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Article

Patient Beliefs toward Epilepsy

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Abstract: Epilepsy is a common chronic brain disorder that affects people of all ages, genders, races, income statuses, and geographic locations. Approximately 7.6 out of every 1,000 individuals will experience epilepsy at some belief in their life. The most significant factors contributing to this are negative beliefs about the risks associated with epilepsy and feelings of being unable to control it. Pre-experimental design, with pre-and post-tests for a single group, was the method utilized in this study. The study was conducted at the Baquba Teaching Hospital's adult neurology outpatient clinics in the Diyala Governorate of Baquba City, Iraq, that begins between (July 11th, 2023, and December 5th, 2023). A sample of 100 epileptic patients, including both genders, was chosen using convenience sampling. The Epilepsy Beliefs Scale (EBS) was employed to collect data for this study. Both descriptive and inferential statistics were used in the statistical analysis. The patient's Belief about Epilepsy has enhanced as an effect of the instructional program. Founded on these outcomes, the present research recommends using the educational program as a guide to acquire beliefs about epilepsy

Keywords: Epilepsy, Beliefs, Patient

1. Introduction

Epilepsy As one of the most prevalent neurological conditions and represents a significant public health issue[1]. The World Health Organization (WHO) estimates it impacts around 50 million individuals globally[2]. Epilepsy is a devastating disorder that effects in neuropsychological impairment [3] .decreased quality of life, and recurrent physical wound, and community humiliation, poor educational performance, reduced employ rates, and a shortened lifespan[4]. The majority of beliefs about epilepsy are due to a lack of knowledge about the condition[5]. As a result of this misunderstanding, people with epilepsy (PWE) are often perceived in a negative belief about epilepsy [6]. The presentation of seizures varies greatly depending on the type of seizure and the location of the brain lesions causing epilepsy[7]. The severity of the disease can range from mild, non-disabling seizures to severe, prolonged seizures that can reason significant injury. As a result of the different manifestations of epilepsy, it was once considered a mysterious condition associated with misunderstanding, beliefs, and social stigma, additionally, epilepsy is often associated with cognitive impairment and psychological disorders, further stigmatizing individuals with epilepsy (PWE).[8]

2. Materials and Methods

This study utilized a pre-experimental design (one group) by administering the Epilepsy Beliefs Scale (EBS) as pre-and post-tests to the study sample.

Study Setting

Data collection for pre- and post-tests in this study involved using a developed instrument to collect data. The primary purpose of the questionnaire was to collect Beliefs about epilepsy from participants between (July 11, 2023, and December 5, 2023) the study took place at the adult neurology outpatient clinic at Baquba Teaching Hospital in Diyala Governorate, Baquba City, Iraq. This Hospital was selected due to its status as one of the largest centers, consist of number department such as respiratory care unit (RCU), a cardiac care unit (CCU), intensive care unit (ICU), an emergency unit, a cardiology unit, consulting units, and an outpatient department of psychiatry and neurology. The patient involved in the study has epilepsy.

Study Sample

The study a convenience sampling approach was utilized to select the sample. Patients provided their oral informed consent before being referred to a neurologist. The patients completed questionnaires, and the neurologist conducted interviews to collect baseline data. Participants were given verbal instructions on how to properly fill out the questionnaire. Epileptic patients were chosen from individuals who had visited the epilepsy clinic and a patient had one or more seizures in the previous year history of epilepsy. The final sample consisted of 100 participants of both genders.

Study Instrument

When following the guidelines, a questionnaire was utilized as a research tool for both the pre- and post-tests. The questionnaire consisted of twelve questions regarding the patient's Beliefs of epilepsy. The Epilepsy Beliefs Scale, originally developed in English and then translated into Arabic using back-to-back translations, was employed to collect data for this study. Thapa et al. (2017)[40] initially created the 12-question EBS questionnaire to assess Beliefs; the reliability of internal consistency is a crucial aspect of the study tool. In the split-half approach, the Cronbach's alpha correlation coefficient is calculated to determine this reliability. To assess this, data was collected from (10) patient. The study's findings indicate that the Epilepsy Scale demonstrates adequate internal consistency (0.775), qualifying it as a reliable measurement tool. This part embraces (3) item which is measured on 3-level type Likert scale of "agree =3, disagree =2 and strongly disagree = 1." Responses were classified as good (2.1-3), moderate (1.2-2), and poor (0.1–1). In addition to epilepsy-related Beliefs, the questionnaire also inquired about Sociodemographic characteristics and past medical history related to epilepsy Beliefs in patients.

Data Analysis

Data analysis procedures were applied to tables to find the general sample results and compare variables. Variables such as mean scores, frequencies, percentages, paired t-tests, and Pearson correlation coefficient tests were utilized. Additionally, inferential data analysis was conducted. The reliability of the study instrument was evaluated using Cronbach's Alpha.

Ethical Consideration

The Ethics Committee of the College of Nursing has approved the study. Oral consent was obtained from adult neurology outpatient clinic participants, who self-reported their information. All patients voluntarily agreed to participate in the study.

Results of the Study

Tables and figures presenting the research findings utilize descriptive and inferential statistical techniques. The data necessary to achieve the objectives of the current study is included in these tables and figures.

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Table 1. Descriptive Statistic of Sample Characteristics

Variables	Classification	Freq.	%
Age	**Mean 33.77**	**Sd 1.107**	
Gender	Male	84	84.0
	Female	16	16.0
	Total	100	100.0
Marital Status	Married	24	24.0
	Single	53	53.0
	Divorced	13	13.0
	Widow	6	6.0
	separated	4	4.0
	Total	100	100.0
Level of Education	Elementary school	59	59.0
	High school	26	26.0
	diploma degree	10	10.0
	College degree	5	5.0
Socioeconomic Status	Low	74	74.0
	Middle	20	20.0
	High	6	6.0
	Total	100	100.0
Residence	Urban	64	64.0
	Rural	36	36.0
	Total	100	100.0
Frequency of seizure	day	5	5.0
	Week	8	8.0
	month	41	41.0
	years	46	46.0
	Total	100	100.0

F=Frequency, %= Percent. Arithmetic Mean and Std. Dev. (S.D.).

The distribution of the study sample based on sociodemographic characteristics is outlined in Table 1. The results of this table indicate that the average age of the study group, consisting of 100 patients, falls within the range of 33.67 years.

Regarding gender, there were more men (n = 84) than women (n = 16) in the study group.

In terms of marital status, the majority of the sample (n = 53) were single, while a smaller majority (n = 24) were married.

The largest portion of participants in the research group (n = 59) had an elementary school education, followed by those with a high school education (n = 26) and those with a diploma (n = 10).

In terms of socioeconomic status, the majority of participants in the study group were classified as middle (n = 20) and low (n = 74).

According to the residents, the majority of the research group is urban (n = 64) as opposed to rural (n = 36).

The groups that reported the frequency of seizures for years (n = 46) and months (n = 41) had the greatest participation rate.

Table 2. Distribution of Patients According to Past Medical History:

Question	Answers	Freq.	%
	Generalized	**82**	**82.0**
	clonic seizures	**6**	**6.0**
Types of Seizure	**Myoclonic**	**4**	**4.0**
	Absence seizure	**8**	**8.0**
	Total	**100**	**100.0**
	Yes	**13**	**13.0**
Family History of Epilepsy	**No**	**87**	**87.0**
	Total	**100**	**100.0**
Age of onset for seizures	**Mean 9.900**	**Sd 14.001**	

"(MS) Mean of Scores, (SD) Standard deviation, Level of Assessment (Poor=0.1-1, Moderate=1.2-2, Good= 2.1-3)"

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The distribution of results based on previous medical history is presented in Table 2 using descriptive statistical data. In terms of seizure types, the majority of patients (n = 82) experienced generalized seizures, while the remaining patients (n = 8) had absence seizures.

In terms of family history of epilepsy, the majority of patients (n = 87) in all research samples did not have a history of epilepsy in their family.

Regarding the mean age of seizure onset, the average age of the sample was 9.9 years old.

Table 3. Evaluate Patients' Beliefs about Epilepsy at Pre-test:

List	Items	Weighted	Freq.	%	M.s ±SD	Ass.
1	**Do you think epilepsy can be cured**	Disagree	68	68.0	1.47±0.745	Moderate
		Agree	17	17.0		
		Strongly agree	15	15.0		
2	**Do you think that epilepsy patients can be employed**	Disagree	27	27.0	**1.99±0.732**	Moderate
		Agree	47	47.0		
		Strongly agree	26	26.0		
3	**Do you think epilepsy is a hindrance to a happy life**	Disagree	63	63.0	**1.51±0.732**	Moderate
		Agree	23	23.0		
		Strongly agree	14	14.0		
4	**Is it possible for people with epilepsy to lead a married life**	Disagree	49	49.0	**1.66±0.728**	Moderate
		Agree	36	36.0		
		Strongly agree	15	15.0		

					MS ±SD	Ass.
5	Do you think that epilepsy affects the education of a person	Disagree	49	49.0	±0.6571.57	Moderate
		Agree	36	36.0		
		Strongly agree	15	15.0		
6	Do you think society should discriminate against persons with epilepsy	Disagree	63	63.0	1.52±0.745	Moderate
		Agree	22	22.0		
		Strongly agree	15	15.0		
7	Would you object to sitting in the classroom adjacent to a child with epilepsy or to playing with a child with epilepsy	Disagree	46	46.0	1.69±0.720	Moderate
		Agree	39	39.0		
		Strongly agree	15	15.0		
8	Can people with epilepsy lead a normal sexual life	Disagree	49	49.0	1.66±0.728	Moderate
		Agree	36	36.0		
		Strongly agree	15	15.0		
9	Do you think most of the drugs used in epilepsy treatment cause side effects	Disagree	65	65.0	1.50±0.745	Moderate
		Agree	20	20.0		
		Strongly agree	15	15.0		
10	Do you think visiting religious places helps in curing epilepsy	Disagree	78	78.0	1.29±0.591	Moderate
		Agree	15	15.0		
		Strongly agree	7	7.0		
11	Do you think epilepsy is caused by ancestor's sin?	Disagree			2.65±0.479	Good
		Agree	35	35.0		
		Strongly agree	65	65.0		
12	Do you think exorcism helps to drive away epilepsy spirits from the body	Disagree	67	67.0	1.50±0.772	Moderate
		Agree	16	16.0		
		Strongly agree	17	17.0		
	Total				20.010±2.952	

"(MS) Mean of Scores, (SD) Standard deviation, Level of Assessment (Poor=0.1-1, Moderate=1.2-2, Good= 2.1-3)"

Table (3): shows the evaluation of the beliefs In terms of the statistical mean and standard deviation, this table demonstrated that the moderate responses regard beliefs about epilepsy.

Table 4. Evaluate Patients' Beliefs about Epilepsy at Post-test:

List	Items	Weighted	Freq.	%	M.s ±SD	Ass.
1	Do you think epilepsy can be cured	Disagree	25	25.0	2.26±0.836	Good
		Agree	24	24.0		
		Strongly agree	51	51.0		
2	Do you think that epilepsy patients can be employed	Disagree	69	69.0	1.38±0.616	Moderate
		Agree	24	24.0		
		Strongly agree	7	7.0		
3	Do you think epilepsy is a hindrance to a happy life	Disagree	11	11.0	2.58±0.684	Good
		Agree	20	20.0		
		Strongly agree	69	69.0		
4	Is it possible for people with epilepsy to lead a married life	Disagree	63	63.0	2.40±0.778	Good
		Agree	15	15.0		
		Strongly agree	22	22.0		
5	Do you think that epilepsy affects the education of a person	Disagree	16	16.0	2.53 ±0.753	Good
		Agree	15	15.0		
		Strongly agree	69	69.0		
6		Disagree	32	32.0	1.86±0.697	

	Do you think society should discriminate against persons with epilepsy	Agree	50	50.0		Moderate
		Strongly agree	18	18.0		
7	Would you object to sitting in the classroom adjacent to a child with epilepsy or to playing with a child with epilepsy	Disagree	16	16.0	2.43±0.756	Good
		Agree	25	25.0		
		Strongly agree	59	59.0		
8	Can people with epilepsy lead a normal sexual life	Disagree	60	60.0	1.64±0.847	Moderate
		Agree	16	16.0		
		Strongly agree	24	24.0		
9	Do you think most of the drugs used in epilepsy treatment cause side effects	Disagree	21	21.0	2.39±0.815	Good
		Agree	19	19.0		
		Strongly agree	60	60.0		
10	Do you think visiting religious places helps in curing epilepsy	Disagree	49	49.0	2.65±0.479	Good
		Agree	25	25.0		
		Strongly agree	26	26.0		
11	Do you think epilepsy is caused by ancestor's sin?	Disagree	15	15.0	2.40±0.739	Good
		Agree	30	30.0		
		Strongly agree	55	55.0		
12	Do you think exorcism helps to drive away epilepsy spirits from the body	Disagree	19	19.0	2.26±0.760	Good
		Agree	36	36.0		
		Strongly agree	45	45.0		
	Total				25.090±2.632	

"(MS) Mean of Scores, (SD) Standard deviation, Level of Assessment (Poor=0.1-1, Moderate=1.2-2, Good= 2.1-3)"

Table (4) shows the effectiveness of the instructional program on the patient related to beliefs in the pre- and post-test. Additionally, the results of the study show that there is an excellent improvement in the patient's beliefs at the post-test compared to the pre-test scores.

Table 5. : Summary Statistically Distribution of Overall Patients Belief toward Epilepsy:

Patents Responds	Pre test		Post -test	
	Freq.	%	Freq.	%
1-12 Disagree	4	4.0	41	41.0
13-24 Agree	92	92.0	59	59.0
25-36 Strongly Disagree	4	4.0	41	41.0
Total	100	100.0	100	100.0

According to the Table (5) reveal that there is a highly significant difference in the overall answers of the study sample throughout two measurement periods (pre- and post-test) compared to the statistical belief scores. Additionally, the results of the study show that there is an excellent improvement in the patient's 'belief at the post-test compared to the pre-test scores.

Table 6. Deference between pretest-posttests Belief toward Epilepsy

				95% Confidence Interval Of the Difference				
	Mean	Std.	Std. Error	Lower	Upper	t	df	Sig.

	Deviation	Mean					
Pre Post Beliefs	-5.08000-	3.91237	.39124	-5.85630-	-4.30370-	-12.984-	99	.000

DF: Degree of Freedom; F: Frequency Statistics; sig: Significance; std error: standard Error; t: T-Test

Table (6): showed There is a statistically significant difference (P value =.000) in patients with epilepsy about Belief in the pretest and posttest.

Table 7. Correlation between Demographic Characteristics of Patients with Epilepsy and Effectiveness of an Instructional Program on Beliefs posttest (*n=100*)

Variables	Effectiveness of an Instructional Program on Beliefs		
Patients Age	*Pearson's r*	*.045*	No-sig.
	Sig. (2-tailed)	*0.657*	
Patients Sex Type	*(Chi –square)*	*18.876*	No-sig.
	Sig. (2-tailed)	*0.127*	
Patients Educational Level	*(Chi –square)*	*40.333*	No-sig
	Sig. (2-tailed)	*0.411*	
Patients Marital Status	*(Chi –square)*	*41.961*	No-sig
	Sig. (2-tailed)	*0.839*	
Economic status of patients	*(Chi –square)*	*17.824*	No-sig.
	Sig. (2-tailed)	*0.882*	
Seizure frequency	*(Chi –square)*	*44.020*	No-sig.
	Sig. (2-tailed)	*0.267*	

Table (7) showed that there was no significant correlation between demographic characteristics of patients with epilepsy and effectiveness of an instructional program on Beliefs posttest within all demographical variables.

3. Result and Discussion

This chapter will present an organized analysis and discussion of the findings in a systematic way, supported by relevant research, current studies, and the researcher's perspective. The interpretation of the findings in this chapter will be guided by the goals of the investigation.

Part 1: Discussion of the socio-Demographic characteristics of the study

When analyzing the sociodemographic characteristics of the patients, it was found that the majority of the samples had a mean age of 33.77 years. This aligns with a study conducted on [9,10,11] in Iraq and Denmark, which reported a mean age of 36.5 years for epilepsy patients. The researcher speculated that this could be due to the more active age group being affected. Males comprised 84.0% of the research sample, consistent with a study conducted in London, the UK, and Iraq on [9,12,13,11,11] which found that the majority of adult men (52.6%) had epilepsy, with a mean onset age of 36.5 years (standard deviation = 26.3 years). The researcher suggested that exposure to trauma could be a contributing factor.

The majority of study participants (53%) were single in terms of marital status. Study [14,15,16] support this finding. Studies from Pakistan and Iraq showed that 63% of epilepsy patients were single, with Iraq having the highest percentage at 75.4%. Discussions between the researcher and patients suggested that financial issues may be a contributing factor to the higher number of single individuals.

In terms of Education, the majority of patients (59%) had only completed elementary school. This finding is consistent with research conducted in Turkey and Iraq[17,18] involving sixth-grade elementary school pupils. The researcher suggested that the negative perception associated with frequent epileptic seizures may have impacted the completion of the study. In regards to socioeconomic status, the majority of study patients (74%) with epilepsy in the present study have low socioeconomic status. This outcome is consistent with another study in Baghdad[19]. Which found that 44% of the study sample had moderate socioeconomic status, and in Basrah, Erbil [20,21,22,23] Iraq, where 43.2% of patients had moderate socioeconomic status. The researcher believes that patients have a low economic status due to the increased risk of widespread infections, higher incidence of road traffic injuries, and birth-related harms.

The majority of the study sample resides in urban areas, which is in contrast to a study conducted in West China, Iraq. That study showed that those who resided in rural areas had a higher socioeconomic status than those who lived in urban areas (2.47 vs. 2.03, respectively) [24,25]. The researcher believes that pollutants in urban areas may also be contributing factors.

In terms of seizure frequency, more than half of the study sample (46%) suffers from frequent seizures each year. This result is similar to a study that showed frequent seizures occurring in a significant number of respondents in the U.S.A. (56.2%) and Brazil (40.5%) who described persistent seizures occurring at least once per year[26]. The researcher believes that patient compliance with treatment leads to a reduction in epileptic seizures.

Part 2: Discussion of the Distribution of Patients According to Past Medical History of the study:

The findings of the current study revealed a significant past medical history, with 82% of the patients experiencing generalized seizures or grand mal seizures. This aligns with a study conducted by [27], which found that generalized seizures were the most common type, accounting for 75% of patients' seizures. Grand mal seizures, also known as generalized seizures, were identified as the most prevalent type of epilepsy. In a door-to-door research study conducted by AL Ataa in Iraq[28], grand mal epilepsy was also found to be the most common type, with 87% of participants not having a family history of the condition. However, an Iranian study suggested a 75% likelihood of developing epilepsy if there was a family history of the disorder. The study also emphasized that idiopathic epilepsy is a significant contributing factor. According to the current investigation; most patients experienced their first seizure at an average age of 9.90 years, which is a common age for seizures to onset. A study conducted at the Teaching Hospital in Sulaymaniyah, Iraq, found that the majority of children were diagnosed with epilepsy at the age of [29]. The researcher suggested that this could be attributed to the individuals under study having a higher risk of epilepsy due to febrile episodes.

Part 4: Discussion difference in between pretest-posttests Beliefs toward Epilepsy

The results of the study show a significant change in the patients' beliefs between the pre- and post-test scores. The pretest score (20.010) of the study group indicates moderate

responses regarding beliefs about epilepsy, while the post-test score (25.090) suggests a positive change in their beliefs about epilepsy. This finding aligns with a study conducted in Uganda[30], which found that patients with epilepsy who receive regular medical management have different beliefs about epilepsy, its treatment, and the rights of individuals living with the condition compared to the general population. There is still a prevalence of incorrect knowledge and negative beliefs towards epilepsy and people with epilepsy (PWE) in the community. These beliefs not only contribute to feelings of shame but also delay patients' access to medical care. Additionally, the use of religious methods of therapy alongside medical treatment can further complicate the care of PWE. The study also revealed that religious beliefs, rituals, and support from family members play a significant role in helping individuals cope with epilepsy[31]. These findings are consistent with a study conducted in London, UK, highlighting the importance of receiving proper medical care for the condition. The study detailed belief experiences in patients with epilepsy and underscored significant similarities and differences in these experiences across various sociocultural contexts[32]. This study aligns with research conducted in Turkey, where patients provided significantly fewer correct responses regarding epilepsy beliefs, even after considering educational background and other potential factors. The researchers suggested that this could be linked to historical beliefs about epilepsy that are prevalent among certain populations.

Part 6: Discussion of the correlation between socio-demographics and the effectiveness of an instructional program on patient Beliefs of epilepsy.

The present research evaluates the relationship between socio-demographic characteristics and the effectiveness of an instructional program about the beliefs of patients with epilepsy. Concerning the socio-demographic characteristics of patients ranging in age, the results show that there is no statistically significant correlation between the patient's age and the instructional program at $p = 0.657$. This result is in disagreement with Finding, which was conducted in the UK and found a significant and moderate inverse correlation with age[33].

In regards to the patient's sex, the results show there is no significant relationship between the patient's sex and the effectiveness of an instructional program on beliefs; at $p = 0.127$, these results are compatible. No other significant sex differences in beliefs were found[34,35]. Regarding the patient's educational level, the current study's statistical analysis shows no significant relationship between the instructional program and beliefs ($p = 0.411$). This result is in disagreement with a study conducted in the United Kingdom, where a significant relationship between educational-level differences in beliefs was found[36].

The current findings showed that there were no statistically significant differences between patients' marital status and the instructional program on beliefs of patients with epilepsy at $p = 0.839$, matching the outcomes of another study[37,38]

Concerning the economic status of patients and the instructional program on the beliefs of patients with epilepsy, they were not significantly correlated at $p = 0.882$. This result was derived from a study conducted in the USA, showing that patients' epilepsy and beliefs are not significantly correlated with socioeconomic status[39].

The current study result shows that there were no statistically significant differences between seizure frequency and the instructional program on the beliefs of patients with epilepsy at $p = 0.267$. These findings were similar to those conducted in South Africa, where no statistically significant correlation was found between the instructional program and the frequency of seizures[40].

4. Conclusion

The concludes by providing recommendations based on the previously interpreted and discussed results. The study results show that patients have insufficient beliefs about epilepsy. The instructional program has a positive effect on improving patients' beliefs about epilepsy. The study found no statistically significant relationship between patient beliefs and socio-demographic characteristics such as age, education level, social status, and income, and then there are statistically significant differences between the pretest and posttest of patient beliefs about epilepsy. Based on the results, the

study recommends using the instructional program as a guide for improving beliefs about epilepsy. Implement educational and training programs, including regular lectures for nursing staff and community members, to enhance patient expertise and improve beliefs about epilepsy. Create specific booklets aimed at educating patients about epilepsy and their beliefs. The researcher recommends conducting further studies on how to effectively assist epileptic patients.

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