

Research Article

Study of prevalence and management of epilepsy in Oman

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Abstract

A seizure represents the clinical manifestation of an abnormal uncontrolled electrical discharge from a group of neuron in the cerebral cortex. The signs and symptoms vary according to the site of neuronal discharge in the brain. Epilepsies are not hereditary diseases; they cannot be passed on from one generation to the next. Nevertheless there can be a cluster of cases of epilepsy in certain families. This is because - as with many diseases, for instance diabetes or rheumatism - the illness itself is not hereditary, but the predisposition to it is. Any additional disorder, e.g. complications during pregnancy or at birth, a serious illness or a head injury, can trigger the onset of epilepsy. It is, however, not always possible to find the actual trigger of the disease. Such a type of epilepsy, which is mainly caused by genetic disposition, is known as genetic epilepsy. In around one third of all epilepsies, the cause of the disease remains unknown. It is clear, therefore, that anyone can get epilepsy at any time in their life.

Aim: The aim of the work was to study the prevalence, awareness and management of Epilepsy cases in Oman.

Methodology: The study was conducted at the department of Neurology at SQU hospital, Royal hospital, Sohar hospital, Saham poly clinic by distributing a questionnaire to the doctors and patients. Also we took prescription from some hospitals, to identify which gender, age and type of drug is most common in our practice.

Conclusion: Result of the study showed that number of males with epilepsy is more than females by 54% and most of them are treated by special drug management in ND using different types of antiepileptics depending on their condition.

Introduction

Epilepsy is caused by abnormal activity in brain cells and seizures can affect any process of your brain coordinates. Seizure signs and symptoms may include temporary confusion, a staring spell, uncontrollable jerking movements of the arms and legs, loss of consciousness or awareness and psychic symptoms. The goal of treatment is to manage and control symptoms, and to limit the number of seizures. Up to 70% of people could have their epilepsy controlled with medication (anti-epileptic drugs). Drug can be classified depending upon the type of seizures [1-5].

Wael M. Gabr *et al.* conducted a study and concluded that the assessment of medication adherence among epileptic patients should be a routine part of the management process to improve the health care and quality of lives of those patients [6]. The results show that from a total of 116 patients who were clinically examined during the study period in the Neurology Department at Riyadh National Hospital, Riyadh, Saudi Arabia, only 94 patients (81.0%) fulfilled the inclusion criteria within the study period.

Abdullah Al-Asmi, *et al.* conducted a study and concluded that the semi-structured interview revealed the prevalence rate of 27% for depressive disorder and 45% for anxiety disorder [7]. The best compromise using the cut-off score of 7 or 8, gave a sensitivity of 99% for depression and 83-91% for anxiety and a specificity of 87.5-100% for depression and 85-94% for anxiety. Findings suggest that the Hospital Anxiety and Depression Scale (HADS) is a useful screening tool for this particular population. This finding is discussed from the socio-cultural perspective of Omani society.

Samir al_adawi *et al.* conducted a study and concluded that

epileptic patients who were attending tertiary hospital were found to have limited knowledge about their condition and as other chronic disorders; people with epilepsy in Oman should receive systemic health education about how to manage the condition most effectively [8].

Mahoko Furujo conducted a study and concluded that any patients with DHPR deficiency and seizures of partial onset can be treated successfully by increasing the dosage of Levetiracetam up to 2000 mg/day which shows reduction in seizures without any adverse effect [9].

Amira Masri *et al.* conducted a study that showed children with afebrile seizure in the age between 1 and 12 months and control group of healthy children to determine the risk factors for epilepsy. From their study they classified the etiology of epilepsy to 3: symptomatic, cryptogenic and idiopathic. They concluded the study with the risk factors of epilepsy which is parental consanguinity, a family history of a global developmental delay, a family history of epilepsy and a positive perinatal history [10].

Ghaydaa A. Shehata and dalia G. Mahran conducted a study that showed the prevalence of epilepsy in Egypt. In high school students they did questionnaire for guardians students to know about their knowledge of epilepsy. After analyses of the questionnaire they concluded that all guardian students had the knowledge of epilepsy. Finally, they predicted that patient with epilepsy having more knowledge about epilepsy than other patient [11].

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Renzo Guerrinia conducted a study and concluded that topiramate is effective and well tolerated when used as initial or second monotherapy. They also suggest that in a naturalistic setting, seizure freedom are observed at low doses in a broad spectrum of epilepsies [12].

Mohammad Ali Yadegarya conducted a study that showed that psychosocial variables can have incremental significance over biomedical variables in the health-related quality of life of patients with epilepsy. There was no significant difference in the two groups before the intervention and after the intervention [13].

Roshan Koul *et al.* conducted a study in forty-four children with diagnosed West syndrome (infantile spasms, mental retardation/regression and hyperarrhythmia). They reported children constituting the symptomatic group, and still continuing their follow-up with them. Developmental delay before the onset of infantile spasms was reported. Brain computed tomography was abnormal. Sodium valproate and vigabatrin were the most often used drugs. Nine children achieved good seizure control. Out of which five have normal development. Only one child could be weaned off antiepileptic drugs completely. There was one death in the whole series, related to aspiration pneumonia [14].

Abdullah Al Asmi and his colleagues conducted a study and examined the use of CAM among people with epilepsy (PWE) in Oman. The majority of PWE attending tertiary care had utilized CAM. CAM users had not disclosed its use to their allopathic health-care provider(s). Spiritual healing and herbal concoctions are the most frequently used types of CAM. The use of CAM was highly associated with specific sociodemographic factors [15].

Objectives of the study

The main objective of the present work was to study some epilepsy cases in Oman. Since this study has not been done in Oman and there is no data available about its prevalence, the aim of the study was to distribute the questionnaires to community, doctors and patients and to know about its prevalence and treatment in Oman.

Hypothesis

Epilepsy is one of the most common diseases in Oman. It is not much reported.

Methodology

The study was conducted at the departments of Neurology at SQU hospital, Royal hospital, Sohar hospital and Saham poly clinic in Oman. The study participants were patients with epilepsy who visited Neurology department. They were in the age group of 10-40 years. The prescriptions were used to extract the data. The collected data was analyzed using excel program in order to see which gender and age the patients belonged to and which drug was prescribed the most. The results were presented in a graph and table format: The following questionnaires were prepared

For the patients:

The patients were given the following questionnaire and were asked for their opinion about certain points (Figure 1).

For the doctors:

The doctors were given the following questionnaire and were asked for their opinion about certain points (Figure 2).

For the community:

Questions	Yes	No	Some times
Do you feel comfortable telling your friends and family members that you have epilepsy?			
According to your experience with epilepsy, do you think that it has to do with spiritual reasons related to harm and the jinn?			
Do you think that friends and family members attitude towards you changed after you told them that you have epilepsy?			
Do you feel that the family has a role in alleviating the symptoms of the disease?			
Do you think that you are receiving appropriate treatment and care necessary for your condition			
Do you feel that your mental abilities have been affected?			
Do you have sufficient knowledge about epilepsy in terms of its type, causes and how to cure?			

Figure 1. Questionnaire for patients.

QUESTIONS	AGREE	DISAGREE	UNCERTAIN
1. Patients with epilepsy can have a high quality of life			
2. Patients with epilepsy are less able than others to establish close relationships			
3. A lot of people do not understand patients with epilepsy			
4. A lot of people are afraid of patients with epilepsy			
5. Although they deny it, a lot of employers discriminate against patients with epilepsy			
6. Patients with epilepsy should avoid strenuous physical work			
7. Behavioral disturbances are more frequent in patients with epilepsy than in others			
8. Changes in mood are more frequent in patients with epilepsy than in others			
9. Emotional imbalance is more frequent in patients with epilepsy than in others			
10. Patients with epilepsy are more aggressive than others			
11. Patients with epilepsy are more irritable than others			
12. Poor attendance at school or work is more frequent among patients with epilepsy			
13. Patients with epilepsy are less intelligent than others			
14. Patients with epilepsy are less able to concentrate than others			
15. Patients with epilepsy are less active than others			
16. Patients with epilepsy are less productive at work than others			
17. Patients with epilepsy have more learning difficulties than others			
18. Injuries and accidents at work are more frequent among patients with epilepsy			
19. Patients with epilepsy should avoid stressful mental work			
20. Patients with epilepsy should not get married			

Figure 2. Questionnaire for doctors.

Following questions were asked to the community people (Figure 3). They were told to reply and were assured that their replies would be kept confidential (Figure 4).

Following questions were asked and the people were requested to give their opinion about the disease.

- 11) What do you think is the cause of epilepsy? (Figure 5)

QUESTIONS	YES	NO
1) Do you know of anyone who has epilepsy?		
2) Has anyone ever had a seizure in your presence?		
3) Would you know what to do if someone was having a seizure in your presence?		
4) Would you employ a person with epilepsy?		
5) Epilepsy is a contagious condition?		
6) The majority of people with epilepsy must avoid flashing or flickering lights?		
7) Almost all seizures involve falling to the ground followed by jerking movements?		
8) All seizures require immediate medical intervention?		
9) Having epilepsy negatively affects a person's intelligence?		
10) There is a social stigma attached to those who have epilepsy?		

Figure 3. Questionnaire for the community.

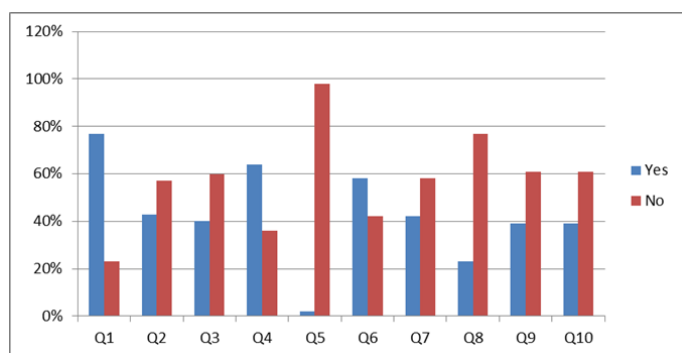


Figure 4. Response to the community questionnaire.

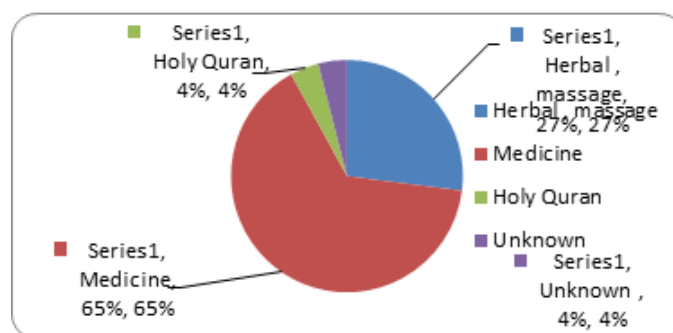


Figure 6. People's comments for the treatment of epilepsy.

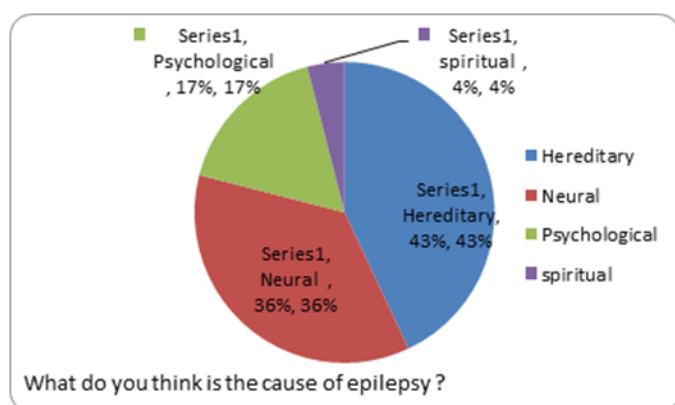


Figure 5. People's comments regarding the cause of epilepsy.

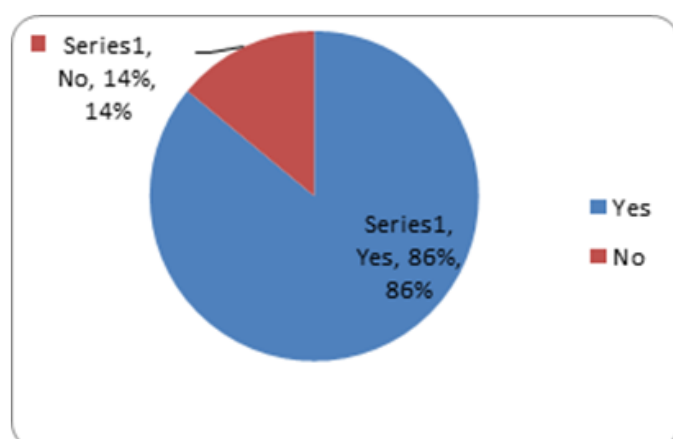


Figure 7. Percentage of people who think people with epilepsy should be employed in jobs like other people.

- 12) What kind of treatment would you suggest? (Figure 6)
- 13) Do you think people with epilepsy should or should not be employed in jobs like other people? (Figure 7)
- 14) What actions would you take if you witnessed someone have a

seizure? (Figure 8)

Result and discussion

According to the response to the community questionnaire that

was distributed in different regions in Oman namely Saham , Bahla, Nakhal and Suaqu, to a total of 100 people, following responses were obtained.

Out of 100 people, 77% knew person with epilepsy while 23% said No. 43% of people had seen someone having seizure but on the other side 57% said they had not seen anyone having a seizure. About 60% of people had no idea what to do if there was someone with seizure while 40% of people had an idea of what to do. Most of the people, approximately 64% disagreed to employ a person with epilepsy while 36% agreed. Majority of Omanis, about 98% thought that this disease is not contagious disease and 2% felt that it's contagious. About 58% said Yes that epilepsy patients must avoid flashing lights while 42% said No. Approximately 42% of people thought that all seizures involved falling to the ground followed by jerking movements. 77% of Omanis said No and about 23% answer Yes when they were asked if all seizures required immediate medical intervention or not. About 39% Omanis thought that epilepsy could affect the person's intelligence while 61% answered with No. About 39% said there is social stigma attached to those who have epilepsy while 61% of people disagreed with that (Figure 4).

For comments questions

1. Majority of the people, about 43% felt that Epilepsy is hereditary, about 36% said that it is Neural and 17% felt that it could be psychological causes and 4% thought that there might be spiritual reason behind that (Figure 5).

2. Regarding its treatment about 65% felt that treatment with medicines is needed while 27% answered herbal or massage and about 4% suggested Holy Quran could be the treatment and (4%) of people said there's unknown treatment (Figure 6).

3. About 86% think people with epilepsy should be employed in jobs like other people while about 14 % disagreed (Figure 7).

4. About 58% of people answered that the patients should be taken to the hospitals while 25% said they can be treated at home and about 17% did not know what to do (Figure 8).

Patient's responses to the questionnaires

According to 50 patient's questionnaires that were distributed in different polyclinics and Health centers such as Saham polyclinic and Nizwa hospital.etc., the results are as such:

Out of 50 patients, 21 (42%) had primary school education, 10 patients (20%) were at the university, about 9 patients (18%) had high

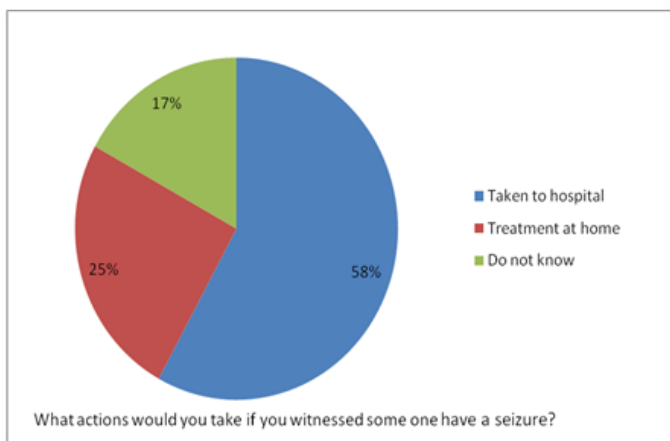


Figure 8. Actions to be taken when someone has a seizure.

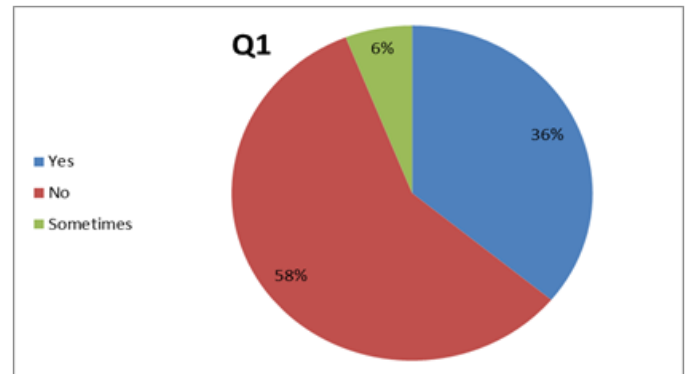


Figure 9. 58% of the patients don't feel comfortable; while 36% said yes and 6% answered that sometimes they felt comfortable telling their friends and families.

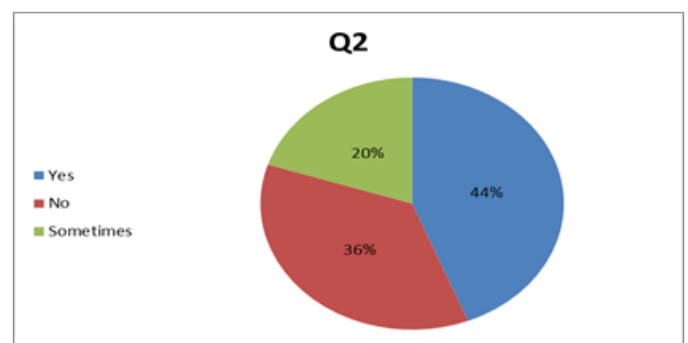


Figure 10. Most of people, about 44% answered Yes, 36% answered No and 20% of people said sometimes it could be.

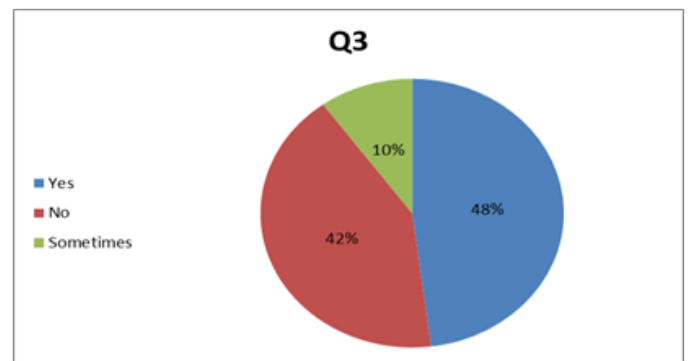


Figure 11. Numbers of patients who answered Yes were 48%, on the other side 42% answered (No) and 10% only said (sometimes).

school education and 10 patients (20%) were illiterate.

The answers to the questions are as follows:

1. Do you feel comfortable telling your friends and family members that you have epilepsy? (Figure 9)

2. According to your experience with disease epilepsy, do you think that has to do with spiritual reasons related to harm and the jinn? (Figure 10)

3. Do you think that friends and family member's attitude towards you changed after you told them that you have epilepsy? (Figure 11)

4. Do you feel that the family has a role in alleviating the symptoms of the disease?

5. Do you think that you receive appropriate treatment and care

necessary for your condition? (Figure 12)

6. Do you feel that your mental abilities have been affected? (Figure 13)

7. Do you have sufficient knowledge about epilepsy in terms of type, its causes and how to cure? (Figure 14)

Q1. Patients with epilepsy can have a high quality of life.

Pie chart shows that the percentage of those who agreed was 50%, 33% disagreed and 17 % were uncertain.

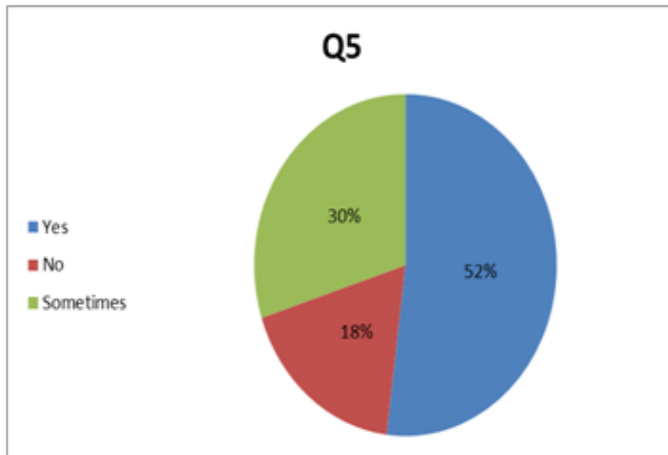


Figure 12. 52% of the patients answered Yes, 18% answered No and 30% said sometimes.

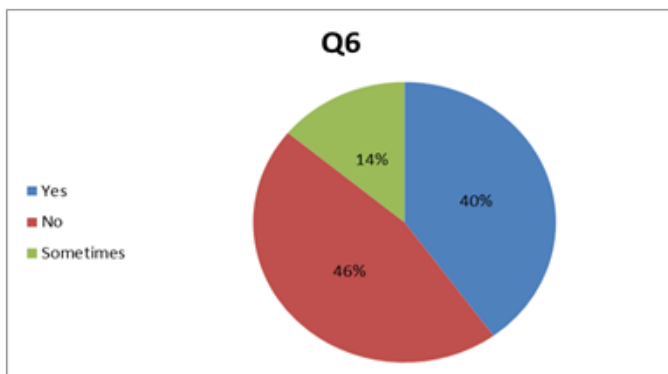


Figure 13. 40% of the patients feel that their mental abilities have been affected while 46% answer No and 14% said sometimes.

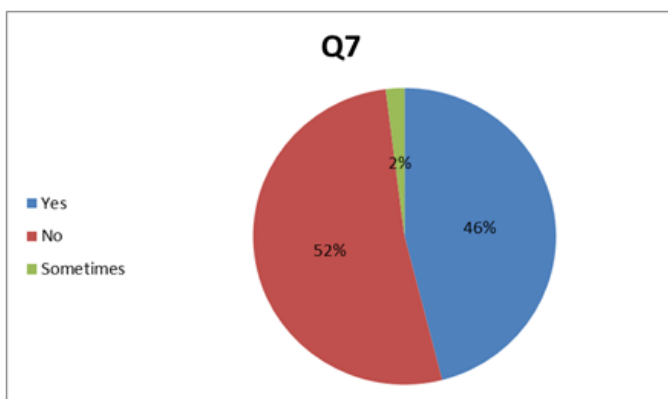


Figure 14. About 52% of patients answered No, on the other side 46% of patients said that they did have sufficient knowledge about this disease and 2% answered as sometimes.

Q2. Patients with epilepsy are less able than others to establish close relationships.

33% agreed and disagree 67% disagreed

Q3. A lot of people do not understand patients with epilepsy.

50% agreed, 17% disagreed and 33% were uncertain

Q4. A lot of people are afraid of patients with epilepsy.

33% agreed, 33% disagreed and 33% were uncertain

Q5. Although they deny it, a lot of employers discriminate against patients with epilepsy.

33% agreed, 17% disagreed and 50% uncertain

Q6. Patients with epilepsy should avoid strenuous physical work.

50% agreed and 50% disagreed

Q7. Behavioral disturbances are more frequent in patients with epilepsy than in others.

67% agreed, 33% disagreed

Q8. Changes in mood is more frequent in patients with epilepsy than in others.

83% agreed and 17% disagreed

Q9. Emotional imbalance is more frequent in patients with epilepsy than in others.

67% agreed, 17% disagreed and 17% uncertain

Q10. Patients with epilepsy are more aggressive than others.

33% agreed and 67% disagreed

Q11. Patients with epilepsy is more irritable than others.

33% agreed, 50% disagreed and 17% uncertain

Q12. Poor attendance at school or work is more frequent among patients with epilepsy.

67% agreed, 17% disagreed and 17% uncertain

Q13. Patients with epilepsy is less intelligent than others.

17% agreed and 83% disagreed

Q14. Patients with epilepsy are less able to concentrate than others.

67% agreed and 33% disagreed

Q15. Patients with epilepsy are less active than others.

The agreed percentage is as disagreed which is 50%

16. Patients with epilepsy are less productive at work than others.

33% agreed and 67% disagreed

Q17. Patients with epilepsy have more learning difficulties than others.

50% agreed, 33% disagreed and 17% uncertain

Q18. Injuries and accidents at work are more frequent among patients with epilepsy.

33% agreed, 50% disagreed and 17% uncertain

Q19. Patients with epilepsy should avoid stressful mental work.

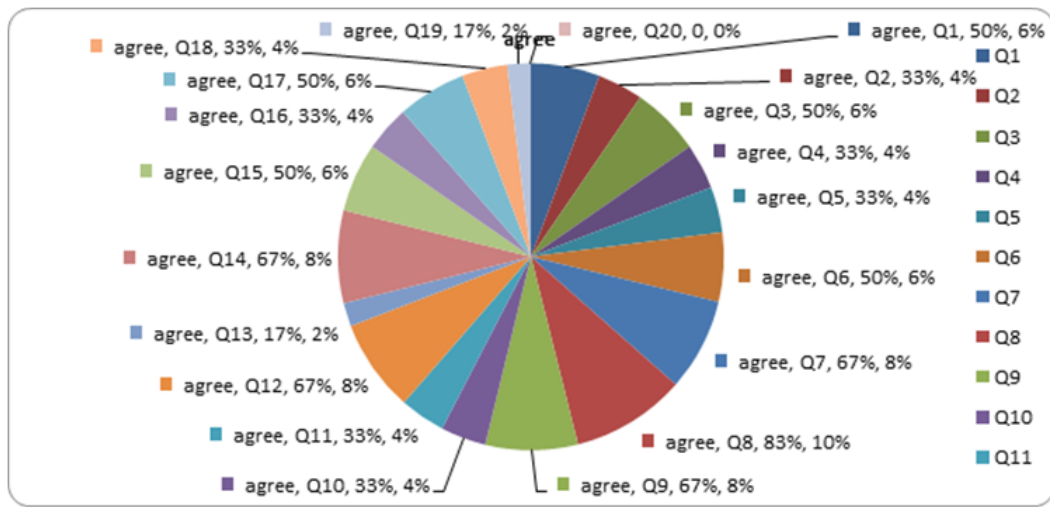


Figure 15. Analysis of doctor questionnaire.

Table 1. Percentage of epileptic patients based on gender.

	Number of males	Number of females
Number of patients in each gender	33	10
Percentage	77%	23%

Table 2. Percentage of epileptic patients based on age.

Range of Age/years	Number of patients in that range	Percentage
(0-12)	1	2%
(12-18)	5	12%
(18-30)	13	30%
(30-60)	24	56%
>60	-	-

Table 3. Pattern of medication use for epileptic patients.

Medication use classification	Number of patients	Percentage
One drug	12	27.9%
Two drugs	9	20.9%
More than two	22	51.1%

Table 4. Percentage of epileptic patients who take one medicine.

Name of antiepileptic agent	Number of patients	Percentage
Sodium valproate	4	33.3%
Carbamazepine	3	25%
Levetiracetam	3	25%
Lamotrigine	2	16.6%

17% agreed, 67% disagreed and 17% uncertain

Q20. Patients with epilepsy should not get married.

100% disagreed

Total number of epileptic patients in the study was 74 in number. The study was conducted on 43 patients. Questionnaires were distributed for patient in different hospitals namely Saham polyclinic, Royal and SQU hospital. 33 (77%) of patients were males and 10 (23%) were females (Table 1).

Patients with epileptic disease who visited neurological department in different age groups were as shown in Table 2. The pattern of medication use for epileptic patients was shown in Table 3. Number of patients who took single antiepileptic agent like Sodium valproate

was 4(33.3%) (Table 4). Patients who took Carbamazepine were 3(25%) and levetiracetam had same percentage. Two patients (16.6%) took Lamotrigine. All two combinations had the same percentage (Table 5).

Summary and conclusion

The main objective of this study was to study some epilepsy cases in Oman by distributing questionnaires to community, doctors and patients. Main aim was to study about its prevalence and treatment in Oman and to analyze the results of questionnaires. All the objectives of this study were achieved. Results of the study showed that epileptic patients were provided by a special drug management in ND by different types of antiepileptics depending on their condition. The most common drug was sodium valproate. On the other side we found that Omanis had Knowledge about this disease but they do lack the

Table 5. Percentage of epileptic patients who take a combination of two medicines.

Name of combination of tow drug	Number of patients	Percentage
Sodium valproate, Lamotrigine	1	11%
Lamotrigine,Carbamazpine	1	11%
Gabapentin, levetiracetam	1	11%
levetiracetam,Phenytoin Sodium	1	11%
Sodium valproate, levetiracetam	1	11%
Carbamazepine,clonazpam	1	11%
Sodium valproate, Carbamazepine	1	11%
Phenytoin Sodium, Carbamazepine	1	11%
Sodium valproate,clonazpam	1	11%

experience on how to deal with this kind of disease. Also we concluded that the number of male patients in Oman is more than female by 54% difference.

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