



Journal Homepage: [-www.journalijar.com](http://www.journalijar.com)
**INTERNATIONAL JOURNAL OF
 ADVANCED RESEARCH (IJAR)**

Article DOI:10.21474/IJAR01/10867
 DOI URL: <http://dx.doi.org/10.21474/IJAR01/10867>



RESEARCH ARTICLE

PUBLIC AWARENESS, KNOWLEDGE, AND ATTITUDES TOWARD EPILEPSY IN THE HAIL REGION, KINGDOM OF SAUDI ARABIA

Abdulaziz Mohammed Alenezi¹, Saud Khalid Alshammari¹, Lama Zaid Al-Hemshy¹, Khalid Melih Alshammari¹, Salem Fayez Alshaghдали¹, Abdullah Hamad Alanazi¹, Hassan Abdulrazaq Alshammari¹, Abdulaziz Muflih Alghaithi¹ and Hussain Gadelkarim Ahmed^{1,2}

1. College of Medicine, University of Hail, Saudi Arabia.
2. Department of Histopathology and Cytology, FMLS, University of Khartoum, Sudan.

Manuscript Info

Manuscript History

Received: 16 February 2020
 Final Accepted: 18 March 2020
 Published: April 2020

Key words:-

Epilepsy, Awareness, Knowledge, Hail, Saudi Arabia

Abstract

Introduction: Epilepsy is a chronic non-communicable disease that affects the brain. There are around 50 million patients with epilepsy worldwide. However, there are a lot of studies have shown a misconception regarding epilepsy among different communities. This study was conducted in the Hail region, Kingdom of Saudi Arabia to measure the level of awareness, knowledge, and behaviors toward epilepsy.

Methods: A cross-sectional study including a questionnaire formed of 14 validated questions, distributed to the people residing in the Hail region, from September 17 to September 26, 2019.

Results: The Questionnaire applied to 384 participants and most of them were less than or equal 25 years old (42.4%). Ninety-four percent of 384 respondents had heard or read about epilepsy and there were only 12% would prevent their children from socializing with a child with epilepsy. While most of the participants (78.4%) agreed that patient with epilepsy has a right to not be barred from a job. Sixty-seven percent of participants cited mental disorder as the most common cause of epilepsy followed by brain disorders and 96.4% of participants chose convulsant and shaking as a symptom of epilepsy followed by loss of consciousness.

Conclusion: The level of awareness and attitudes toward epilepsy in the Hail region were quite good, but society still needs to raise the level of knowledge and correct misconceptions.

Copy Right, IJAR, 2020,. All rights reserved.

Introduction:-

Epilepsy is a chronic non-communicable disease that affects the brain. It is the most common neurological diseases. There are around 50 million patients with epilepsy (PWE) worldwide (WHO, 2019). The prevalence of epilepsy in Arab countries is uneven. In KSA is 6.54 per1000 and in Sudan is 0.9 per 1000. Additionally, about 724,500 have been diagnosed (Al Rajeh et al., 2001). A lot of people have been puzzled and mistaken for what is epilepsy, which could be because of the clinical features of epilepsy. There are many studies confirmed that PWE suffer from stigma and discrimination among different communities (Fong and Hung, 2002; Abduelkarem, 2016; Kartal and Akyıldız, 2016). Moreover, PWE had a high rate of depression (Fiest et al., 2013), which may explain the stigma and the

discrimination. In several cities of KSA, there are many studies have been done to evaluate the public awareness of epilepsy, including Riyadh, Jeddah, Asser, Majmaah, Al-Karj, Tabuk, Shaqra and Qassim (Alaqeel and Sabbagh, 2013; Haneef et al., 2014; Alhazzani et al., 2016; Almutairi et al., 2016; Al-Dossari et al., 2018; Alamri, Alghamdi and Al Quait, 2018; Alshahrani et al., 2019; Alsohibani et al., 2019). According to some of those studies, there was a misunderstanding of epilepsy. However, out of our knowledge, there was no study has been done in the Hail region. This study aimed to assess the awareness, knowledge, and attitudes toward epilepsy in the Hail region, KSA.

Materials and Methods:-

Study design and sample:

A cross-sectional study including a questionnaire formed of 14 questions to assess the awareness, knowledge, and attitudes about epilepsy in the Hail region, northern Kingdom of Saudi Arabia. A validated Arabic copy of the questionnaire has been taken from a study conducted in the Qassim region (Alsohibani et al., 2019). The questionnaire was divided into two parts. The first part included demographic data such as age, gender, marital status, education level, and profession, and the second part included 14 questions to determine the awareness, knowledge, and attitudes about epilepsy. The questionnaire has been hosted by Google form and restricted by email to prevent duplication of the response and get more accurate results. After that, we distributed it to the people residing in the Hail region, from September 17 to September 26, 2019. Our population included male and female Saudi adults above 16 years old.

Ethical consent:

The objectives of the study have been explained to the volunteers and the consent to participate was received before answering the questionnaire.

Data Analysis:

According to the Raosoft online sample calculator, out of all the Hail region 716021 residents (General Authority for Statistics, 2018), almost 384 participants should be sampled so that 95% the confidence level and 5% margin of errors are accomplished. The data was analyzed by using SPSS version 21, and the p-value has been calculated by using the Mann–Whitney U test and Kruskal–Wallis H test to evaluate the correlation between awareness, knowledge and attitudes with demographic data of the participants.

Results:-

The Questionnaire applied to 384 participants. Table1 shows the demographic data of the participants. There were 53.1% women and 46.9% men. Most of them were less than or equal 25 years old (42.4%) and there were 10.4% more than or equal 45 years old. However, 48.4% of them were married. There were 79.4% who have a university education and there were only 3.9% that have a basic education. Half of the participants were employed and 16.1% were unemployed and the ruminants were students.

Of 384 respondents, 94.8% had heard or read about epilepsy (**Table2**), 60.7% knew someone with epilepsy, and 57% had seen what they believed to be a seizure. There were only 12% would prevent their children from socializing with a child with epilepsy. Also, there were 36.5% would object if one of their sons/daughters wanted to marry such a person. Most participants (78.4%) agreed that patients with epilepsy have a right to not be barred from a job, and there were 92.7% do not see any impediments to the success of children with epilepsy in the class with healthy children. There were only 7 participants that believed epilepsy was a form of insanity. When dealing with patients that have seizures, 92.4% would take him/her way from a risk. Another action toward who has a seizure 56.8% putting something in his / her mouth. The last action was to force him / her to take medication. Moreover, seeking medical advice (96.4%), and no need for treatment (87.2%) were the top of the suggestions, while use of acupuncture (9.4%), was the least suggestion.

Chart 1 shows the causes of epilepsy: mental disorder was the highest-rated as 67.7%, followed by brain disorder rated as 66.7%, and hereditary disorder was rated as 48.4%, whereas birth defect 12.8%, blood disorder 11.7%, and contagious disease 2.6% cited relatively low percentages.

Chart 2 presents the distribution of symptoms of epilepsy: convulsions and shaking were the highest 96.4%, followed by loss of consciousness 85.7%, change of behavior 44%, and amnesia 40.1%.

Table 3 shows the correlation between participants' socioeconomic data and their awareness, knowledge, and attitudes. According to the gender and education level of participants, there were no significant differences in awareness, knowledge, and attitudes. However, according to the age, there were significant differences in awareness ($p=0.000$) and attitudes ($p=0.000$) between age group, but that not in knowledge ($p=0.0445$). Awareness ($p=0.000$) and attitudes ($p=0.000$) showed significant differences based on marital status, but there was no difference according to the knowledge ($p=0.091$). Finally, there were significant differences in awareness ($p=0.001$) and attitudes ($p=0.00$) based on occupation, but not according to knowledge ($p=0.406$).

Table 1:- Description of sociodemographic variables.

N (%) (n=384)		
Sex		
• Male	180	(46.9%)
• Female	204	(53.1%)
Age:		
• ≤25	163	(42.4%)
• 26-35	81	(21.1%)
• 36-44	100	(26.0%)
• ≥45	40	(10.4%)
Marital status:		
• Married	186	(48.4%)
• Single	198	(51.6%)
Education level:		
• Basic	15	(3.9%)
• Secondary	64	(16.7%)
• University	305	(79.4%)
Occupation		
• Employed	195	(50.8%)
• Unemployed	62	(16.1%)
• Student	127	(33.1%)

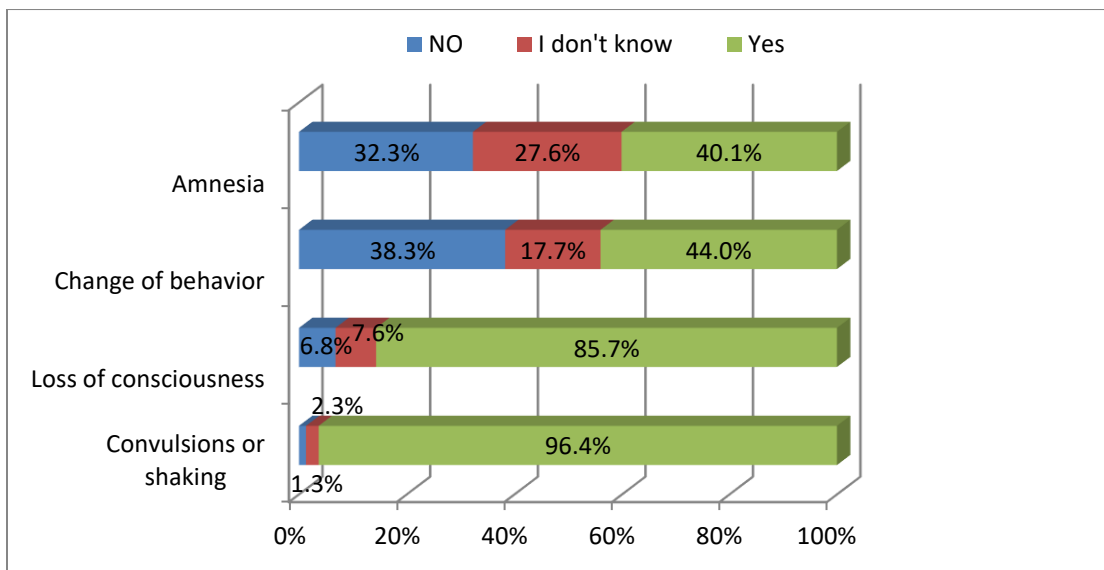


Chart2: Distribution of reported symptoms of epilepsy.

Table 2:- Awareness, knowledge, and attitudes regarding epilepsy(n = 384).

Statement	NO N (%)		I don't know N (%)		Yes N (%)	
Awareness						
Q1. Have you ever heard of or read about the disease called “epilepsy” or “convulsive seizures” (fits)?	20	(5.2%)	0	(0.0%)	36	(94.8%)
Q2. Do you know anyone who has epilepsy?	12	(31.8%)	29	(7.6%)	23	(60.7%)
Q3. Have you ever seen anyone who was having a seizure?	15	(40.4%)	10	(2.6%)	21	(57.0%)
Attitude						
Q4. Would you object to having any of your children in school associate with persons who sometimes have seizures (fits)?	29	(77.6%)	40	(10.4%)	46	(12.0%)
Q5. Would you object to having any of your children play with persons who sometimes have seizures (fits)?	31	(82.8%)	30	(7.8%)	36	(9.4%)
Q6. Would you object to having a son or daughter of yours marry a person who sometimes has seizures (fits)?	13	(35.4%)	10	(28.1%)	15	(36.5%)
Q7. Do you think people with epilepsy should be employed in jobs like other people?	22	(5.7%)	61	(15.9%)	30	(78.4%)
Q8. Can a child with epilepsy be successful in a class with healthy children?	4	(1.0%)	24	(6.3%)	35	(92.7%)
Knowledge						
Q9. Do you think epilepsy is a form of insanity?	36	(94.0%)	16	(4.2%)	7	(1.8%)
Q10. On seeing someone having a seizure, should you: ^a						
1. Keep him/her away from danger	9	(2.3%)	20	(5.2%)	35	(92.4%)
2. Put a piece of cloth or spoon in his/her mouth	83	(21.6%)	83	(21.6%)	21	(56.8%)
3. Force him/her to take his/her medication	21	(56.3%)	10	(26.0%)	6	(17.7%)
4. Spray water on his/her face	14	(36.5%)	9	(24.5%)	15	(39.1%)
5. Restrict/fix him/her to the ground	12	(33.3%)	10	(26.3%)	15	(40.4%)
Q11. Suggestions for friends or relatives with epilepsy: ^a						
6. Medical advice	5	(1.3%)	9	(2.3%)	37	(96.4%)

7. Use herbal medicine	2 2 4	(58. 3%)	1 0 6	(27. 6%)	5 4	(14. 1%)
8. Use acupuncture	1 9 5	(50. 8%)	1 5 3	(39. 8%)	3 6	(9.4 %)
9. Get medicine from a drugstore	2 3 8	(62. 0%)	6 4	(16. 7%)	8 2	(21. 4%)
10. Consult a spiritual healer	1 9 1	(49. 7%)	8 5	(22. 1%)	1 0 8	(28. 1%)
11. Indicate that epilepsy is untreatable	2 6	(6.8 %)	8 3	(21. 6%)	2 7 5	(71. 6%)
12. Indicate that there is no need for treatment	1 7	(4.4 %)	3 2	(8.3 %)	3 3 5	(87. 2%)
Q12. Is there a role for surgical intervention in addressing an advanced epileptic attack?	1 0 7	(27. 9%)	2 1 5	(56. 0%)	6 2	(16. 1%)

Table 3:- Relationships among awareness, knowledge, and attitudes regarding epilepsy based on participants' sociodemographic data (n= 384).

	Awareness Mean \pm SD		Attitude Mean \pm SD		Knowledge Mean \pm SD	
Sex						
• Male	2.5 \pm	0.6	2.1 \pm	0.3	2.1	0.2
• Female	2.4 \pm	0.5	2.1 \pm	0.3	2.1	0.2
p-Value ^a	0.120		0.922		0.346	
Age:						
• ≤ 25	2.3 \pm	0.6	2.0 \pm	0.3	2.1 \pm	0.3
• 26-35	2.5 \pm	0.5	2.0 \pm	0.3	2.1 \pm	0.2
• 36-44	2.6 \pm	0.5	2.2 \pm	0.4	2.1 \pm	0.2
• ≥ 45	2.4 \pm	0.6	2.2 \pm	0.3	2.1 \pm	0.2
p- Value ^b	0.000**		0.000**		0.445	
Marital status:						
• Married	2.6 \pm	0.5	2.1 \pm	0.3	2.1 \pm	0.2
• Single	2.3 \pm	0.6	2.0 \pm	0.3	2.1 \pm	0.2
p- Value ^b	0.000**		0.000**		0.091	
Education level:						
• Basic	2.7 \pm	0.5	2.0 \pm	0.4	2.2 \pm	0.3
• Secondary	2.5 \pm	0.6	2.0 \pm	0.3	2.1 \pm	0.2
• University	2.4 \pm	0.5	2.1 \pm	0.3	2.1 \pm	0.2
p- Value ^b	0.147		0.332		0.107	
Occupation						
• Employed	2.5 \pm	0.5	2.1 \pm	0.3	2.1 \pm	0.2
• Unemployed	2.5 \pm	0.5	2.0 \pm	0.3	2.1 \pm	0.3
• Student	2.3 \pm	0.5	2.0 \pm	0.3	2.1 \pm	0.2
p- Value ^b	0.001**		0.000**		0.406	

SD – standard deviation.

^a p-Value has been calculated using Mann–Whitney U test.

^b p-Value has been calculated using Kruskal–Wallis H

** Significant at $p \leq 0.01$.

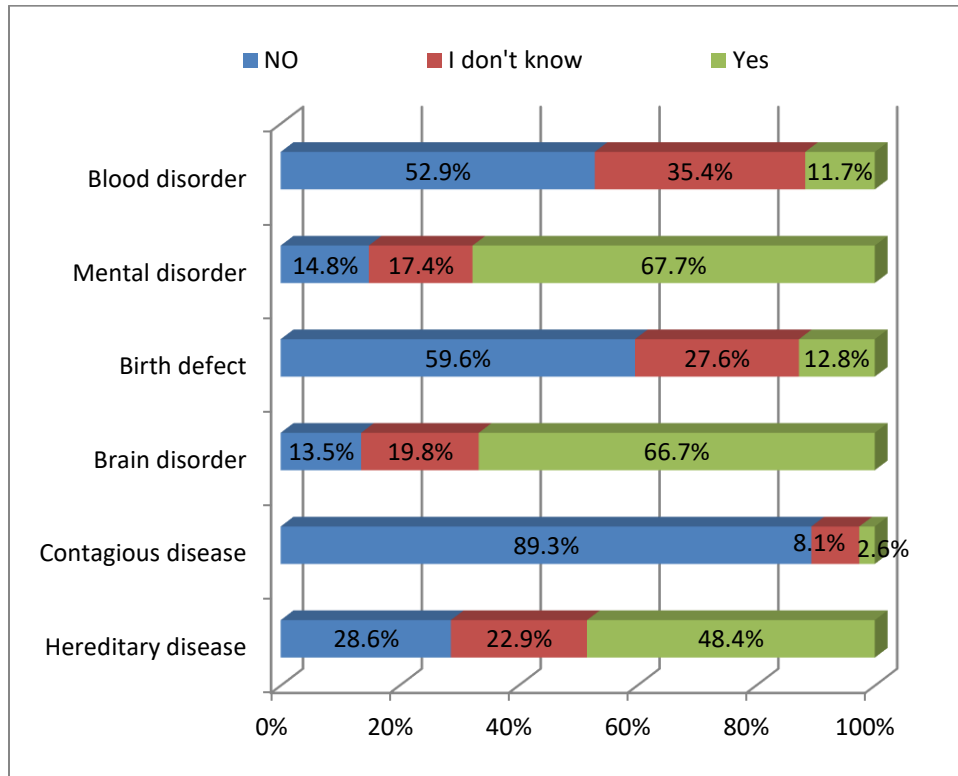


Chart1:- Distribution of reported causes of epilepsy.

Discussion:-

Epilepsy is one of the most common neurological diseases. However, the treatments of epilepsy in general, are very effective. Also, the patients could return to their normal life and stop taking their medication gradually if they were free from seizures for two or five years (WHO, 2019). Even though, until now there is a misunderstanding towards epilepsy. The present study was done in the Hail region, which was similar to previous studies that have been applied in many cities of Saudi Arabia, investigated participants' awareness, knowledge, and attitudes about epilepsy. The current study showed 94.8% had heard or read about epilepsy, 60.7% knew someone with epilepsy, and 57% seen somebody in a seizure. These results compared with several studies were done in Riyadh (Alaqeel and Sabbagh, 2013), Qassim (Alsohibani et al., 2019), and Asser (Alhazzani et al., 2016) were relatively close to each other. In our study, we found only 12% would prevent their children from socializing with a child with epilepsy, which that slightly less than what has been noted in Alhazzani's study (17.6%). Furthermore, there were 36.5% stated that they will object if their son or daughter decides to marry someone with epilepsy, while the percentages in Qassim 45.1%, Jeddah 49% (Haneef et al., 2014) and Majmaah 21.1% (Almutairi et al., 2016). Apart from that, 78.4% agreed that patients with epilepsy should not be prevented from a job because of their condition. Similarly, the previous percentage showed a close rate to Asser's study (77.1%). There were only 7 participants who believed that epilepsy is a form of insanity and that was similar to what Alsohibani found in his study. Regarding the treatment of epilepsy, seeking medical advice was the top of suggestions in the current study (96.4%). In comparison, that was the same as the studies that have been done in Riyadh, and Qassim, respectively (49.3%, 96.5%), while there were 87.2% suggested that there is no need for treatment, and that could be because of the lack of knowledge. In the current study, the top of causes of epilepsy were a mental disorder (67.7%) followed by brain disorder (66.7%), these results were more than what Alhazzani found (29.5% , 21%), but slightly close to the result of the study that has been done in Qassim (61.9% , 68.1). Keeping the patient away from danger (92.4%) was the top of the actions towards a patient experiencing a seizure, which was higher than what Aqeel found in Riyadh (68.6%). Whereas there were 14.1% chose to use herbal medicine, which was less than what has been found in Asser region (68.9%).

Limitation:

Because of the restriction of the questionnaire by the Email a lot of volunteers haven't answered it, because they do not have an email or do not know how to log in.

Conclusion:-

The results of this study show a fairly good level of awareness, positive attitudes and slightly low level of knowledge in the Hail region, Without a doubt, Hail community needs an increase in education about epilepsy, and necessary measures must be taken to raise the level of knowledge about symptoms, causes, and treatment of epilepsy to help eliminate misconceptions among members of society.

Ethical approval:

This research was performed following the approval of the ethical committee in the College of Medicine, UOH.

Funding:

No funding has been received for this study.

Conflict of interest statement:

There is no conflict related to this study among the authors.

Acknowledgments:-

We would like to thank Salhah Qayad Alanazi, Maryam Salamh Alshammari, Seham Herbi Alenzi, Tagreed Alhamedi Al-Shammari and Fayeze Abdullah Alanazi who helped us in the distribution of the questionnaire.

References:-

1. Abdulkarem, A. R. (2016) 'Societal problems that patients with epilepsy are facing in Sharjah, UAE', *Epilepsy & Behavior*. Elsevier, 59, pp. 142–146.
2. Al-Dossari, K. K. et al. (2018) 'Public knowledge awareness and attitudes toward epilepsy in Al-Kharj Governorate Saudi Arabia', *Journal of family medicine and primary care*. Wolters Kluwer--Medknow Publications, 7(1), p. 184.
3. Alamri, S., Alghamdi, A. and Al Quait, A. (2018) 'What Saudi teachers know about epilepsy: A cross-sectional study of Tabuk City', *Epilepsy & Behavior*. Elsevier, 89, pp. 169–172. doi: <https://doi.org/10.1016/j.yebeh.2018.10.024>.
4. Alaqeel, A. and Sabbagh, A. J. (2013) 'Epilepsy; what do Saudi's living in Riyadh know?', *Seizure*. Elsevier, 22(3), pp. 205–209.
5. Alhazzani, A. A. et al. (2016) 'Public awareness, knowledge, and attitudes toward epilepsy in the Aseer region, Saudi Arabia—a community-based cross-sectional study', *Epilepsy & Behavior*. Elsevier, 63, pp. 63–66.
6. Almutairi, A. M. et al. (2016) 'Public knowledge and attitudes toward epilepsy in Majmaah', *Journal of neurosciences in rural practice*. Wolters Kluwer--Medknow Publications, 7(4), p. 499.
7. Alshahrani, A. M. et al. (2019) 'Knowledge, attitude, and believes of epilepsy in local communities of Saudi Arabia', *Journal of Family Medicine and Primary Care*. Wolters Kluwer--Medknow Publications, 8(3), p. 1065.
8. Alsohibani, A. et al. (2019) 'Public awareness, knowledge, and attitudes regarding epilepsy in the Qassim region, Saudi Arabia', *Epilepsy & Behavior*. Elsevier, 92, pp. 260–264.
9. Fiest, K. M. et al. (2013) 'Depression in epilepsy', *Neurology*, 80(6), pp. 590 LP – 599. doi: 10.1212/WNL.0b013e31827b1ae0.
10. Fong, C. G. and Hung, A. (2002) 'Public awareness, attitude, and understanding of epilepsy in Hong Kong Special Administrative Region, China', *Epilepsia*. Wiley Online Library, 43(3), pp. 311–316.
11. General Authority for Statistics (2018) *Population & Demography*. Available at: <https://www.stats.gov.sa/en/1007-0> (Accessed: 9 September 2019).
12. Haneef, D. F. et al. (2014) 'Epilepsy: knowledge, attitude and awareness in Jeddah Saudi Arabia', *BMC genomics*. Springer, 15(S2), p. P61.
13. Kartal, A. and Akyıldız, A. (2016) 'Public awareness, knowledge, and practice relating to epilepsy among adults in Konya', *Epilepsy & Behavior*. Elsevier, 59, pp. 137–141.
14. Al Rajeh, S. et al. (2001) 'The prevalence of epilepsy and other seizure disorders in an Arab population: a community-based study', *Seizure*. Elsevier, 10(6), pp. 410–414.
15. WHO (2019) *Epilepsy fact sheet*. Available at: <https://www.who.int/news-room/fact-sheets/detail/epilepsy> (Accessed: 11 September 2019).