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# ASSESSMENT OF KNOWLEDGE ABOUT EPILEPSY AND ATTITUDE TOWARD EPILEPSY AMONG NURSES IN HOSPITALS AFFILIATED TO BABOL UNIVERSITY OF MEDICAL SCIENCES

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## ABSTRACT

**Background.** The aim of this study was to determine the knowledge and attitude of nurses of hospitals affiliated to Babol University of medical sciences with regard to epilepsy and its related factors.
**Method.** This descriptive study was performed on 500 nurses working at educational hospitals of Babol, Iran, in 2017. A questionnaire including 7 demographic questions, 14 questions of knowledge and 10 questions of attitude was used to collect the related data. Results were gained through ANOVA and T-test.
**Results.** In this study, the level of knowledge about epilepsy was significantly higher in subjects younger than 25 years old (P = 0.03), but the attitude toward epilepsy across different age groups was not significantly different. Also, there was no significant difference between knowledge and attitude between the two sexes, marital status and work experience. Nurses' knowledge was not significant in terms of education, but their attitude toward epilepsy was higher in those with undergraduate education than those with higher educated (P <0.001). There was no significant difference in knowledge about epilepsy based on income level, but their attitude was significantly higher in people with lower income (P <0.001).
**Conclusions.** Nurses' knowledge about epilepsy was higher in younger age groups and newly employed ones. Positive attitudes toward epilepsy also had a reverse relationship with education and income levels. A training program is needed to increase the awareness and skills of dealing with patients with epilepsy.

**Keywords:** age, attitude, education, epilepsy, knowledge

## INTRODUCTION

Epilepsy appears as a result of abnormal electric discharge in a group of neurons in the brain which leads to frequent seizures (1). Epilepsy is a global disease with an unequal distribution. About 80% of the affected individuals reside in low and middle income countries (2). Nurses play a critical role in promoting the best health outcomes for people with epilepsy by imparting information about the disease, teaching self-management skills, and discussing treatment options with patients and their families. The nurse's role, however, goes beyond that (3).

Success rate of facing with this chronic disease depends highly on the patients, their families, professional knowledge and awareness of medical health care players, and awareness towards the disease itself (4). Persons with epilepsy are shunned and discriminated against in education, employment, and marriage in developing countries because epilepsy is seen as a highly contagious and shameful disease in the eyes of the public (5).

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Epileptic patients may be subject to negative social attitudes such as biasedness, social stigma and discrimination (6,7).

Definitely, attitude of medical care employees toward epileptic patients is affected by their daily interactions with them. Furthermore, independent of their professional services, the social interaction of these healthcare employees with epileptic patients may have significant influence on the attitudes of other people toward these patients(8). Affected patients often have accompanying psychiatric or cognitive diagnoses and report having less self-efficacy for managing seizures and poor health-related quality of life. In addition to teaching patients and their family members about treatments, nurses must act as advocates, helping patients find appropriate community resources, educating the public at large, and promoting positive attitudes toward people with epilepsy (3). In order to provide more efficient healthcare services for epileptic patients, it is crucial that improvement in the knowledge and attitude of medical care employees especially at the level of nurses take place.

## MATERIALS AND METHODS

This descriptive study was conducted in 2017 including nurses in all of the educational hospitals of Babol city, Iran: Shahid Beheshti Hospital, Shahid Yahya Nejad Hospital, and Ayatollah Rouhani Hospital. Nurses in the neural section of the hospitals were excluded. Nurses were explained about the questionnaires before they were filled out and collected.

This study was approved by the ethics committee of the Babol University of Medical Sciences Babol, Iran (Ethics Code: MUBABOL.hrt.rec.1396.94). Official permission was also obtained from the hospital ethics committees. In addition, all nurses were informed about the study and consent was obtained from all participating nurses. Participants were free to quit whenever they wanted. Questionnaires were answered by the nurses. All participants were ensured about the confidentiality of their responses.

Questionnaires were designed in a way that they were easy to answer. The questionnaire booklet included seven demographic questions, 14 knowledge and awareness questions, and 10 attitude related questions. This booklet was applied by the following scholars in their studies: Dantas et al. (9),Young et al. (10) and Vancini et al. (11). The English version of the questionnaires was translated to Persian by two expert translators. Analyzing the two translations, a single version was devised which was translated back into English again. The English version was compared for compatibility check with the initial main English version of the questionnaires. Content validity of the questionnaires was evaluated by five neurologists who checked and edited the content; after making revisions, they confirmed the validity of the questionnaire booklet. Test-retest method was used to calculate the reliability of the questions. 30 nurses among the subjects in the study answered the questions on the questionnaires twice in a two-week time. The Cronbach Alpha was 0.78. As mentioned earlier, the questionnaire booklet included three parts: Part one, demographic information including seven questions about age, gender, educational level, marital status, job experience, income level, and the history of epilepsy among relatives and family members. Part two, level of knowledge and awareness about epilepsy which includes 14 questions with answers ranging "True", "False", and "I don't know". Part three, attitude toward epilepsy which included 10 questions. Answers to these questions include "I agree", "I don't agree", and "I have no idea". Each part of the questionnaire was scored separately in a way that a wrong answer was scored 0, " I don't know" answers were scored 1, and correct answers were scored 2. Finally, using the following formula, both attitude and knowledge scores were calculated.

$$\text{Attitude/knowledge} = \frac{\text{Sum of the scores for each subject – the lowest score}}{\text{The highest score – the lowest score}} \times 100$$

Statistical analysis was done using SPSS version 24. T-test and ANOVA with Turkey were used to analyze data. Significance level was set at .05.

## RESULTS

500 nurses from educational hospitals of Babol took part in this study out of which 263 (Females=234, Males= 29) were selected from Ayatollah Rouhani Hospital, 104 (Females=73, Males= 31) from Shahid Yahya Nejad Hospital, and 133 (Females=91, Males= 42) from Babol Shahid Be-

heshti Hospital. 395 nurses (79% of the total number of subjects) were female and 105 nurses (21%) were male. 14.4% of subjects were under 25 years of age, 44.6% were between 26 and 33, and 41% were over 34 years old. 94% of the subjects had Bachelor Degree and 6% held Master's Degree. 84.4% of the nurses were married and 15.6% were unmarried. 25% of the nurses had under five years of work experience , 41.6% of them had the work experience of between 6-10 years and 33.4% of them had more than 11 years of related work experience. The majority of subjects (85.6%) had average income of 1.5-2.5 million Tomans of monthly salary; 12.4% of the subjects had the history of epilepsy among their relatives (Table 1).

***TABLE 1.*** *Demographic information of hospital nurses*

| Variables | N (%) |
|---|---|
| **Age ( year)** | |
| <25 | 72 (14.4) |
| 26-33 | 223 (44.6) |
| >34 | 205 (41) |
| **Sex** | |
| Male | 105 (21) |
| Female | 395 (79) |
| **Education status** | |
| Bachelor Degree | 470 (94) |
| Master's Degree | 30 (6) |
| **Marital status** | |
| Married | 422 (84.4) |
| Single | 78 (15.6) |
| **Professional life duration** | |
| <5 | 125 (25) |
| 6-10 | 208 (41.6) |
| >11 | 167 (33.4) |
| **Income status** | |
| <1.5 | 15 (3) |
| 1.5-2.5 | 428 (85.6) |
| >2.5 | 57 (11.4) |
| **Family History of epilepsy** | |
| Yes | 62 (12.4) |
| No | 438 (87.6) |

Tables 2 and 3 show the knowledge and attitude questions respectively along with the frequency of responses. The highest score of knowledge and attitude scores for nurses in this study was 100. Table 4 shows the mean score of knowledge among nurses as analyzed via ANOVA test. Results showed that nurses in ages under 25 had significantly more knowledge and awareness about epilepsy than other age groups ($p$=.03). Comparison of awareness/ knowledge about epilepsy across gender, educational levels, and marital status was done via t-test and results showed that there was no statistically significant difference between subjects with these regards ($p$=.99, .24, .75 respectively). Awareness/ knowledge about epilepsy among nurses in relation with their work experience and level of income was compared using ANOVA. Results showed that there was no significant difference among nurses' knowledge about epilepsy and their work experience ($p$=.82) and level of income ($p$=.77).

Table 4 shows the knowledge of nurses about epilepsy as related to their history of epilepsy among their relatives using t-test. Findings showed that nurses with a history of epilepsy among their relatives had significantly more knowledge /awareness about epilepsy than the rest ($p$=.004).

Subjects' attitude toward epilepsy based on age was studied using ANOVA and the results showed no significant difference ($p$=.47). Attitudes based on gender also showed no significant difference ($p$=.85). Table 5 shows the attitudes of nurses based on their educational level. Results of t-test showed that nurses with BA degree had significantly better attitude towards epilepsy than nurses with MA ($p$<.001). Attitude toward epilepsy based on marital status and work experience did not also show a significant difference (.72 and .16 respectively).

Table 5 shows the attitude of nurses toward epilepsy based on their level of income using ANOVA test. Results showed significant difference in the level of attitude between nurses earning less than 1.5 million a month and nurses with the level of income more than 2.5 million a month. The former had higher attitude scores as compared with the latter ($p$=.001). Attitude level of nurses based on the history of epilepsy among their relatives was not significantly different ($p$=.09).

## DISCUSSION

Among the 500 nurses who participated in this study, knowledge about epilepsy was significantly more in ages under 25 which could be because of the closeness of graduation time to their start of work; however, attitude toward epilepsy did not significantly differ along age groups.

Moreover, there was no significant difference in both attitude toward and knowledge about epilepsy among nurses in gender, marital status, and work experience. Subjects' knowledge about epilepsy

***TABLE 2.*** *Frequency (%) of answers to knowledge about epilepsy among nurses*

| Number | Questions | N (%) | | |
|---|---|---|---|---|
| | | True | False | Don't know |
| 1 | The epilepsy is a contagious disease | 485 (97) | 4(0.8) | 11(2.2) |
| 2 | The epilepsy is a brain chronic disease that con not be cured or controlled | 464 (92.8) | 33 (6.6) | 3 (0.6) |
| 3 | Seizure occurs when an abnormal electric discharge happen in the brain | 424 (84.8) | 45 (9) | 31 (6.2) |
| 4 | The epilepsy is the most common chronic neurological disorder in the world | 126 (25.2) | 165 (33) | 209 (41.8) |
| 5 | The epilepsy can affect people of all races genders socioeconomic conditions and regions | 445 (89) | 19 (3.8) | 36 (7.2) |
| 6 | In developing countries like Iran epilepsy affects a smaller number of people | 350 (70) | 7 (1.4) | 143 (28.6) |
| 7 | The epilepsy can have a genetic cause | 331 (66.2) | 96 (19.2) | 73 (14.6) |
| 8 | Brain tumor can cause epilepsy | 398 (79.6) | 64 (12.8) | 38 (7.6) |
| 9 | Malnutrition is one cause of epilepsy | 141 (28.2) | 214 (42.8) | 145 (29) |
| 10 | The epilepsy is caused by brain trauma | 412 (82.4) | 45 (9) | 43 (8.6) |
| 11 | Brain infections can cause epilepsy | 381 (76.2) | 41 (8.2) | 78 (15.6) |
| 12 | For epilepsy the ideal treatment is the use of drugs | 449 (89.8) | 10 (2) | 41 (8.2) |
| 13 | Alternative therapies such as acupuncture can be used in the treatment of epilepsy | 120 (24) | 106 (21.2) | 274 (54.8) |
| 14 | Brain surgery can be used to treat epilepsy in some cases | 178 (35.6) | 123 (24.6) | 199 (39.8) |

***TABLE 3****. Frequency (%) of answers to attitude about epilepsy among nurses*

| Number | Questions | N (%) | | |
|---|---|---|---|---|
| | | True | False | Don't know |
| 1 | Most people with epilepsy can work | 443 (88.6) | 27(5.4) | 30(6) |
| 2 | Most patients with epilepsy can go to public schools | 452 (90.4) | 27 (5.4) | 21 (4.2) |
| 3 | Patients with epilepsy can be as successful at work as others | 272 (54.4) | 67 (13.4) | 161 (32.2) |
| 4 | Most people with epilepsy have normal intelligence | 428 (85.6) | 18 (3.6) | 54 (10.8) |
| 5 | Would you allow your child to marry with person with epilepsy | 74 (14.8) | 205 (41) | 221 (44.2) |
| 6 | Patients with epilepsy can be dangerous to others during a seizure | 382 (76.4) | 76 (15.2) | 42 (8.4) |
| 7 | Were you afraid of living with a person with epilepsy | 181 (36.2) | 148 (29.6) | 171 (34.2) |
| 8 | Would you maintain a relationship with someone with epilepsy | 444 (88.8) | 17 (3.4) | 39 (7.8) |
| 9 | People with epilepsy will never be allowed to drive | 139 (27.8) | 280 (56) | 81 (16.2) |
| 10 | People with epilepsy cannot practice any physical activity | 371 (74.2) | 61 (12.2) | 68 (13.6) |

***TABLE 4.*** *Level of knowledge based on Family History of epilepsy and age among nurses*

| Variables | Mean± SD (%) | P-value |
|---|---|---|
| **Age ( year)** | | 0.03 |
| <25 | 79.41± 9.14 | |
| 26-33 | 76.67 ± 9.75 | |
| >34 | 75.68 ± 11.19 | |
| **Family History of epilepsy** | | 0.004 |
| Yes | 7.39±79.38 | |
| No | 76.27± 10.64 | |

***TABLE 5.*** *Level of attitude based on age, Education status, Income status and Family History of epilepsy among nurses*

| Variables | Mean± SD (%) | P-value |
|---|---|---|
| **Education status** | | <0.001 |
| Bachelor Degree | 32.67 ± 14.53 | |
| Master's Degree | 23.16 ± 10.79 | |
| **Income status** | | <0.001 |
| <1.5 | 46.00 ± 27.27 | |
| 1.5-2.5 | 32.20 ± 13.24 | |
| >2.5 | 27.63 ± 16.69 | |

was not significantly different considering their educational level while nurses with BA degree gained significantly higher score in attitude toward epilepsy than the ones with MA. It is possible that more empathy and social relation can be seen among people with lower educational levels in the society than among the ones with higher educational degrees. Nurses with higher educational status may be more engaged mentally and professionally, and are also more subject to change in their perspectives which may lead to a lower score in their attitude toward epilepsy.

There was no significant difference in knowledge about epilepsy among subjects based on their level of income; although, nurses earning less salary had significantly better attitude toward epilepsy than nurses who had a higher level of income. It is also possible that nurses with lower level of income psychologically and socially show more empathy and mutual understanding about other people's problems. With increase in the level of income, it is possible that understanding of problems related to lower social classes will become less.

Nurses who had a history of epilepsy among their relatives also had significantly more knowledge about epilepsy, but their attitude toward epilepsy did not differ significantly from the other group. Their more knowledge about epilepsy could be the result of the fact that they were involved more with epileptic patients' issues and they had to gain more skills and knowledge in dealing with them and providing a safer environment for them.

According to Vancini's study, people employed in medical care jobs are expected to have more knowledge and awareness about epilepsy; therefore, improving and promoting knowledge about epilepsy among these people is a priority and will lead to a more efficient level of medical care and service to epileptic patients (11). In this study, we investigated knowledge about and attitude toward epilepsy among nurses in educational hospitals which plays important role in medical care and service for epileptic patients who are subject to constant physical and mental risks.

In Dayapoglu et al's study, both knowledge about epilepsy and attitude toward epilepsy of nurses was calculated medium level and half of the nurses had knowledge about the dangers of epilepsy for patients as well as other people around them. Average knowledge about epilepsy score of nurses in that study was 12.62 out of 16. This level of knowledge was significantly related with the subjects' educational level. In addition, their average attitude toward epilepsy level was estimated 55.43 according to epilepsy attitude criteria and was significantly related to their educational level. Nurses who were graduating or recently graduates had more knowledge about epilepsy as compared to other nurses. Also, nurses with lower level of income were found to have significantly less knowledge about epilepsy. In this study, also, nurses with lower level of income had less knowledge about epilepsy however this difference was not statistically significant. In Dayapoglu et al. study, 57.6% of nurses knew that epilepsy is not a dangerous disease for others. More nurses in our study (76.4%) had positive attitude toward the dangers of epilepsy for other people. Attitude toward the dangers of epilepsy for other people was more in our study as well as some other studies in comparison with In Dayapoglu et al. In our study, attitude toward epilepsy decreased as the educational level of nurses increased which was in contrast with findings of Dayapoglu et al. (12).

In another study on school teachers, Thacker et al. found that their subjects' knowledge about epilepsy was 97%; however, their level of positive attitude toward epilepsy was low. In our study, also, knowledge about epilepsy was good (more than 70%); however, in comparison, attitude toward epilepsy was not that good which was similar to Thacker et al. In Thacker et al. study, one third of subjects were not sure of the normal intelligence level of epileptic patients while in our study, majority of nurses (85.6%) had positive attitude toward the intelligence level of epileptic patients are agreed equivocally about including these patients in normal school programs. In contrast, in Thacker et al. study, about 20% of teachers felt extracurricular classes are needed for epileptic students; about 30% of these teachers were afraid of epileptic patients, and 40% of them prevented their children from playing with epileptic patients. We, on the other hand, found that attitude toward the dangers of epilepsy was positive (76.4%) among nurses in this study. More teachers disagreed with marriage with epileptic patients in their family (86.8%) (13); In our study, also, many nurses disagreed with marriage with epileptic patients (41%). More positive attitude toward epilepsy among nurses in our study could be the result of their profession.

In Chomba et al. study, about 25% of subjects disagreed with marriage with epileptic patients in their family and around 20% of them believed that epileptic patients should not marry or work. Many subjects in that study believed that epileptic patients would be excluded from the society and people would be afraid of them. Similarly, in our study, remarkable number of subjects disagreed with marriage with epileptic patients (41%). On the other

hand, majority of nurses in our study had positive attitude toward the occupational possibility of epileptic patients (88.6%). Fear of epileptic people was less among subjects in our study than Chomba et al. (36.2%) (14).

In Inaloo et al study in Shiraz, knowledge of subjects about epilepsy was about 50% which was less than our subjects' level of knowledge about epilepsy (more than 70%). Although, it is worth mentioning that employees of medical care systems are generally expected to have more knowledge of epilepsy as our subjects do. Many subjects in Inaloo et al study (82.4%) believed that there should be limitations for epileptic patients at work which contrasted the findings of our study. In our study, positive attitude was found toward selecting occupation for epileptic patients (88.6%). In Inaloo et al. study, only 4% of subjects agreed with marriage with epileptic patients in their children. Although, in our study 41% of patients did not agree with marriage with epileptic patients, a remarkable percentage (44.2%) did not have any specific ideas about it. In line with Inaloo et al, our findings did not show significant gender difference in both knowledge about and attitude toward epilepsy (15).

Majority of subjects (97%) in our study had knowledge about the fact that epilepsy is non-contagious and treatable. They also knew that epilepsy happen from cellular discharges in the brain. 33% of nurses thought that epilepsy was the most prevalent neurologic disease in the world. 28.6% of them were unaware of the prevalence of epilepsy in Iran. 19.2% of nurses did not respond correctly to the genetic origins of epilepsy and 12.8% of them did not know anything about the relationship between brain tumors and epilepsy. 42.8% of nurses were not aware of the relationship between malnutrition and epilepsy. While many nurses in our study believed that medication helps with the treatment of epilepsy, 21.2% of them found acupuncture treatment more effective in curing epilepsy. 24.6% of nurses did not know of surgical treatment in epilepsy.

Moreover, majority of nurses in this study had positive attitude toward epileptic patients' working (88.6) and studying in normal schools (90.4%). 13.4% of nurses did not have positive attitude toward the occupational success of epileptic patients as compared with other people in the society and 32.2% of nurses did not have specific ideas with this regard. Also, 85.6% of nurses in this study had positive attitudes toward the intelligence level of epileptic patients and believed that they have normal IQ level. In the meanwhile, 41% of these nurses did not agree with marriage with epileptic patients in their family nor had no specific ideas about it. 15.2% of nurses thought that during seizure, epileptic patients can be dangerous for others and 29.6% of them were afraid of living with an epileptic patient.On the other hand, 88.8% of nurses in our study agreed with continuing friendship with these patients. 56% of nurses believed that epileptic patients should not drive and 12.2% of them believed that these patients did not have the ability to continue any sporting activities.

Many people in the society do not have correct knowledge about epilepsy and appropriate actions during seizure in these patients which causes fear and anxiety among these people. Also due to cultural and social issues, many people do not have positive attitude toward communicating or marrying with these patients. Organized training is needed to improve attitude toward epilepsy since wrong perspectives of people in the society have caused embarrassment in social life as well as mental and psychological problems for epileptic patients. Using efficient training for different classes of people in the society about epilepsy, physical and mental care for epileptic patients will improve so that they will be accepted as a normal member of society.

Furthermore, nurses are to have more knowledge about epilepsy because they are more exposed to these patients socially and medically. Positive attitude must be reinforced in nurses in order to promote their communication with epileptic patients.

## CONCLUSIONS

According to this study, knowledge about epilepsy among nurses at younger ages and newly employed nurses is more than other nurses. More positive attitude was found among nurses with lower educational levels. Significant relationship was also found among nurses based on their level of income. With increase in the level of income, positive attitude toward and attention to epileptic patients decreased among nurses in this study. Ths

issue can have psychological reasons which need further exploration in the future.

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