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Symptoms of anxiety and depression among adolescents with seizures in Irbid, Northern Jordan

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In Jordan, individuals with epilepsy commonly attend neuropsychiatric clinics. The objective of this study was to assess the psychosocial outcome of epilepsy among adolescents. The study included 101 epileptic adolescents who attended the neurology clinic at the Princess Basma Teaching Hospital in Northern Jordan and 101 non-epileptic controls. Sociodemographic characteristics and all relevant clinical data were collected through interviewing the cases and controls. Identification of the symptoms of anxiety and depression was made according to DSM-IV criteria. The patients were age and sex matched with the controls. The controls had achieved a significantly better education (>12 years education) than the patients with epilepsy. The adolescents with epilepsy were also shown to be disadvantaged in their living circumstances. Some of them were dependent on their parents in some daily physical activities, such as bathing, which might be a sign of overprotection by their parents. Those with epilepsy had a significantly higher tendency to develop symptoms of anxiety and depression than the control group. Moreover these psychiatric symptoms, especially anxiety symptoms, were more likely to happen when seizures had not been properly medically controlled. Overprotective parental behaviour towards their ill children could also delay their psychosocial maturation. Therefore, counselling of patients and parents about epilepsy is an important factor in the control of seizures and their sequelae.

Key words: seizure; epilepsy; psychosocial; anxiety; depression; Jordan.

INTRODUCTION

Studies of the morbidity of epilepsy have addressed the prevalence and incidence of this problem in some developed countries[1,2]. Geographical variations in these statistics are evident, yet there is a lack of such studies in developing countries[3]. In Jordan, a developing country in the Middle East, information about the prevalence of epilepsy is not available. However, it is commonly observed that epileptic children and adolescents constitute a considerable proportion (10.4%) of the total number of patients attending the neurology and psychiatry clinics[4].

Although the image of this disease has improved over time, society, parents and patients themselves are still concerned and anxious because of the associated public prejudice and stigma[5]. Epilepsy in children has traditionally been thought to cause social and psychological disabilities during adolescence and adulthood[6]. In developed countries, the likelihood of achieving permanent remission with medical management in up to 70–80% of cases may decrease these consequences[7]. Among Jordanians, the situation is expected to be different from developed countries due to differences in sociocultural setting[8] and appropriateness of medical management. It is not easy for adolescents with epilepsy to feel like their healthy peers. They are usually overprotected by their parents, become dependent and may feel threatened by their society. Therefore, they may experience abnormal social and psychological reactions[9]. The type and prevalence of various emotional, behavioural and psychiatric problems associated with epilepsy vary in the literature[10–12]. The variations occur due to methodological limitations such as bias in selection of cases or controls, small sample size and variations in the assessment methods.

In the present study, we have tried to investigate

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some psychosocial aspects among a group of adolescents with epilepsy compared with a control group. The aim was to find out any significant association between some psychiatric symptoms and epilepsy among adolescents.

MATERIALS AND METHODS

The study population included a series of 101 cases of generalized seizures (epilepsy group) and a similar number of non-epileptic subjects. Those with epilepsy were adolescents and young adults aged 14–24 years attending the neurology clinic at Princess Basma Teaching Hospital from March to August 1997. Princess Basma Teaching Hospital is the principal government general hospital in Irbid, Northern Jordan. The hospital serves an estimated population of over 1 000 000 from Irbid and the nearby Northern governorates.

The diagnosis of epilepsy was made by a consultant neurologist based on the presence of two or more unprovoked generalized seizures (not associated with brain damage or metabolic disorder). Six patients were excluded from the study because of documented learning difficulty which might impede proper psychiatric assessment. Eight others refused to participate. The control subjects, matched for age and sex were chosen from patients attending the outpatient clinics in the hospital for problems unrelated to epilepsy. A 15–20 minute interview was privately conducted in the neurology or outpatient clinic for the cases and controls. The cases of epilepsy were seen at the neurology clinic when they usually came for follow up or medication. A full explanation of the study aim was given, and only those who agreed to participate in the study were included. The patients' age, sex, living conditions, educational achievement and employment status were recorded. For those with epilepsy, the age when epilepsy was first diagnosed, provoking and triggering factors, medication and counselling about seizure control were also investigated. This helped us to gain the patients' confidence during the psychiatric assessment.

The psychiatric assessment included an enquiry about symptoms of anxiety and depression. The diagnosis of anxiety and depression among cases and controls was made according to DSM-IV criteria. Accordingly, the main symptom of anxiety was a persistent and excessive worry, associated with at least three of six symptoms (restlessness, fatigue, difficulty in concentration, irritability, muscle tension and sleep disturbance). For depression, at least one of the symptoms must be depressed mood, or loss of interest or pleasure in all activities. Other symptoms might be present, such as weight loss, insomnia or hypersomnia, loss of energy and feelings of worthlessness[13]. The interview questionnaire was revised for completeness after a pilot study was carried out on 20 patients who were not included in the final analysis. Frequency distributions for all variables and the necessary cross-tabulations were performed. Finally, the χ^2 test and the Odds Ratios and their 95% confidence intervals were estimated to assess the statistical significance of the psychosocial aspects of epilepsy in adolescents[14].

Table 1: Sociodemographic characteristics of epileptic adolescents and the control group.

Sociodemographic variable	Epilepsy group No. (%)	Control No. (%)
Age (year)		
14–19	43 (42.6)	41 (40.6)
20–24	58 (57.4)	60 (59.4)
Sex		
Male	54 (53.5)	53 (52.5)
Female	47 (46.5)	48 (47.5)
Educational achievement (years)[a]		
10	49 (48.5)	48 (47.5)
11–12	32 (31.7)	19 (18.8)
>12	20 (19.8)	34 (33.7)
Employment status		
Employed	30 (29.7)	29 (28.7)
Not	21 (20.8)	19 (18.8)
Student	50 (49.5)	53 (52.5)
Living with[a]		
Parents	85 (84.2)	79 (78.2)
Siblings	3 (3.0)	1 (1.0)
Wife	1 (1.0)	6 (5.9)
Alone	12 (11.9)	6 (5.9)
Daily activities[a]		
Restricted	14[b] (13.9)	0 (0.0)
Not	87 (86.1)	100 (100.0)

[a] $P < 0.05$. [b] Restricted exercise 8; bathing 2; combination 4.

Table 2: Psychiatric assessment of epileptic adolescents and control group.

Symptoms	Epilepsy group No. (%)	Control No. (%)	OR (95% confidence interval) P-value
Anxiety			
Present	49 (48.5)	17 (16.8)	4.66 (2.32–9.43)
Absent	52 (51.5)	84 (83.2)	$P = 0.000$
Depression			
Present	23 (22.8)	11 (10.9)	2.41 (1.04–5.67)
Absent	78 (77.2)	90 (89.1)	$P = 0.024$

RESULTS

Some sociodemographic characteristics of the 101 people with epilepsy and 101 age and sex matched control patients are presented in Table 1. The age and

sex distribution of cases and controls were similar. Concerning years of education, Table 1 shows clearly that the controls had significantly better educational achievement (more than 12 years education) than those with epilepsy (33.7% compared with 19.8%). The employment status of the cases and controls had no significant difference. However, the living conditions of the adolescents with epilepsy were significantly different from the comparison group. The table shows that a higher proportion of controls (5.9%) were married, compared with the cases (1%). This is in contrast to 11.9% of the people with epilepsy and 5.9% of the controls who were living alone. Restriction of some physical activities (exercise and or bathing) was reported by 14 (13.9%) of the patient group, while no control subject had such problems.

Assessment of the psychiatric symptoms as an outcome of epilepsy among adolescents is shown in Tables 2 and 3. The odds ratio measures the relative risk of developing various psychiatric symptoms among those with epilepsy. Table 2 shows that symptoms of anxiety and depression were more prevalent among the patient group (48.5 and 22.8%, respectively) than the control group (16.8 and 10.9%, respectively). The odds ratios for anxiety (3.66) and depression (2.41) among those with epilepsy were statistically significant when compared with the control group ($P = 0.000$ and 0.024, respectively). Concerning the development of psychiatric symptoms in association with the medical control of seizures among adolescents, Table 3 shows higher proportions of symptoms among the medically uncontrolled group than the medically controlled. The odds ratios for anxiety and depression symptoms were 3.07 and 2.46, respectively, in association with lack of medical control of epilepsy. The risk of anxiety symptoms among medically uncontrolled adolescents with epilepsy was significant ($P = 0.007$), but not significant for symptoms of depression ($P = 0.059$).

DISCUSSION

The main objective of the present study was to find out whether adolescent males with epilepsy are more likely to develop psychiatric symptoms than their peers. During the period of adolescence, the ability of young people to manage their profound physiological and emotional needs is largely influenced by the family and social environment in which they grow up. Adolescents with epilepsy are confronted with the additional task of adjusting to their unusual condition. Therefore we have looked primarily at the educational achievement, employment status and living circumstances of these young people with epilepsy. Because of the similarity in the age distribution of cases and controls, it is not possible to distinguish any difference in educational achievement between the two groups until later in adolescence. The result gives an indication of a better educational attainment among non-epileptics than those with epilepsy. However, this finding is not conclusive, because education is affected by intellectual capacity and success at the school. The difference in educational achievement might be helpful in explaining the other study's findings. A study in Finland[9] showed a similar finding to ours in Northern Jordan regarding basic and university education, but we did not have information about vocational training. Regarding employment status, this study showed no significant difference between the cases and controls. This could also be explained by the similarity in age distribution and the sort of semi-urban family life which most adolescents have there even after getting married. This finding contrasts with the pattern of increased unemployment in western countries[15], which is thought to be due to discrimination at work and restricted career development for people with epilepsy[16].

Table 1 also shows that a large majority of both the study and comparison groups were living with their parents, which is usual in Jordan. However, overprotective behaviour by parents may delay the social maturation of their children, especially when they suffer from such a neurological disorder[9]. This phenomenon is evidently seen in the table, which shows that 14 adolescents with epilepsy were dependent on their parents for carrying out daily activities such as physical exercise and bathing.

Table 3: Psychiatric symptoms among epileptic adolescents by medical control.

Signs	Medically[a] uncontrolled No. (%)	Medically[a] controlled No. (%)	OR (95% confidence interval) *P*-value
Anxiety			
Present	26 (65.0)	23 (37.7)	3.07 (1.24–7.70)
Absent	14 (35.0)	38 (62.3)	$P = 0.007$
Depression			
Present	13 (32.5)	10 (16.4)	2.46 (0.87–7.04)
Absent	27 (67.5)	51 (83.6)	$P = 0.059$

[a] Medical control of epilepsy means the absence of seizures for the last 6 months preceding the inquiry. Medically uncontrolled = 40 (39.6); controlled = 61 (60.4).

It is extremely difficult to ignore family and public attitudes towards children and adolescents with epilepsy in our society. Although there has been a favourable change in attitudes due to improved public awareness, the stigmatizing effect of the diagnosis on an individual's fears of seizures and parental overprotection may interfere with the psychosocial adjustment of young individuals with epilepsy. The results in Table 2 give a clear indication that some adoles-

cents with epilepsy in our society have been experiencing significantly more symptoms of anxiety and depression than those who do not have epilepsy. It is noteworthy that identification of these symptoms is not indicative of a diagnosis of a particular psychopathology. However, psychosocial problems may evolve, as the condition becomes chronic[17]. A study in Italy has also shown that psychic involvement was reported in the majority of cases, even with partial motor seizures, as described by their parents. However, it is suggested by others that psychosocial impairment of adolescents with epilepsy is transient[9, 10, 18]. 'Epilepsy by itself does not seem to disturb adolescent social and psychological development[9].' The cases in this study were often unmarried, living with parents and living a dependent life style. The fears and anxiety imposed by seizures, superadded to an expected delayed social maturation might explain the high risk of psychiatric symptoms among the young adolescents with epilepsy. Selection bias cannot be excluded because of the inclusion only of cases attending a hospital clinic. Moreover, adolescents with uncontrolled seizures were at significantly higher risk of developing symptoms of anxiety than the controlled group of adolescents with epilepsy. Those with uncontrolled seizures would have fears of having recurrent unpredictable seizures. The national general practice study of epilepsy in the United Kingdom showed that people with epilepsy having their seizure within 1 year of data collection were more likely to record psychosocial maladjustment problems than those who were better controlled. Furthermore, poorly controlled seizures appeared as a risk factor for subsequently developing psychopathology[19]. Individuals with uncontrolled epilepsy would be repeatedly suffering from worries and fears. However, it seems from the results that symptoms of depression may not be significantly shown by those whose epilepsy is running a chronic course of recurrent seizures. Meanwhile, social maladjustment due to inadequate educational achievement and a dependent life style may eventually lead to such symptoms over a period of time.

In conclusion, adolescents with epilepsy are exposed to complex psychosocial circumstances, making them likely to develop various psychiatric symptoms, especially anxiety. Anxiety becomes more pronounced when seizures are not controlled. In a developing country like Jordan, our society still has a hazy profile of epilepsy as a controllable and nonstigmatizing problem. Parents are still very concerned and overprotective of their ill children. Therefore, there is a great need for patient and parent education about epilepsy and its management and control. Counselling should be provided for the patient and his family as an important factor for the control of seizures and their sequelae. In addition, proper evaluation and medical management has to be provided for young people with epilepsy. The treating physician should take into consideration that an adolescent with epilepsy faces tremendous anxiety that may be accompanied by some forms of educational and employment restrictions. Failure of these patients to adjust themselves to the various psychological pressures may result in a future deterioration in their health. Therefore, to prevent the development of any social or psychiatric complications, parents and the physician should act together toward supporting the patients to control their seizures and anxieties.

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