, with the common diagnoses and the modality of treatment. The majority (57%) were school-aged children, followed by adolescents (26%), preschoolers (9%), toddlers (5%), and adults (3%). Speech and language delay was encountered principally among toddlers. Attention deficit hyperactivity disorder (ADHD) was common in all age groups, while anxiety was commonly seen from school age upwards.

Diagnosis. The majority of the patients (n = 131, 62%) exhibited subnormal intelligence. Among them 41 (19%) had borderline intelligence, while 90 (42%) were mentally retarded. Among the sub-normally intelligent, the largest subgroup, constituting 54 patients (25%), was of mildly mentally retarded. Twenty-one (10%) had moderate mental retardation and the rest (7%) had severe and profound mental retardation. Hyperactivity, as determined by Conners' Questionnaire, was the most frequent disorder among the patients (n = 127, 60%), either alone (n = 15), or with other disorders. The most common morbidity among the hyperactive was mental retardation (n = 42, 33%) followed by borderline intelligence (n = 23, 18%). In 35 (28%) of the hyperactive cases, more than 2 disorders were present. Anxiety and related disorders were present in 29 patients (14%), either in pure form 12 (41%), or with co-morbidity. On the other hand, depression was found in 8 (4%), all of whom, except one, were older than 10 years. With the exception of one, all depressed patients had one or more associated disorders. Conduct disorders were seen in 18 patients (8%), all had co-morbid hyperactivity. Among them, 14 exhibited one more additional disorder. No case of psychosis was identified in the study.

Treatment. Forty patients (19%) had not been given medical treatment until the completion of the investigations, while 12 (6%) were treated solely by psychotherapy or reassurance. The remaining 160 (75%) were given medical treatment, either monotherapy in 145 (91%) cases, or polytherapy in 15 (9%). When indicated, psychotherapy was provided to patients on

Table 1 - Demographic variables, parental consanguinity and family history of mental disorders of patients.

Description	n (%)
Nationality	
Omani	189 (89)
Expatriate	23 (11)
Gender	
Male	137 (65)
Female	75 (35)
Parental relationship	
Consanguineous	111 (52)
Non-consanguineous	101 (48)
Family history	
Present	110 (52)
Absent	102 (48)

Table 2 - Patients' behavioral problems or somatic complaints as reported by parents or guardians (more than one problem might exist in the same child).

Complaint	n (%)
Hyperactivity	127 (60)
Aggression	104 (49)
Headache	70 (33)
Abdominal pain	66 (31)
Stealing	52 (25)
Lying	46 (22)

Table 3 - Age-wise distribution of the cases, with diagnoses and treatment.

Age (years)	n (%)	Common diagnoses*	Treatment (by medication) No treatment	Monotherapy	Polytherapy
2 - <4	10 (5)	Speech and language delay, hyperactivity	6	4	-
≥4 - <6	19 (9)	Hyperactivity, mental retardation	6	11	2
≥6 - <12	121 (57)	Hyperactivity, mental retardation, borderline intelligence. and anxiety	27	87	7
≥12 - <18	56 (26)	Hyperactivity, mental retardation, anxiety, borderline intelligence	11	39	6
≥18	6 (3)	Anxiety, hyperactivity	2	4	-
Total	**212 (100)**		**52**	**145**	**15**

Table 4 - Cases where monotherapy was adopted (N = 145).

Type of medicine	n	(%)
Psychostimulants	48	(33)
Tricyclics	48	(33)
Anticonvulsants	20	(14)
Atypical antipsychotics	9	(6)
Typical antipsychotics	6	(4)
New selective serotonin reuptake inhibitors	5	(3)
Miscellaneous	9	(6)
Total	**145**	**(99)**

medications as well as to their parents. The distribution of patients on monotherapy is shown in **Table 4**. The most commonly used drugs were psychostimulants and tricyclics 33% each (n = 48) followed by anticonvulsants 14% (n = 21).

Discussion. The total number of patients seen in our clinic during the study period was much higher than what was previously reported in similar studies conducted for longer periods.[4,5] This does not mean that Oman has a higher prevalence of mental disorders in this age group. Probably the fact that this is the only child psychiatry clinic in Oman might have resulted in the apparent higher number of cases. It might also reflect an increased awareness of behavioral problems in children and adolescents. The absence of psychosis in this study is in accordance with several other studies,[4,13,18,24,25] while one study gives opposite results.[10] This can be attributed either to a low incidence rate of psychosis in this age group in Oman, or that psychotics are dealt with elsewhere (traditional healers or other general psychiatric clinics). The high proportion of males in our study (n = 137, 65%) is in accordance with the general trend for boys to be more vulnerable than girls to psychiatric disorders.[14,17-19,26-28] Parents may be more attentive to boys and their problems compaired to girls, which could be another reason for the larger number of males in this study. The fact that the majority of patients (n = 110, 52%) had a family history of mental disorders in our study could be due to the high level of consanguinity (52%) among the parents compared to the general population (36%), which buttresses the role of hereditary factors in causation of mental disorders.[17] Moderate to severe head injuries were common among our patients (18%), some of whom had ADHD before developing the injuries. It is well known that children suffering from ADHD are more susceptible to this type of trauma.[21,22,29,30] Others had suffered head injuries prior to being diagnosed with ADHD. In some of these children (who might have been normal earlier) perhaps the head injury had caused secondary ADHD.[1] Twenty percent (n = 42) of the patients were underweight; for most of them no actual cause (hormonal or nutritional) could be found. Some studies[23] have found a higher proportion of underweight cases among the older mentally handicapped patients. Headache and abdominal pain were common, and could be due to many causes including early migraine attacks, as a manifestation of anxiety, tension and depression.[31] or secondary to ear, nose and throat, dental and visual problems. Only a few patients had visual acuity errors and these were mild. Chronic non-progressive headache is almost invariably functional. Though the possibility of cerebral tumors in cases of steadily or intermittently progressive headaches was kept in mind,[31] none was diagnosed in this study. The majority of our patients (57%) were school-age children, a finding similar to that of other studies.[4,7,13] This might be attributed principally to school problems, and secondarily to disturbed cognitive functions (ADHD, mental subnormality) or problems encountered due to the child's disruptive behavior. Fewer cases under the age of 6 seen in the clinic might be explained by a waiting attitude of the parents under the impression that problems, such as that of speech and language, delay in acquisition of some skills, and so forth, might resolve spontaneously with time; or they possibly have consulted child health clinics for such problems. It could also be that they believe that very small children cannot be afflicted with mental illness. As a result, only those suffering from severe speech problems or mental retardation were referred to our clinic. The guardians complained of hyperactive behavior (according to Conners' Questionnaire) in their words in 60% of cases. This is higher than the level reported elsewhere, that hyperactivity exists in 30–50% of psychiatric outpatients.[32] Our figure is not surprising as 62% of our patients had sub-average intelligence, a condition usually associated with other psychiatric problems including hyperactivity.[33] In fact, 42% of the total patients were mentally retarded. Two other studies that showed high proportions of mental retardation reported even lower values (21% and 23%) than found in our study.[18,24] Guardians also complained of aggressive (49%), stealing (25%) and lying behavior (22%). Co-morbidity is common in psychiatry; for example 40–70% of patients with ADHD have accompanying conduct disorders.[34]

In conclusion, this study shows high levels of psychiatric morbidity in children and adolescents. The clinic from where the data was collected happens to be the only child psychiatric clinic in Oman, and can be considered as representative. The existing facilities in Sultanate of Oman, as well as in the other developing countries are very much inadequate to deal with the problem. The authors recommend that child psychiatry clinics should be established in all district hospitals in the Sultanate of Oman. Simultaneously, parents, teachers and even primary health personnel should be made aware of the nature and prevalence of mental problems in children and adolescents and of the fact that even toddlers are not immune.

References

1. Popper C, West S. Disorders usually first diagnosed in infancy, childhood, or adolescence. In: Hales RE, Yudofsky S, editors. Essentials of clinical psychiatry based on the American Psychiatric Press textbook of psychiatry. 3rd ed. Washington (DC): American Psychiatric Press; 1999. p. 539-645.
2. Crowley TJ, Mikulich SK, MacDonald M, Young SE, Zerbe GO. Substance-dependent, conduct disordered adolescent males: severity of diagnosis predicts 2-year outcome. ***Drug Alcohol Depend*** 1998; 49: 225-237.
3. American Academy of Child and Adolescent Psychiatry: ACCAP Workforce data sheet, avaialable from: http://www.aacap.org/web/aacap/training/workforce.htm
4. Rahim DA, Ali SM, Rabbani MG, Rahman MA. Analysis of psychiatric morbidity of outpatient children in Mitford Hospital, Dhaka. ***Bangladesh Med Res Counc Bull*** 1997; 23: 60-62.

5. Lustig SL, Maldonado JR. Diagnoses of children and adolescents on initial presentation to a Nigerian outpatient psychiatry clinic. ***Int J Soc Psychiatry*** 1999; 45: 190-197.
6. Moodley SV, Pillay AL. Two years of admissions to Natal's first inpatient child mental health center. ***S Afr Med J*** 1993; 83: 209-211.
7. Vogel W, Holford L. Child psychiatry in Johannesburg, South Africa. A descriptive account of cases presenting at two clinics in 1997. ***Eur Child Adolesc Psychiatry*** 1999; 8: 181-188.
8. Simmons RJ. Observation of child psychiatry in China. ***Can J Psychiatry*** 1983; 28: 124-127.
9. Alarcon RD, Aguilar-Gaxiola SA. Mental health policy developments in Latin America. ***Bull World Health Organ*** 2000; 78: 483-490.
10. Turkson SN. Psychiatric disorder among adolescents attending a psychiatric out-patient clinic in Accra, Ghana: a seven-year review study (1987-1994). ***West Afr J Med*** 1996; 15: 31-35.
11. Gureje O, Alem A. Mental health policy development in Africa. ***Bull World Health Organ*** 2000; 78: 475-482.
12. Ministry of National Economy. Statistical Yearbook: Sultanate of Oman. Vol. 29. Muscat: Information and Publication Center; 2001.
13. Gureje Omigbodun OO, Gater R, Acha RA, Ikuesan BA, Morris J. Psychiatric disorders in a paediatric primary care clinic. ***Br J Psychiatry*** 1994; 165: 527-530.
14. Al-Sharbati M, Younan A, Sudani O. Behavioral problems among pupils. ***Saudi Med J*** 1998; 19: 776-780.
15. Conners CK. A teacher scale for use in drug studies with children. ***Am J Psychiat*** 1969; 126: 884-888.
16. Raven J. The Raven's Progressive Matrices: Change and stability over culture and time. ***Cognit Psychol*** 2000; 41: 1-48.
17. American Psychiatric Assocation. Diagnostic and Statistical Manual of Mental Disorders. 4th ed. Washington (DC): American Psychiatric Assocation; 1994.
18. Sidana A, Bhatia MS, Choudhary S. Prevalence and pattern of psychiatric morbidity in children. ***Indian J Med Sci*** 1998; 52: 556-558.
19. Sourander A, Turunen MM. Psychiatric hospital care among children and adolescents in Finland: a nationwide register study. ***Soc Psychiatry Psychiatr Epidemiol*** 1999; 34: 105-110.
20. Rajab A, Patton MA. A study of consanguinity in the sultanate of Oman. ***Ann Hum Biol*** 2000; 27: 321-326.
21. Gerring JP, Brady KD, Chen A, Vasa R, Grados M, Bandeen-Roche KJ et al. Premorbid prevalence of ADHD and development of secondary ADHD after closed head injury. ***J Am Acad Child Adolesc Psychiatry*** 1998; 37: 647-654.
22. Konrad K, Gauggel S, Manz A, Scholl M. Inhibitory control in children with traumatic brain injury (TBI) and children with attention deficit/hyperactivity disorder (ADHD). ***Brain Inj*** 2000; 14: 859-875.
23. Simila S, Niskanen P. Underweight and overweight cases among the mentally retarded. ***J Ment Defic Res*** 1991; 35: 160-164.
24. Chadda RK, Saurabh S. Pattern of psychiatric morbidity in children attending a general psychiatric unit. ***Indian J Pediatr*** 1994; 61: 281-285.
25. Chadda RK. Psychiatric morbidity in preschool children – a clinic based study. ***Indian J Pediatr*** 1995; 62: 77-81.
26. Rutter M, Graham P, Birch HG. A neuropsychiatric study of childhood. Clinics in developmental medicine. No. 35/36. London (UK): Heinmann; 1970.
27. Rutter M, Graham P, Chadwick O, Yule W. Adolescent turmoil: Fact or Fiction. ***J Child Psychol Psychiatr*** 1976; 17: 35-36.
28. Gath D, Coeoper P, Gattoni F, Rockett D. Child guidance and delinquency in a London Borough Maudsley Monograph No. 24, London (UK): Oxford University Press; 1977.
29. Schachar R, Tannock R, Marriott M, Logan G. Deficient inhibitory control in attention deficient hyperactivity disorder. ***Abnorm Child Psychol*** 1995; 23: 411-437.
30. Schachar R, Mota VL, Logan GD, Tannock R, Klim P. Confirmation of an inhibitory control deficit in attention-deficit hyperactivity disorder. ***J Abnorm Child Psychol*** 2000; 28: 227-235.
31. Menkes JH. Textbook of Child Neurology. 3rd ed. Philadelphia (PA): Lea and Febiger; 1985. p. 658-662.
32. Wender PH. The Hyperactive child, adolescent and adult: Attention Deficit Disorder through the life span. New York (NY): Oxford University Press; 1987.
33. King BH, DeAntonio C, McCracken JT, Forness SR, Ackerland V. Psychiatric consultation in severe and profound mental retardation. ***Am J Psychiatry*** 1194; 151: 1802-1808.
34. Sossignan R, Tremblay R. Other disorders of conduct, In: Sandberg S, editor. Hyperactivity Disorders of Childhood. Cambridge (UK): Cambridge University Press; 1996.