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Perceived Causes of Epilepsy from Society Perspective and its Relationship to Some Variables in Jordan

Dr. Zain Saleh Al Kayed[1], Dr. Safa Mohammad Al Ali[2], Dr. Abdulelah Majdi Fehmi Otoum[3]

Abstract

The current study is aimed at knowing the perceived causes of epilepsy from the societal perspective and its relationship to some variables. The sample consisted of (320) participants; (65) males and (255) females. The measurement tool used in this study had sufficient reliability and validity to justify its use. The results of the study showed that the causes after birth came at the first rank with the highest average of (2.33), in contrast, myth and epilepsy came at the end, with a mean of (1.73), and perceived causes of epilepsy from the societal perspective as a whole was (2.04). Results: There is a superficial contradiction in the mean scores and standard deviations for perceived causes of epilepsy from the society's perspective through diverse classes of variables for gender, age in addition educational qualification. Where the findings presented that there weren't statistically significant differences (α=0.05) due to the effect of gender in all areas except for myth and epilepsy, and the differences came in favor of males. The results also showed that there were statistically significant differences (α = 0.05) due to the effect of age in all areas. There are statistically significant differences (α =0.05) due to the effect of educational qualification in all areas except for superstition and epilepsy.

Keywords: Epilepsy, Society.

Introduction

Fear, anxiety, loss of consciousness, and screams of frightful sounds ringing in the ears, followed by involuntary convulsions all over the body, mainly in the arms and feet. Numbness, dizziness, urinary incontinence, and a strange interference of bright lights in which illusion and reality are mixed. In a way, the culture of some communities views it as "Being touched by Jinn" meanwhile science

[1] Assistant Professor/Ajloun University College/Al-Balqa Applied University

[2] The department head of counseling and special education, The University of Jordan

[3] MD/ Jordan University of Science and Technology

and medicine refer to it as “Epilepsy”, a disease that affects around 50 million of the population according to WHO(40).

From the inherited cultural myths, stigma, and superstitions to the philosophical perceptions of epilepsy which was also known as "The sacred disease", to the Greek Doctor Galen, who gave a religious dimension to it arguing that it “harms the pure divine part in which the brain resides”, since then science worked hard to decipher the truth aiming to give a logical meaning to these myths and tales.

Living and coexisting with this disease might be a little difficult, not because of its apparent physical symptoms, but due to the widespread misconception, fear, and ignorance surrounding this disease. Changing this view is required to make life easier for those affected individuals. The best approach in which we can fight these false beliefs linked to epilepsy is by spreading awareness throughout the community and by educating people about this disease.

Society has a responsibility toward those people, to change these thoughts and misconceptions, to give them fair chances and equal opportunities so they can be an active part of the community. To be able to get the treatment and rehabilitation needed, to drive them from their isolation and anxiety towards letting them rejoin society. This type of contribution is the least we can do toward those with epilepsy. Thus, this study came to do its part towards this issue.

Statement of the study:

The problem is concerned by the following 2 questions:

The first question: What are the perceived causes of epilepsy from society’s perspective in Jordan?

The second question: Are there statistically significant differences at the level of significance (α=0.05) in the perceived causes of epilepsy from society’s perspective in Jordan attributed to the variables of gender, age, and educational qualification?

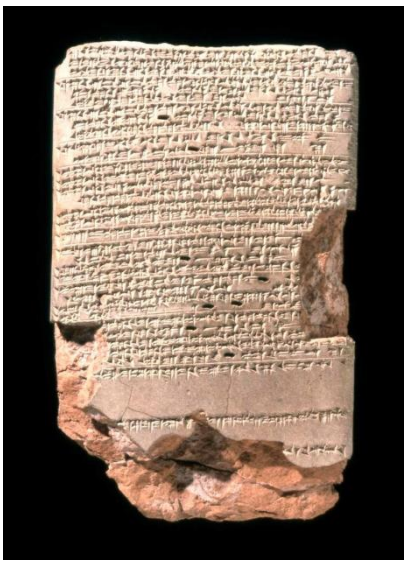
Importance of the study:

1. Providing the strongest, most accurate measurement tools to define the most important causes of epilepsy in jordan.
2. Using the results of the study to conduct awareness campaigns toward epilepsy in Jordan.
3. A scientific addition regarding epilepsy.

Background:

Epilepsy has transcended through history. It has been documented since ancient times and varied throughout the ages in its concepts. From myths and tails to science and reality, Epilepsy descriptions kept changing and evolving. Throughout this time, many misconceptions and false accusations were adopted, and wrongful laws were

established, leading to misjudgment and injustice to those affected by this disease.



Epilepsy can be traced back to the ancient region of Mesopotamia 4000 years ago under the Akkadian Empire who ruled after the civilization of Sumer. A stone tablet was found with the description of the epileptic seizure(1). Epilepsy was also described by the Babylonian Empire in a diagnostic manual stone tablet named Sakikku(2) (Figure 1). A study revealed that the Babylonian's stone tablets also mentioned what's today called schizophrenia-like psychosis of epilepsy(3). An abbreviated part of the text was(4):

summa am̄elu antaˇsubbˆu b̄eˈuri...q̄at etimmi q̄at m̄amˆıti...eli-ˇsu ibaˇsˇsi alˆu lemnu ireddi-ˇsˊu...

which according to the study can be translated in the literal sense to:

"If a man has been suffering from antaˇsubbˆu, b̄eˈuri,q̄at etimmi or q̄at m̄amˆıti, and analˆu lemnu then begins to inflict him with ideas of persecution..."

antaˇsubbˆu in Sumerian means ''The falling disease'' also known as epilepsy.

Epilepsy was also documented in ancient Egypt by Edwin smith papyrus which is, the oldest known surviving trauma text in history(5). The Egyptians performed deep brain stimulation by describing a man with a head wound that will "shudder exceedingly" if touched indicating a physiological response(6). Spiritual beliefs and mythical thinking about epilepsy remained unrivaled until Hippocrates came along in the 5th century BC(7). Hippocrates denied that epilepsy is a sacred disease, instead he claimed that it has a nature and cause like any other disease with no relation to previous spiritual beliefs, and the cause is related to the human brain. Due to his disparity to the common beliefs of epilepsy, Hippocrates' hypothesis had an insignificant effect for a long time until it was proven true far in the future(7).

The reason for the disbelief in Hippocrates' ideas of epilepsy might be due to the huge amount of superstitions and myths that came along through centuries before him, carved into people's heads from one

generation to another. For example, the Hammurabi code, which is a written legal code that was proclaimed by the Babylonian king who reigned from 1792 to 1750 BC which was carved onto a huge finger-shaped black stone(8), stated that if a man purchases a slave '' He could repudiate the purchase of a slave attacked by the bennu sickness within the month (later, a hundred days)'', Bennu means epilepsy(9).

Even in the modern era, the misconception still prevails. For example, in the United States, a person with epilepsy could not marry in 17 states until 1956(10). Also, it was legal to deny a person with epilepsy entry to restaurants, parks, and other public spaces until 1970(11). This shows a significant lack of awareness and the need for more educational efforts for many parts of the community.

Definition:

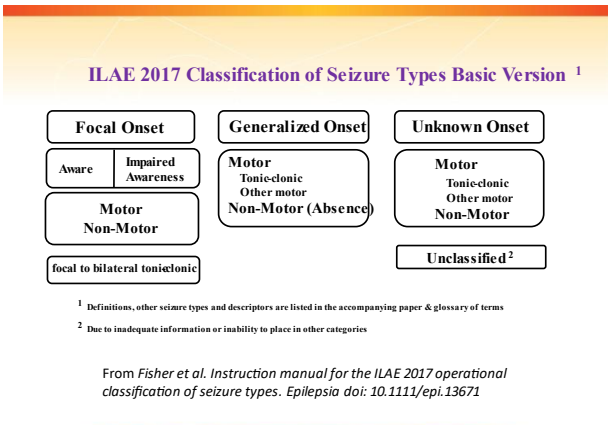
A seizure is defined as a sudden, temporary uncontrolled electrical disturbance between the excitatory and inhibitory neurotransmitters in the brain. It can cause changes in behavior, movements, feelings, and level of consciousness. Having recurrent (two or more) seizures within 24 hours without an identifiable cause is called epilepsy. An aura is a symptom that occurs before a seizure. It serves as a warning to the patient and can either be a feeling, movement, or experience that just seems different(12). An aura may last from several seconds to 60 minutes but is not necessarily found in all types of seizures. Symptoms of aura could be(12):

- Nausea.
- Anxiety.
- Visual changes.
- Auditory and/or olfactory hallucinations.
- Feeling of separation from own body.
- Numbness in the body.

Seizure may be associated with a postictal state, which is the period after a seizure. It may come with nausea, confusion, drowsiness, headache, hypertension, and other symptoms. An ictal state is the active part of a seizure.

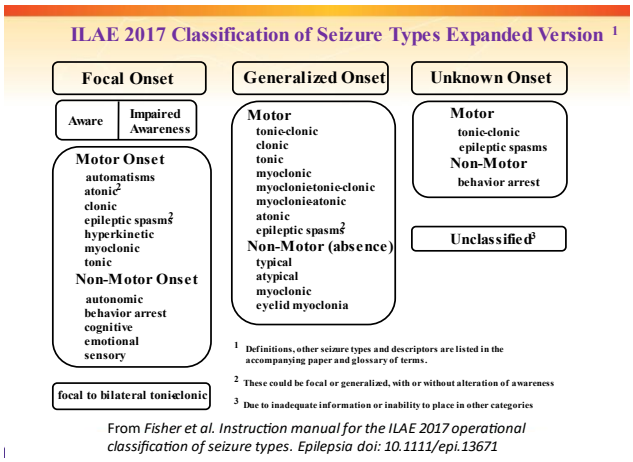
Types:

The international league against epilepsy presented a modified classification for epilepsy in 2017 improving their previous one in 1981. The new classification is subdivided into a basic version, and an expanded version(13). (figure 2-3)



From *Fisher et al. Instruction manual for the ILAE 2017 operational classification of seizure types. Epilepsia doi: 10.1111/epi.13671*

Figure 2



From *Fisher et al. Instruction manual for the ILAE 2017 operational classification of seizure types. Epilepsia doi: 10.1111/epi.13671*

Figure 3

Causes:

The causes of epilepsy vary widely. It could be due to:

- Genetic causes.
- Organic causes.
- Post-partum causes.
- Ante-partum causes.
- Environmental causes.
- Others.

Causes of epilepsy could be primary, idiopathic with no apparent neurological cause. These patients constitute 75% of epileptic patients. While as for the remaining 25% the causes are usually acquired causes causing secondary damage to the brain. These causes include: Meningitis, encephalitis, congenital malformation, brain

tumors, RTA's, and hypoxia(42). Also, it could be due to temporary reasons like head trauma and high fever(43)

Regarding genetics, when there is a suspected or known gene defect(17), we are often faced with generalized epilepsy of idiopathic origin. such as absence epilepsy, juvenile absence epilepsy, juvenile myoclonic epilepsy, and tonic-clonic. Cognition and control in this type are often good(17). Genetic causes in which prognosis is poor and intellectual abilities are affected include CDKL5, ARX mutations, Dravet syndrome, protocadherin 19 female-limited epilepsies, and Down syndrome. The prevalence of epilepsy in down syndrome is 8.1-26%. Due to an increase in health care and the effectiveness of treatment modalities, patients with down syndrome can live longer now, and this leads to a higher prevalence of age-related diseases like epilepsy(15,16).

A study conducted by Simon D. shorvon(14) at university college London (UCL) considering the changing concept for the causes of epilepsy of 150 years duration (1860-2010). The study subdivided the causes into 3 parts of 50 years each, focusing on the first two. These periods were in:

1. 1860-1910: The superstation and myths were proved wrong and put behind us in this part. It mainly focused on giving seizures 2 main categories, a predisposing cause, and an existing cause.
2. 1910-1960: During this period the focus was mainly on hereditary factors and organic brain diseases.
3. 1960-2010: Drastic changes occurred in this period in the fields of biochemistry, genetics, neurology and imaging, methodology, mechanisms, and classification of epilepsy.

Society attitude:

People's thoughts and points of view regarding epilepsy differ greatly from one region to another, keeping in mind other important factors such as:

- Education.
- Socioeconomic status.
- Society and cultural beliefs.

We've divided attitudes in different geographic areas in this study into 3 main regions:

1. Africa

A wide gap in knowledge and uncertainty of epilepsy dominates here. People with epilepsy in those countries live with constant discrimination, being denied their basic human rights of marriage, education, and employment their whole lives(20).

For example, in Nigeria where the prevalence of epilepsy is about 8/1000(21), a study was conducted on 200 people of 101,100 inhabitants in the Muslim majority area of Gyadi quarters of Kano metropolis, northern Nigeria. Most men there worked mainly in trade and as civil servants, while women were housewives. (39%) said that epilepsy demonstrates convulsions, and (25.2%) did not know the cause of it. (19.9%) stated its hereditary and (19.2%) stated its due to brain injury, while (16.3%) linked epilepsy to evil spirit and possession, and the majority of around 47% chose spiritual healing for epilepsy. It's worth mentioning that the area has only one government health clinic, two private clinics, and several traditional healers. With the Aminu kano teaching hospital only a walking distance away(22).

Another study was done in rural parts of the Gedeo zone, in Southern Ethiopia on 732 random people. (27%) of respondents expressed poor knowledge while (56.1%) showed an unfavorable attitude. Stigma and foreseeing epilepsy as gods punishment prevailed(23).

2. Middle East

We can emphasize previously the crucial role of education in demystifying epilepsy. And the higher a person's level of education the more likely his/her to have a positive outcome regarding this disease. But even among these individuals, stigma and false conception still ensue.

In Kuwait, a tragic incident occurred in the December of 2008, when a 16 year old school boy passed away after an epileptic seizure due to poor awareness and untrained staff to deal with the attack. After this incident, a study was done on 842 teachers from 24 random middle and high schools. (90.7%) of participants had bachelor's degrees, (86.5%) were teachers, and (10.6%) senior teachers, and (2.9%) were vice principals or principals. Regarding nationality (58.7%) were non-Kuwaitis versus 41.3% Kuwaiti with a ratio of 1:1.4. The conclusion was that School teachers in Kuwait have relatively poor knowledge about epilepsy (5 out of 13) but hold positive attitudes toward students with epilepsy (10 out of 13). Stigma and false ideas are still present in those educated sample(24).

While in Saudi Arabia, a study was made in Khamis Mushate in 2013 on 315 male teachers. Results were generally positive regarding knowledge, 46% responded that it was caused by electrical discharges, 72.7% of those teachers witnessed seizure episodes but 64.1% couldn't handle it well. Regarding attitude, 79.7% refused the idea of separating children with epilepsy from other children in school, and 94.9% disapproved that this disease is shameful(25). Another study was done in Al-Taif city between 2017-2018 on 290 school teachers. Regarding knowledge, 80% of participants had previous knowledge regarding seizures and 72% witnessed one. 59% thought it was a

mental disorder, and only 2% believed it was contagious. Regarding attitude, 64% of participants refused to let their son/daughter marry someone with epilepsy(26).

In June 2005, a study in Jordan was performed on 16,044 people from all over the country regarding their knowledge and attitude toward epilepsy. Regarding knowledge, 88% had previously read or heard about epilepsy, and 84.7% believed it was due to neurological factors. As for attitude, 9% believe people with epilepsy are insane and 88.5% refuse to let His/her daughter marry someone with epilepsy(27).

3. The United States and Europe:

Even in the modern west, where laws and policies regarding epilepsy are established, such as ADA and IDEA, misconceptions are still evident. This is largely due to the fact that studies in past 10 years focused mainly on already described misconceptions with disregard and little focus on current ones(41).

Method

Statistical Standard

The Quadrilateral Likert scale was adopted to correct the study tools, by giving each of its paragraphs one degree out of four (strongly agree, agree, disagree, strongly disagree), And each degree is numerically represented (1,2,3,4,5) respectively. The following scale was adopted for the purposes of analyzing the results:

From 1.00 – 2.00 Low

From 2.01 – 3.00 Medium

From 3.01 – 4.00 High

The scale was calculated by using the following equation:

(Upper end of the scale (4) – lower limit of the scale (1)/ Number of categories required (3)

= (1–4)/3 = 1.00

and then add the answer (1.00) to the end of each category.

Validity of the Tool

To demonstrate the significance of the scale's construction validity, the correlation coefficients of items and total score, as well as between each item and its correlation with the domain to which it belongs, and the domain to score, were calculated from a pilot sample data. See Table.1

Table 1 Items to domain and item to total score correlation coefficients

item number	correlation coefficient with domain	item number	correlation coefficient with domain	correlation coefficient with the total score	item number	correlation coefficient with domain	correlation coefficient with the total score	correlation coefficient with the total score
1	.60**	19	.64**	.47**	37	.56**	.64**	.40*
2	.39*	20	.60**	.70**	38	.64**	.56**	.56**
3	.59**	21	.46*	.65**	39	.49**	.59* *	.64**
4	.51**	22	.46*	.49**	40	.42*	.47**	.59**
5	.59**	23	.52**	.74**	41	.45*	.57**	.61**
6	.46*	24	.70**	.68**	42	.49**	.50**	.56**
7	.70**	25	.73**	.75**	43	.52**	.64**	.59**
8	.55**	26	.59**	.76**	44	.60**	.53**	.67**
9	.60**	27	.63**	.77**	45	.70**	.55**	.65**
10	.38*	28	.40*	.41*	46	.60**	.57**	.64**
11	.60**	29	.56**	.52**	47	.60**	.41*	.75**
12	.57**	30	.45*	.63**	48	.55**	.60**	.64**
13	.40*	31	.66**	.49**	49	.55**	.61**	.56**
14	.49**	32	.43*	.64**	50	.60**	.66**	.68**
15	.60**	33	.64**	.66**	51	.52**	.41*	.72**
16	.64**	34	.69**	.59**	52	.49**	.63**	.80**
17	.70**	35	.79**	.78**	53	.52**	.51**	.60**
18	.55**	36	.74**	.76**	54	.46*	.55**	.52**

* Statistically significant at the significance level (0.05).

** Statistically significant at the significance level (0.01).

Notable is the finding that all correlation coefficients were statistically significant and of acceptable quality. , and therefore none of these items were deleted. The domain to total score correlation coefficient also was calculated, and table 2 illustrates that.

Table 2 The domain to the total score correlation coefficient

	Genetic factors	Environmental factors	Per-natal factors	Post-natal factors	Diseases	Superstitious factors	Total Score
Genetic factors	1						
Environmental factors	.529**	1					

Per-natal factors	.416*	.643**	1				
Post-natal factors	.400*	.600**	.805**	1			
Diseases	.433*	.602**	.684**	.801**	1		
Superstitious factors	.462*	.457*	.405*	.378*	.509**	1	
Total Score	.544**	.871**	.808**	.829**	.836**	.690**	1

Statistically significant at the significance level (0.05).

** Statistically significant at the significance level (0.01).

Table.2 illustrates that all correlation coefficients were acceptable and statistically significant, which indicates an appropriate degree of validity.

Instrumentation Reliability

To investigate the reliability of the study instrument test-retest was calculated and table.3 shows the person correlation of test- retest reliability.

Table 3 Instrument reliability using test-retest and internal consistency reliability

The domains	Person correlation of test-retest	Cronbach's alpha for internal consistency
Genetic factors	0.84	0.82
Environmental factors	0.82	0.75
Per-natal factors	0.81	0.71
Post-natal factors	0.80	0.76
Diseases	0.79	0.77
Superstitious factors	0.83	0.81
Total Score	0.89	0.84

Study sample:

Table 4 Frequencies and percentages according to the study variables

		Frequency	Percent
Gender	Male	65	20.3
	female	255	79.7
Age	18 or less	40	12.5
	19-25	190	59.4
	26-35	30	9.4
	36-45	24	7.5
	more than 45	36	11.3

Education	Tawjehi or below	27	8.4
	Diploma	33	10.3
	Bachelor	232	72.5
	Graduate	28	8.8
	Total	320	100.0

Means and standard deviations of the perceived causes of epilepsy were extracted from the community's perspective and the table.5 illustrates that.

Table 5 Mean and standard deviations of perceived causes of epilepsy

The level	std. Deviation	Mean	The Domains	Rank
Average	.719	2.33	post-natal factors	1
Average	.675	2.25	diseases	2
Average	.679	2.18	environmental factors	3
Average	.643	2.05	Per natal factor	4
Low	.529	1.88	genetic factors	5
Low	.497	1.73	Superstitious factors	6
Average	.468	2.04	Total score	

Table 5 illustrates that the averages ranged between 1.73-2.33 where post-natal factors are ranked first with the highest mean of (2.33), while the Superstitious factors ranked last, with a mean of (1.73) and the mean of perceived causes of the total score is (2.04).

Std. Deviation	Mean	Items	
.786	1.67	a1	
.880	2.18	a2	
.852	1.73	a3	
1.003	2.06	a4	
.920	1.78	a5	
.926	1.84	a6	
1.017	2.51	a7	
1.003	2.27	a8	
.949	1.83	a9	
.910	1.90	a10	
.936	2.09	a11	
1.039	2.43	a12	
1.040	2.56	a13	
1.013	2.10	a14	
.990	2.19	a15	
.955	2.32	a16	

Std. Deviation	Mean	Items	
1.022	2.38	a17	
.955	1.91	a18	
.982	2.70	a19	
.981	2.02	a20	
.823	1.61	a21	
.732	1.45	a22	
.960	2.50	a23	
.989	2.38	a24	
1.021	2.37	a25	
1.050	2.52	a26	
1.044	2.38	a27	
1.007	2.36	a28	
1.062	2.26	a29	
.936	1.91	a30	
1.040	2.55	a31	
.960	1.97	a32	
.973	2.58	a33	
1.007	2.38	a34	
.985	2.27	a35	
.932	2.14	a36	
1.011	2.48	a37	
1.021	1.96	a38	
.740	1.35	a39	
.896	1.58	a40	
1.028	1.80	a41	
1.046	1.87	a42	
.940	1.80	a43	
.876	1.77	a44	
.711	1.38	a45	
.799	1.54	a46	
.752	1.43	a47	
.602	1.29	a48	
.654	1.35	a49	
1.018	2.23	a50	
.871	2.75	a51	
.815	1.52	a52	
.744	1.40	a53	
.976	2.58	a54	

To explore the perceived causes attributed to some variables; gender, age, and educational qualification, the mean and standard deviations of the perceived causes of epilepsy were calculated, and table.6 illustrates that.

Table 6 Means and standard deviations of the perceived causes of epilepsy according to the variables of gender, age and educational qualifications

			genetic factors	Environmental factors	per-natal factors	post-natal factors	diseases	Superstitious factors	Total Score
Gender	Male	Mean	1.95	2.32	2.05	2.46	2.38	1.84	2.15
		std. Deviation	.577	.593	.578	.619	.611	.443	.360
	Female	Mean	1.87	2.14	2.05	2.29	2.21	1.70	2.01
		std. Deviation	.516	.695	.660	.739	.688	.507	.488
Age	18 or less	Mean	1.95	2.07	2.00	2.30	2.36	1.91	2.07
		std. Deviation	.597	.598	.589	.634	.682	.462	.413
	19-25	Mean	1.94	2.31	2.14	2.40	2.30	1.76	2.11
		std. Deviation	.516	.714	.674	.767	.690	.530	.489
	26-35	Mean	1.78	1.97	1.81	2.03	2.02	1.50	1.81
		std. Deviation	.537	.633	.581	.590	.554	.382	.385
	36-45	Mean	1.74	1.96	1.89	2.22	2.10	1.50	1.86
		std. Deviation	.366	.563	.601	.615	.569	.293	.374
	more than 45	Mean	1.71	1.95	1.96	2.29	2.12	1.65	1.92
		std. Deviation	.561	.531	.535	.652	.701	.438	.433
Education	Secondary school certificate or below	Mean	1.70	2.14	1.91	2.38	2.24	1.71	2.00
		std. Deviation	.530	.465	.491	.507	.685	.379	.323
	Diploma	Mean	1.88	2.18	2.19	2.42	2.25	1.91	2.13
		std. Deviation	.568	.705	.606	.754	.734	.686	.578
	Bachelors	Mean	1.90	2.19	2.05	2.30	2.25	1.71	2.03
		std. Deviation	.525	.699	.664	.741	.669	.476	.465
	Graduate	Mean	1.90	2.11	2.09	2.40	2.22	1.64	2.01
		std. Deviation	.509	.672	.636	.680	.685	.487	.482

X =Means Z = Standard deviation

Table 6 illustrates an apparent difference in mean and standard deviations of the perceived causes of epilepsy due to the different categories of variables of gender, age, and educational qualification.

To determine the significance of the statistical differences between the means, a Three way ANOVA was used, see table.7

Table 7 Three-way ANOVA analysis of differences according to gender, age, and educational variables from the point of society.

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.
Gender Hotelling's Trace=0.039 Sig.=0.067	genetic factors	.583	1	.583	2.150	.144
	Environmental factors	1.499	1	1.499	3.415	.066
	per-natal factors	.011	1	.011	.026	.871
	post-natal factors	1.439	1	1.439	2.854	.092
	diseases	1.531	1	1.531	3.411	.066
	Superstitious factors	1.331	1	1.331	5.818	.016
AGE Wilks' Lambda=0.859 Sig.=0.003	genetic factors	3.353	4	.838	3.089	.016
	Environmental factors	8.474	4	2.119	4.825	.001
	per-natal factors	5.613	4	1.403	3.490	008
	post-natal factors	5.747	4	1.437	2.848	.024
	diseases	4.426	4	1.106	2.466	.045
	Superstitious factors	5.039	4	1.260	5.505	.000
EDUCATION Wilks' Lambda=0.924 Sig.=0.141	genetic factors	1.835	3	.612	2.254	.082
	Environmental factors	.986	3	.329	.749	.524
	per-natal factors	2.383	3	.794	1.975	.118
	post-natal factors	2.351	3	.784	1.554	.201
	diseases	.677	3	.226	.503	.681
	Superstitious factors	2.004	3	.668	2.919	.034
Error	genetic factors	884,409	311	.271		
	Environmental factors	136,566	311	.439		
	per-natal factors	125.048	311	.402		
	post-natal factors	156,873	311	.504		
	diseases	139,558	311	.449		
	Superstitious factors	71.159	311	.229		
Corrected Total	genetic factors	89,262	319			
	Environmental factors	146.936	319			
	per-natal factors	131,875	319			
	post-natal factors	164.742	319			
	diseases	145.438	319			
	Superstitious factors	778,866	319			

It's evident from table (7) that:

There are no significant differences ($\alpha = 0.05$) attributed to the effect of gender in all domains except for Superstitious factors the differences were in favor of males .

The result also shows that there are significant differences according to the age variable in all domains. Scheffe'test was used to illustrate the statistically significant differences between the means scores

For qualifications variable results indicated that there is no statistically significant difference (α = 0.05) qualifications except for Superstitious factors. Scheffe'test was used to illustrate the statistically significant differences between the means scores.

Table 8 Three-way ANOVA analysis of differences according to gender, age, and educational variables from the point of society.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Gender	1.110	1	1.110	5.425	.020
AGE	4.818	4	1.205	5.886	.000
Education	1.328	3	.443	2.164	.092
Error	63,642	311	.205		
Total	1401.056	320			
Corrected Total	69.888	319			

It is evident from table (8) that:

There are significant differences (α = 0.05) due to the gender variable, with a value of 5.425 in which the statistical significance difference is in favor of males .

Results also indicated that there are statistically significant differences (α = 0.05) due to the effect of age, with a value of 5.886 Scheffe'test was used to explore post Hoc comparisons as shown in the table (9) whereas for the educational qualification variable there are no statistically significant differences where the value is 2.16.

Table 9. Post Hoc comparisons using Scheffe'test for means of age variable

genetic factors	18 or less	1.95					
	19-25	1.94	.01				
	26-35	1.78	.17	.16*			
	36-45	1.74	.21	.19	.04		
	more than 45	1.71	.24	.23	.07	.04	
Environmental factors	18 or less	2.07					
	19-25	2.31	.24				
	26-35	1.97	.10	.34*			
	36-45	1.96	.11	.34	.01		
	more than 45	1.95	.12	.36	.02	.01	
Per-natal factors	18 or less	2.00					
	19-25	2.14	.14				

	26-35	1.81	.19	.34*			
	36-45	1.89	.11	.25	.08		
	more than 45	1.96	.04	.19	.15	.06	
Post-natal factors	18 or less	2.29					
	19-25	2.40	.11				
	26-35	2.03	.26	.37*			
	36-45	2.22	.08	.19	.18		
	more than 45	2.29	.01	.12	.25	.07	
Diseases	18 or less	2.36					
	19-25	2.30	.06				
	26-35	2.02	.34	.28*			
	36-45	2.10	.26	.20	.08		
	more than 45	2.12	.24	.18	.10	.02	
Superstitious factors	18 or less	1.91					
	19-25	1.76	.15				
	26-35	1.50	.41*	.26			
	36-45	1.50	.41*	.26	.00		
	More than 45	1.65	.27	.12	.15	.14	
Total score	18 or less	2.07					
	19-25	2.11	.04				
	26-35	1.81	.26	.30*			
	36-45	1.86	.22	.26	.04		
	more than 45	1.92	.16	.20	.10	.06	

At the level of significance ($\alpha = 0.05$)

It's evident from table (9) that:

There are significant differences according to the age variable of perceived causes of epilepsy in favor of (19-25) years old for the: genetic factors, environmental factors, post-natal factors, diseases, and the total score of the study tool.

The result also indicates that there are significant differences at (□=0.05) according to the age variable of Superstitious factors as perceived causes of epilepsy in factor of age below 18 years old.

Table 10 Post Hoc comparisons using Scheffe'test for means of qualifications variable

Qualifications	Means	secondary school certificate or below	Diploma	Bachelors	Graduate
Secondary school certificate or below	1.71				
Diploma	1.91	.20			

Bachelors	1.71	.00	.20*		
Graduate	1.64	.07	.27*	.07	

It is evident from table 10 that:

There are statistically significant differences according to the qualification variable of perceived causes of epilepsy (Diploma, Bachelor, and graduate)where the significant differences were in favor of participant who has a diploma degree.

Discussion:

Epilepsy is a global problem that affects between 2% and 3% of the world's population. 75% of cases begin before adolescence. Epilepsy results from genetic, structural, functional, or unknown causes. The global prevalence and incidence of epilepsy and the death rate resulting from epilepsy are not equal in different countries of the world. As it depends on multiple factors, including geographic, economic, and social factors. It is higher in developing countries compared to developed countries, and it is also striking that in these countries, the incidence rate exceeds the prevalence rate, which indicates that a large number of patients have died. Therefore, this study came to answer questions related to societal awareness of epilepsy, as scientific knowledge allows the field to better deal with the disease, which limits the social problems resulting from epilepsy.

To explore the perceived causes of epilepsy, mean scores, and standard deviations of the perceived causes of epilepsy were extracted from society's perspective, where the causes of post-natal factors came in the first rank with the highest mean scores, whereas Superstitious factors came in the last place(28,29,30).

About diseases, which ranked second, the results of this study were confirmed by other studies(31,32) and regarding environmental factors, many studies have confirmed the role of these causes(33,34) such as infection of the pregnant mother with infectious diseases (German measles, syphilis, AIDS ....) malnutrition of the pregnant mother, lack of oxygen, radiation exposure, mother's exposure to water and air pollution, mother's age during childbearing (older mother's age), injuries to the mother during pregnancy, taking medications, drugs, sedatives, and the mother's consumption of alcohol during pregnancy. Mother taking narcotics during pregnancy, poisoning of the pregnant mother (for example, drug, food poisoning, poisoning with toxic substances), psychological stress for a pregnant mother, the mother suffering from mental or neurological diseases, and poor healthcare for the pregnant mother.

Regarding genetic factors, studies have supported the genetic aspect as one of the most important causes of epilepsy(35,36), such as genetic family history of the father or mother (genes in general), genetic family history of the mother, family medical history on the father's side and family medical history from the mother's side, congenital brain malformations and Rh factor difference between mother and child.

As for Superstitious factors, which ranked last, this result is logical in light of modern global conditions and the availability of means of obtaining information in an easy and accessible way, which reduced the possibility of looking at epilepsy far from scientific thinking. In response to the results of these studies, no study confirmed the responsibility of any of the factors that were addressed as a definitive cause of epilepsy, as some cases were interpreted according to these results, but there is no single factor responsible for explaining all these causes(37,38).

To investigate the perceived causes of epilepsy according to gender, age, and qualifications, mean scores, and standard deviations of the perceived causes of epilepsy were extracted. The results showed that there were no statistically significant differences (α=0.05) due to the effect of gender in all areas except for Superstitious factors, and the differences came in favor of males which agrees with the findings of Polit and Hills(35,36). There aren't statistically significant differences (α=0.05) due to the effect of age in all domains and there are no statistically significant differences (α=0.05) due to the effect of educational qualifications in all domains except for Superstitious factors which matched with the results of Follansbee(39).

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