

EFFECTIVENESS OF EDUCATIONAL PROGRAM ON KINDERGARTEN TEACHERS KNOWLEDGE ABOUT EPILEPSY, IRAQ

¹Shatha Ahmed M. A., ²Muna Abdul Kadhum Zeidan and ³*Dr. Zeena Jamal Alkhazraji

¹Assistant Professor (M.Sc.)/ Medical Technical Institute/(Al-Mansur)/Middle Technical University/Iraq.

²Assistant Professor (M.Sc.)/Community Health Dep. College of Health and Medical Techniques /Middle Technical University/Iraq.

³Lecturer(FIBMS)/ Medical Technical Institute/(Al-Mansur)/Middle Technical University/Iraq.

Received date: 25 October 2024

Revised date: 16 November 2024

Accepted date: 06 December 2024



*Corresponding Author: Dr. Zeena Jamal Alkhazraji

Lecturer(FIBMS)/ Medical Technical Institute/(Al-Mansur)/Middle Technical University/Iraq.

ABSTRACT

Background: The knowledge of teachers regarding epilepsy is crucial, as they significantly influence children experiencing seizures at school. They are essential in offering educational support to epileptic children and fostering effective communication between epileptic and non-epileptic peers. **Objective:** The objectives of this study are to assess kindergarten teachers' knowledge on epilepsy and to evaluate the efficacy of an instructional program on their understanding of the condition. **Methods:** The present study utilized a quasi-experimental design. The research period started on 1st October 2021 and concluded on 20th January 2022. A non-probability sample was recruited from the Al-Rusafa Third Education Directorate kindergarten in Baghdad City. The sample was split into two groups: one study group consisting of 30 teachers and one control group including another 30 teachers. Validity is assessed by a panel of twelve specialists in healthcare, each with over nineteen years of expertise. **Results:** The study determined that the majority of the sample exhibited inadequate understanding of epilepsy among kindergarten students at the Al-Rusafa Third Education Directorate in Baghdad. The educational program used in the research group enhanced teachers' understanding of epilepsy, hence validating the program's usefulness in this regard. **Conclusions:** The research recommended the adoption of this program as an instructional manual throughout all directorates of the Ministry of Education in Iraqi governorates and proposed regular training sessions for kindergarten teachers for children with chronic diseases, including epilepsy.

KEYWORD: Epilepsy, educational program.

INTRODUCTION

Epilepsy encompasses a spectrum of illnesses characterized by a child's recurrent and frequently irregular seizures. While most seizures are effectively controlled with drugs and various therapy, epilepsy can pose challenges in social, educational, and occupational settings, hindering independent living. Epilepsy self-management encompasses a diverse a variety of health behaviors and practices that epileptic students can implement and change to see their convulsions and enhance their welfare. This method requires students and service workers to work together., such as school teachers.^[1] Teachers are essential in facilitating the emotional, social, and intellectual development of children with epilepsy. Teachers proficient in seizure response can enhance school safety and shape the reactions of peers and staff. A teacher who reacts to seizures with composure and support will facilitate similar responses in others. In certain instances,

instructors are the initial observers and interpreters of seizure symptoms. Educators who acknowledge, motivate, and uplift children with epilepsy promote learning, confidence, and self-esteem.^[2] The estimated prevalence of epilepsy among children in Arab nations varies from 3.6 to 10.5 per 1000, contingent upon the age categories considered. Epilepsy affects 4.5-5.0 individuals per 1,000 in European areas, with a yearly incidence rate of 70 per 100,000. In Baghdad, Iraq, 152 children (82.16 percent) were of preschool age, whilst 33 children (17.83 percent) were of school age. Children of preschool age exhibit a greater prevalence of epilepsy compared to those of school age. According to the Iraqi Ministry of Health Statistics in Baghdad, epilepsy is increasingly prevalent in Iraq, with the number of affected individuals rising in recent years, peaking in 2011.^[3]

OBJECTIVES OF THE STUDY

1. To assess teachers' knowledge of epilepsy
2. To evaluate the efficacy of an instructional program on kindergarten teachers' understanding of epilepsy.
3. To ascertain the correlation between kindergarten teachers' knowledge of epilepsy and their demographic and vocational attributes.

MATERIALS AND METHODS

Study Design: A non-probability sample was obtained from the Al-Rusafa Third Education Directorate kindergarten in Baghdad City. The sample was split into two groups: one research group consisting of 30 teachers and one control group including another 30 teachers. Data collection was conducted by using the study tool and the implementation of the educational curriculum.

Duration of the Study: The implementation occurred in the Al-Rusafa Third Education Directorate in Baghdad from 1st October 2021 to 20th January 2022.

The pre-test and post-test methodology was employed as an effective data gathering strategy, implemented through lectures and discussions.

The study group participated in an educational curriculum, but the control group did not. The research's methodology involved evaluating the instructors' expertise about epilepsy. To complete this portion of the investigation, the researcher employed a closed-ended questionnaire with true or false responses. The outcomes were 28% for the correct response and 72% for the incorrect response. Assessment results indicate the necessity of developing an educational program to enhance teachers' understanding of epilepsy. This evaluation was performed prior to initiating the trial.

Prior to the deployment of the instructional program, the study sample was classified into two categories: the experimental group and the control group. The study group underwent a pre-test, an educational curriculum, and a post-test, whereas the control group had only a pre-test and a post-test.

The instructional program was delivered through four lectures addressing the critical material pertinent to instructors' needs about epilepsy. The lectures were structured and scheduled for around 30 to 45 minutes, and conducted at the chosen kindergarten from November 5, 2021, to January 5, 2022.

The program was overseen by lectures pertinent to the primary subjects, emphasizing the objectives of every lecture, also applied Socio-Demographic Characteristics Questionnaire. The second part includes general knowledge about epilepsy. The knowledge test was composed of (9) multiple-choice questions which regarding general information about epilepsy.

Analysis of statistics

The SPSS (Statistical Package for the Social Sciences) version 20.0 tool is used to look at the data. The following statistical data analysis steps are used by the statistical analysis system and the Excel tool to look at and make sense of the study's results.

RESULTS

This chapter provides a descriptive study of the sample about the socio-demographic characteristics of kindergarten instructors and outlines their knowledge level on epilepsy. This also assesses the efficacy of an instructional program on teachers' understanding of epilepsy.

Table 1: Sample Distribution Based on Socio-demographic Attributes.

List	Characteristics	Study Group		Control Group		X^2	df	P-value	Sig.
		F	%	F	%				
1	Age (years)					22.643	4	.598	N.S
	20 – 29	12	39.9	12	40				
	30 – 39	11	36.7	10	33.4				
	40 ≤	7	23.4	8	26.6				
	Total	30	100	30	100				
3	Marital status					20.483	9	.015	S
	Single	10	33.3	11	36.7				
	Married	16	53.3	17	56.7				
	Divorced	2	6.7	1	3.3				
	Widowed	2	6.7	1	3.3				
	Total	30	100	30	100				
4	Level of education					3.375	4	.497	N.S
	Diploma	20	66.7	21	70				
	Bachelor	8	26.6	7	23.3				
	High diploma	2	6.7	2	6.7				
	Total	30	100	30	100				
5	Years of experience (years)					20.803	16	.186	N.S
	< 5	10	33.3	10	33.3				
	5 – 9	8	26.7	7	23.3				

	10 – 14	7	23.3	5	16.7				
	15 – 19	3	10	5	16.7				
	20 ≤	2	6.7	3	10				
	<i>Total</i>	<i>30</i>	<i>100</i>	<i>30</i>	<i>100</i>				
6	Family monthly income (Iraqi Dinar)								
	200000 – 500000	9	30	10	33.3	7.864	9	.548	N.S
	501000 – 800000	11	36.7	9	30				
	801000 – 1000000	8	26.7	8	26.7				
	101000 – 1500000	2	6.7	3	10				
<i>Total</i>	<i>30</i>	<i>100</i>	<i>30</i>	<i>100</i>					
7	Participated in training courses about dealing with epileptic child								
	No	9	30	10	33.3	.001	1	1.000	N.S
	Yes	21	70	20	66.7				
	<i>Total</i>	<i>30</i>	<i>100</i>	<i>30</i>	<i>100</i>				

This table reveals that within the study group, kindergarten teachers aged 20-29 constitute the biggest percentage at 39.9%, whereas the control group likewise shows a predominant percentage of 40% for the same age range. The marital status indicates that 53.3% of kindergarten teachers in the research group and 56.7% in the control group are married. The educational attainment reveals that kindergarten teachers possess diplomas in both the research group (66.7%) and the control group (70%). The kindergarten teachers in the study group (33.3%) and control group (33.3%) are

reporting they have less than 5 years of experience. Regarding family monthly income, 36.7% of kindergarten teachers in the study group are with family income of 501000 – 800000 Iraqi dinars while 33.3% of kindergarten teachers in the control group are associated with family income of 200000 – 500000 Iraqi dinars. About two third of kindergarten teachers in the study group (70%) and control group (66.7%) are reporting that they participated in training courses about dealing with epileptic child.

Table 2: Comprehensive Evaluation of Teachers' Understanding of Pediatric Epilepsy in Elementary Schools among study and Control Cohortsf: Frequency, %: Percentage, M.S: Mean of score, SD Standard deviation.

Levels of Knowledge	Study Group (N= 30)								Control Group (N= 30)							
	Pre-test				Post-test				Pre-test				Post-test			
	f	%	M.S	SD	f	%	M.S	SD	f	%	M.S	SD	f	%	M.S	SD
Poor	30	100	2.13	1.10	1	3.3	20.13	4.59	30	100	2.13	1.22	30	100	2.37	1.273
Fair	0	0			10	33.4			0	0						
Good	0	0			19	63.3			0	0						
<i>Total</i>	<i>30</i>	<i>3.3</i>			<i>30</i>	<i>100</i>			<i>30</i>	<i>100</i>						

Poor= 0-10, Fair= 11 -20, Good= 21-30

This table illustrates the full assessment of teachers' knowledge; the results reveal that the study group exhibited a deficient level of knowledge during the pre-test (100%), whereas they demonstrated a proficient level of knowledge during the post-test (100%),

indicating significant improvements in their knowledge base. The educators in the control group exhibit a consistently inadequate level of knowledge in both the pre-test and post-test (100%), indicating no change in their knowledge level.

Table 3: The efficacy of an instructional program on the knowledge of elementary school teachers regarding epilepsy in children.

Knowledge	Study Group (N=30)					Control Group (N=30)				
	M.	t	df	p-value	Sig.	M.	t	df	p-value	Sig.
Pre-test	2.13	22.160	29	0.001	H.S	2.13	-0.839	29	0.49	N.S
Post-test	20.13					2.37				

This table demonstrates that the educational program significantly enhances teachers' knowledge on epilepsy in children, as seen by a substantial difference between pre-test and post-test scores, with a p-value of 0.001 in the research group. Within the control group, there is no significant difference between pre-test and post-test durations.

Table 4: Relationship between Teachers' Knowledge and Age in Study and Control Groups.

Knowledge Age	Study Group (N=30)			Control Group (N=30)		
	N	Mean	SD	N	Mean	SD
20 – 29 years	12	5.80	.447	12	1.00	.000
30 – 34 years	11	4.73	.548	10	1.00	.000
40 ≤ years	7	4.70	.548	8	1.00	.000
Total	30	2.60	.563	30	1.00	.000
Correlation	r = -0.326	p-value = 0.079	Sig.= N.S	r = -0.324	p-value = 0.080	Sig.= N.S

This table clarifies that no significant link has been seen between knowledge level and instructors' age in both the research and control groups.

Table 5: Relationship between Teachers' Knowledge and their Marital Status in study and Control Groups.

Knowledge Marital status	Study Group (N=30)			Control Group (N=30)		
	N	Mean	SD	N	Mean	SD
Single	10	2.90	.316	11	1.00	.000
Married	16	2.44	.629	17	1.00	.000
Divorced	2	2.50	.707	1	1.00	-
Widowed/er	2	2.50	.707	1	1.00	-
Total	30	2.60	.563	30	1.00	.000
Correlation	r = -0.264	p-value = 0.159	Sig.= N.S	r = -0.071	p-value = 0.708	Sig.=N.S

This table indicates that no significant association has been seen between the degree of knowledge and the marital status of teachers in both the research and control groups.

Table 6: Relationship between Teachers' Knowledge and their Educational Attainment in study and Control Cohorts.

Knowledge Education	Study Group (N=30)			Control Group (N=30)		
	N	Mean	SD	N	Mean	SD
Diploma	20	2.80	.410	21	1.00	.000
Bachelor	8	2.38	.518	7	1.00	.000
High diploma	2	1.50	.707	2	1.00	.000
Total	30	2.60	.563	30	1.00	.000
Correlation	r = -0.538	p-value = 0.002	Sig.= H.S	r = -0.159	p-value = 0.402	Sig.= N.S

This table indicates a highly significant reverse correlation between knowledge level and education level among teachers in the study group, with a p-value of

0.002. However, the findings reveal no significant relationship between knowledge level and education level among teachers in the control group.

Table 7: Relationship between Teachers' Knowledge and Years of Experience in Study and Control Groups.

Knowledge Years	Study Group (N=30)			Control Group (N=30)		
	N	Mean	SD	N	Mean	SD
< 5 years	10	2.80	.422	10	1.00	.000
5 – 9 years	8	2.50	.756	7	1.00	.000
10 – 14 year	7	2.57	.535	5	1.00	.000
15 – 19 year	3	2.33	.577	5	1.00	.000
20 ≤	2	2.50	.707	3	1.00	.000
Total	30	2.60	.563	30	1.00	.000
Correlation	r = -0.311	p-value = 0.095	Sig.= N.S	r = -0.140	p-value = 0.461	Sig.= N.S

This table demonstrates that no significant association has been discovered between knowledge level and years of experience among instructors in the research and control groups.

Table 8: Relationship between Teachers' Knowledge and Their Monthly Salary in study and Control Groups.

Income	Study Group (N=30)			Control Group (N=30)		
	N	Mean	SD	N	Mean	SD
200000 – 500000 IqD	9	2.78	.441	10	1.00	.000
501000 – 800000 IqD	11	2.64	.505	9	1.00	.000
801000 – 1000000 IqD	8	2.38	.744	8	1.00	.000
1001000 – 1500000 IqD	2	2.50	.707	3	1.00	.000
Total	30	2.60	.563	30	1.00	.000
Correlation	r = -0.288	p-value = 0.023	Sig.= S	r = -0.015	p-value = 0.938	Sig.= N.S

This table indicates a significant reverse correlation between knowledge level and family monthly income among teachers in the study group, with a p-value of 0.023. However, it shows no significant relationship between knowledge level and family monthly income among teachers in the control group.

DISCUSSION

It was found in the study that the majority of participants in both the study group and the control group were between the ages of 20 and 29. This represented 39.9% of the total participants. These results are consistent with those obtained from a cross-sectional research that Khanal, Maharjan, Pokharel, and Sanjel carried out (2015) in Kathmandu Metropolitan City^[4], which indicated that the median age of 165 teachers is 29 years. Similarly, Toudou-Daouda and Ibrahim-Mamadou (2020) in Niger^[5] confirmed that a significant majority of participants were under 30 years of age. Approximately 56.7% of the teachers in the study group and 53.3% of the teachers in the control group are female, according to the findings of the current study. Therefore, more than half of the teachers in both groups are female.

The research aligns with Mustapha, Odu, and Akande (2013) in Nigeria^[6], revealing that 65.5% of the participants were female.. Furthermore, it concurs with Bhesania, Rehman, Savu, and Zehra (2014) in Karachi, Pakistan^[7], which indicate that the percentage of females and males was (36.56 ± 10.92). The findings indicated that 53.3% of instructors in the research group and 56.7% in the control group are married.

This findings are comparable to a study done by Karimi and Heidari (2015) in Iran^[8] and its results showed that (91.8%) of the study participants were married. But in comparison to an interventional study done by Eze et al. (2015) conducted in Lagos, Nigeria^[9], which point out that high percentage of the study participants (n= 179; 79.2%) were single which it totally differs with the results of the present study. The largest proportion of teachers possess diplomas in both the research group (66.7%) and the control group (70%). This conclusion aligns with a cross-sectional research with an analytical component conducted by Al Shatari, Sebri, and Sadiq (2018) in Baghdad^[10], which revealed that 63.4% of the study participants were graduates of an institute. Additionally, the findings align with those of a survey conducted by Salih (2015) in Kirkuk city^[11], which

indicated that 54.0% of participants were graduates from the Institute.

The data indicate that teachers in both the study group and the control group (33.3%) had fewer than 5 years of experience. The results confirmed by another results obtained by Khanal et al. (2015) in Kathmandu, Metropolitan City^[4], which revealed that the median years of teaching experience (6 years). Similarly, a pre-experimental research approach done by Sharma, Prasanna and Kumar (2013) which conducted in Vijaynagar, Bangalore^[12], that agree with these findings which indicated that (64.0%) of study sample had (1-10) years of experience. The study indicates that 36.7% of teachers in the study group had a family income ranging from 501,000 to 800,000 Iraqi dinars, whereas 33.3% of teachers in the control group have a family income between 200,000 and 500,000 Iraqi dinars.

This results supported in a descriptive cross-sectional study done by Al-Tameemi and Khudair (2016) in Al-Najaf Al-Ashraf City, Iraq^[13], Also comes in the same line with findings obtained by Sheren, Hussein and Fatah (2012) in Erbil, Iraq^[14], which mentioned that (90.6%) of the study sample reported that the family monthly income was somehow sufficient. The study findings confirmed that about two third of teachers in the study group (70%) and control group (66.7%) are reporting that they participated in training courses about dealing with epileptic child. This results disagree with a study done by Alahmadi, Mogeda and Keshky (2019) in Saudi Arabia^[15], which mentioned that (85.9%) of study participants did not participated in training courses.

The researcher opinion regarding above results may reveal incomplete awareness among teachers regarding epilepsy in school children which lead to a negative impact from teachers on children present and future accomplishments as it is declared in many studies which stated that “children with epilepsy are at increased risk for learning incapacities, mental health problems, social isolation, and low self-esteem”. The findings reveal that teachers in the research cohort had insufficient knowledge at the pre-test phase (100%), but demonstrated superior knowledge during the post-test phase (100%). The teachers in the control group exhibit a consistently inadequate level of knowledge throughout both the pre-test and post-test phases (100%). The results show that the educational curriculum greatly improves teachers' understanding of pediatric epilepsy.

This is supported by a significant difference (p -value=0.01) in the study group's pre- and post-test scores compared to the control group.

Both groups exhibited inadequate knowledge at pretest, either due to the infrequency of severe epilepsy cases in Iraqi schools or the lack of scientific evidence to back up those assertions. This is further substantiated by numerous pertinent and contemporary international studies indicating a lack of understanding regarding epilepsy among educators, particularly in developing nations. This aligns with findings from Kadhim *et al.* (2021) in Al-Basra, Iraq^[16], which demonstrated that the bulk of participants had a modest degree of knowledge. Other studies include Mohammed (2018) in Baghdad, Iraq^[17], Elhassan *et al.* (2017) in Khartoum State^[18], and Goal, Singh, Lal, and Singh (2014) in Chandigarh City, India.^[19] This public health issue suggests that the educational program effectively enhances teachers' understanding regarding children with epilepsy, according to the researcher's perspective. There is high significant relationship (reverse strong correlation) between level of education, family monthly income and marital status with knowledge level among teachers (at p -value= 0.002, 0.023, 0.022) respectively. Furthermore, there is no reported significant correlation with other variables. This results in the same line with Choudhary (2018).^[20] However, findings totally disagree with results attained in Abdulmalek and Ibrahim (2016) in Duhok Iraq^[21], Ahmed and Hameed (2013) In Kirkuk Iraq^[22], as well as Sharma, Prasanna, and Kumar (2013) which conducted in Vijaynagar, Bangalore^[12], and Akhtar and Mogal (2016) in Pakistan.^[23]

CONCLUSIONS

1. In both the study group and the control group, the majority of participants, which accounted for 39.9% of the total, were between the ages of 20 and 29.
2. In both the study group and control group, over half of the teachers are female, comprising 56.7% and 53.3%, respectively.
3. Most of teachers (53.3%) in the study group and (56.7%) in the control group are married.
4. The largest proportion of instructors with diplomas is found in the research group (66.7%) and the control group (70%).
5. In the control as well as the study groups, the majority of teachers (33.3%) possessed fewer than five years of experience.
6. Two third of teachers in the study group (70%) and control group (66.7%) are reporting that they participated in training courses about dealing with epileptic child.
7. The study concluded that the responses toward the instructional program is very good and can be applied to all teachers who working in others elementary schools.
8. There is high significant relationship between level of education, family monthly income and marital status with knowledge level among teachers

respectively.

Recommendations

1. Increasing the training courses regarding epilepsy and other chronic diseases that are common in school children and insure all teachers included in it.
2. Increased number of high qualified teachers who were colleges graduate.
3. Community awareness through various media to increase knowledge about epilepsy and how to deal with the affected child when an epileptic seizure occurs.

REFERENCES

1. Fleeman, N., & Bradley, P. M. Care delivery and self-management strategies for children with epilepsy. *Cochrane database of systematic reviews*, 2018; 3.
2. Edmonton Epilepsy Association. "A Guide for Teachers: Epilepsy." 2011; 1–28.
3. Mohammed, H. B. J., & Al-Ogaili, S. S. C. Risk Factors Associated with Epilepsy among Children in Al-Najaf Province: A Case Control Study. *SCOPUS IJPHRD CITATION SCORE*, 2019; 10(01): 877.
4. Khanal, K., Maharjan, R., Pokharel, B. R., & Sanjel, S. School teachers' knowledge about epilepsy in Kathmandu Metropolitan City. *Kathmandu University Medical Journal*, 2015; 13(4): 316-322.
5. Toudou-Daouda, M., & Ibrahim-Mamadou, A. K. Teachers' Knowledge About Epilepsy and Their Attitudes Toward Students with Epilepsy: A Cross-Sectional Survey in the City of Tahoua (Niger). *Neuropsychiatric Disease and Treatment*, 2020; 16: 2327.
6. Mustapha, A. F., Odu, O. O., & Akande, O. Knowledge, attitudes and perceptions of epilepsy among secondary school teachers in Osogbo South-West Nigeria: a community based study. *Nigerian journal of clinical practice*, 2013; 16(1): 12-18.
7. Bhesania, N. H., Rehman, A., Savul, I. S., & Zehra, N. Knowledge, attitude and practices of school teachers towards epileptic school children in Karachi, Pakistan. *Pakistan journal of medical sciences*, 2014; 30(1): 220.
8. Karimi, N., & Heidari, M. Knowledge and attitudes toward epilepsy among school teachers in West of Iran. *Iranian journal of neurology*, 2015; 14(3): 130.
9. Eze, C. N., Ebuehi, O. M., Brigo, F., Otte, W. M., & Igwe, S. C. Effect of health education on trainee teachers' knowledge, attitudes, and first aid management of epilepsy: An interventional study. *Seizure*, 2015; 33: 46-53.
10. Al Shatari, S. A. E., Sebri, M., & Sadiq, M. Q. First-Aid Knowledge And Practice Of Primary-Schools Teachers In The Catchment Area Of Hay Al-Salaam Al-Sakany Phc, Baghdad-Iraq. *International Journal of Innovation Sciences and Research*, 2018; 7(12): 1331-1337.
11. Salih, H. Assessment of Primary School Teachers' Knowledge regarding Child abuse in Kirkuk city

- Hewa. *Mosul Journal of Nursing*, 2015; 3(1): 43-48.
12. Sharma, N. K., Prasanna, K. L., & Kumar, A. (2013). Effectiveness of structured teaching program on knowledge regarding epilepsy in children among school teachers. *Journal of Nursing and Health Science (IOSR-JNHS)*, 2320-1940.
 13. Al-Tameemi, Hussein & Khudair, Fatima W.. Knowledge and Attitudes of Primary School Teachers Toward First Aid in Al-Najaf Al-Ashraf City. *International Journal of Current Research and Academic Review*, 2016; 4: 64-79. 10.20546/ijcrar.2016.412.006.
 14. Hussein, A., Sheren, A. N., Fatah, K. Knowledge and Attitude of Teachers about Communicable Diseases in some of Primary Schools in Erbil. *kufa Journal for Nursing sciences*, 2012; 2(2).
 15. Alahmadi, N. A., & El Keshky, M. E. S. Assessing primary school teachers's knowledge of specific learning disabilities in the Kingdom of Saudi Arabia. *Journal of Educational and Developmental Psychology*, 2019; 9(1): 9-22.
 16. Kadhim, N. S., Bachi, D. M., & Abed, A. M. T. M. T. Knowledge of Primary School's Teachers about Epilepsy in Al-Basra City Center. *Indian Journal of Forensic Medicine & Toxicology*, 2021; 15(2): 1597.
 17. Mohammed, J. I. Knowledge about tuberculosis among secondary school Teachers in Baghdad City. *Iraqi J. Comm*, 2018; 87-90.
 18. Elhassan, M. A., Alemairy, A. A., Amara, Z. M., Hamadelneel, A. A., Mohamed, A. H., & Elaimer, A. A. Epilepsy: knowledge, attitude, and practice among secondary school teachers in Khartoum state. *Neurology and therapy*, 2017; 6(2): 225-235.
 19. Goel, S., Singh, N., Lal, V., & Singh, A. Evaluating the impact of comprehensive epilepsy education programme for school teachers in Chandigarh city, India. *Seizure*, 2014; 23(1): 41-46.
 20. Choudhary, A. Effectiveness of structured teaching program on knowledge regarding sexual health among young adults', *Journal of research in medical sciences*, 2018; 4.
 21. Abdulmalek, Y. I., Ibrahim, A. W. Health education program in improving knowledge regarding emergency contraception among school teachers in Duhok. *AL- Kindy Col Med J.*, 2016; 12(1).
 22. Ahmed, N. M., & Hameed, R. Y. Constructing of An Educational Program for Primary School Teachers Regarding Hepatitis A Control In Kirkuk Governorate. *Mosul Journal of Nursing*, 2013; 1(1): 17-21.
 23. Akhtar, S. W. A., & Mogal, Z. Knowledge, attitude and practice of epilepsy among schoolteachers in Pakistan. *Pakistan Journal of Neurological Sciences (PJNS)*, 2016; 11(3): 20-24.