SciMedCentral

Annals of Nursing and Practice

Research Article

The Attitude of Greek Nurses Regarding Post-Traumatic Epilepsy

Nick A. Bakalis[1]*, Paola Polygeni[2] and Thomas Barberis[3]

[1]*Department of Nursing, Technological Educational Institute of Western Greece, Greece*
[2]*Technological Educational Institute of Western Greece, Greece*
[3]*Nephrology Unit, Kianous Stavros, Greece*

***Corresponding author**
Nick A. Bakalis, Department of Nursing, Technological Educational Institute of Western Greece, Megalou Alexandrou 1, Koukouli, Patras, Greece, Tel: 30-2610-329943; Fax: 30-2610-369175; E-mail: nikosbakalis@teiwest.gr

Submitted: 03 December 2014

Accepted: 13 January 2015

Published: 16 January 2015

Copyright
© 2015 Bakalis et al.

OPEN ACCESS

Keywords
- Post-traumatic epilepsy
- Nurses
- Greece

Abstract

The Post-Traumatic Epilepsy (PTE) constitutes a peculiar organic situation but not an illness with dangerous dimensions. As a result, someone with PTE can work properly and safely, especially when it works in hospital environment.

Aims: To identify the attitude of nursing staff about the post-traumatic epilepsy.

Methodology: A questionnaire was used (27 questions). An ethical approval was sought from the Hospital boards. The sample constitutes of 150 nurses from 6 hospitals in South-West region of Greece.

Results: The age ranged between 25-60 years (x=35.7), were female (82%) and working in medical wards 39%. The research demonstrated that the nursing staff will not be socked (51.9%) if they learned that a new qualified nurse comes to their wards with epilepsy. They would inform doctors (75.9%) but not the patient (87%) and the relatives (75.5%). In addition, they were not consider "her" dangerous for the patients under the fear of relapse (66.7%) while 61.1% would trust "her". It is worth noting that only 46.3% of the sample agreed to have an epileptic nurse-in-charge, while they would prefer "her" to work in nursing administration (58%). Also, the majority of nurses (59.7%) believed that "she" can give medication and they would make "her" a friend outside of the hospital (87%). Finally, the knowledge of nurses with regard to PTE was not judged satisfactory.

Conclusions: The state needs to clarify the parameters that render the nurses organic, psychological and intellectually capabilities in order to offer the best possible care to patients (basic and specialized nursing care).

ABBREVIATIONS

x: Mean Score, ICU: Intensive Care Unit, CCU: Coronary Care Unit

INTRODUCTION

Epilepsy is one of the most common neurological disorders, affecting almost 50 million people worldwide (40 million in developing countries and 10 million in developed countries) [1]. Epilepsy is a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures and by the neurobiological, cognitive, psychological, and social consequences of this condition [2]. The definition of epilepsy requires the occurrence of at least one epileptic seizure [3]. Approximately 20–30% of the epilepsy populations have more than one seizure per month [4]. Epilepsy is a frequent consequence of brain injury in both civilian and military populations [5].

Population-based epidemiological studies on epilepsy are available mainly from the UK and the Nordic, Baltic and western Mediterranean countries [6] and no studies were identified from the former Eastern Europe and the eastern Mediterranean countries [7]. The estimated number of children and adolescents in Europe with active epilepsy is 0.9 million, 1.9 million in ages 20–64 years and 0.6 million in ages 65 years and older [8]. In Greece, it is calculated that there are 100 thousand people with epilepsy (1% of the population) [9]. Traumatic Brain Injury (TBI) is a major cause of epilepsy. With recent improvements in pre hospital care and emergency diagnosis and care of TBI, mortality rates have decreased from 50% - 30 years ago - to 30% currently [10]. However, TBI survivors still carry a tremendous burden of disability as a result of their injuries. Of mild head injuries, 10% are thought to result in permanent disability, as well as 66% of moderate head injuries and 100% of severe head injuries [11].

Post-Traumatic Epilepsy (PTE) is a form of epilepsy that

results from brain damage caused by physical trauma to the brain. In Japan, approximately 150,000 cases of PTE occur each year [12]. In a study from Norway, the incidence of PTE in a mixed age group of patients with severe head injuries was 23%, and there was significant correlation with severity of injury and intracranial surgery [13]. Diagnostic measures include electroencephalography (EEG) and brain imaging techniques (magnetic resonance imaging), but these are not totally reliable. More precisely, Jennett and van de Sande [14] examined EEGs from 722 patients with injuries associated with high risk of late traumatic epilepsy. They found that in individual patients the EEG does not improve the accuracy of the prediction calculated from clinical data. They concluded that the EEG does not contribute usefully to the prediction of traumatic epilepsy.

Medications that are used to control seizures are called antiepileptic drugs (AEDs). AEDs do not prevent the development of PTE after head injury, but may be used to treat the condition if it does occur. Some common side effects of AEDs are sleepiness or fatigue, dizziness, double vision and confusion [15]. The literature indicates that although several drugs have been tested for their ability to prevent provoked seizures and epilepsy after TBI (phenytoin, phenobarbital, their combination, carbamazepine, valproate, or magnesium), none of the drugs studied have shown reliable evidence that they prevent, or even suppress, epileptic seizures after TBI [16]. When medication does not work to control the seizures, surgery may be needed. In most countries if you have had a seizure, you won't be able to return to driving for a period of time or until your seizures have been completely stopped and you must notify the Department of Motor Vehicles (DMV). As in any seizure disorder, patients must be warned to exercise caution during bathing, swimming, and climbing heights. They should never be alone during these activities, at least at the beginning of the PTE. Generally, people with PTE are usually return to their works and continue to live as normal as possible (they can drive, having family, amusement, etc).

MATERIALS AND METHODS

A descriptive research was employed. The aim of the research was to identify the attitudes of Greek nurses regarding the PTE. The reason of conducting such research was a personal experience that one member of the research team had in the past. More precisely, the member had a motorcycle accident. Two months after the accident, the first seizure was occurred. After brain scanning (MRI), the doctors diagnose a small hematoma in the right side of the brain (Temperoparietal position) that causes the seizure. After 3 years of medication, the member was free of seizure and having a baby. Because the member is going to work at a public hospital and since there were no such study in Greek nursing literature and abroad, we found it interesting to conduct this research. The literature indicates that most studies in PTE were concentrated more on therapy (medications), diagnostics procedure, quality of life, epidemiology and risk factors.

A questionnaire was constructed with 27 questions. Particular attention was given to the content and structure of the questionnaire. More precisely, questions were made first to identify the attitudes of nurses about PTE and second to demonstrate the knowledge base of nurses in PTE. After the construction, the questionnaire was given to expert panel in order to analyze the structure and themes. The expert panel consisted of two academics. They were nurse teachers with at least seven years teaching experience and a background of neurology nursing. The expert panels were given written information about the study. The panel agreed to participate and the instrument was sent. The panel sent the instrument back with helpful comments. The panel agreed that the structure and themes were appropriate. The Chronbach's alpha (α) was 0.654. The fact that the questionnaire was used for a first time, the reliability analysis was considered satisfactory.

A study was conducted in Greece (between February 2012 and May 2012) over the period of 16 weeks. Purposive sampling method was used to select the participants. From the total 190 qualified nursing staff, one hundred and fifty (n=150) nurses were agreed to participate in the study (response rate, 78.9%). Letters were sent to Nurse Managers at six (6) hospitals in South-West region of Achaia (Greece), explaining the study and asking permission to approach qualified nurses who worked in medical, surgical and Units (ICU, CCU). We select the above clinical sectors because the first two (medical and surgical) wards are the clinical placements that newly qualified nurses are usually placed in Greece and Units because they characterize from a demanding environment (technology, patient status, etc) and nurses need to be physically and mentally prepared to fulfill patients needs. Permission was obtained from the Hospitals Boards. Nurses were informed about the study and those who agreed were participated in the study. All nurses completed the questionnaire in 7-10 minutes. Data was entered and analyzed using the window version 21 of the Statistical Package for Social Science (SPSS).

RESULTS

The age of the participants was ranged from 25-60 with a mean score of 35.7 years. The vast majority of the sample were female (82%), working in medical (39%) and surgical (35%) wards. In addition, nurses had clinical experience from 6 months to 25 years with a mean score of 11.2 years, and they did not have a post-graduate degree (92.6%) (Table 1).

Regarding the questions, nurses revealed that it will not be shocked (very little 31.5%, not at all 20.4%) if they knew that a new qualified nurse suffers from epilepsy. In addition, they acknowledged the fact that they should employ "her" as a staff nurse (51.9%) and they would learn more about the illness (85.2%). Interestingly, the vast majority of nurse's stated that

Table 1: Demographic characteristics.

Age	**Range 25-60 years**	**x=35.7 years**	
Gender	Male 27 (18%)	Female 123 (82%)	
Clinical sector	Units 39 (26%)	Medical 59 (39%)	Surgical 52 (35%)
Years of clinical experience	Range 6 months – 25 years	x=11.2 years	
Post-graduate degree	Yes 10 (6.7%)	No 139 (92.6%)	Both (MSc/PhD) 1 (0.7 %)

Abbreviations: x=Mean, MSc=Master of Science, PhD=Doctor of Philosophy

they would inform doctors (75.9%) but not the patient (87%) and the relatives (75.5%) regarding nurse physical situation. It is important to mention here that most nurses (66.7%) were not considered the nurse dangerous for the patients under the fear of relapse, can give medication (59.7%) while 61.1% would trust "her". In addition, most nurses (68.5%) believe that "she" will be the same efficient as those and "she" could evolve hierarchically (63%). Furthermore, only 46.3% of the sample agreed to have an epileptic nurse-in-charge. Finally, the knowledge of nurses with regard to PTE was not judged satisfactory since they stated that a nurse with PTE cannot work night shifts (59.3%), should not drive a car (75.9%), should not stay at the sun for a long time (90.7%), should not attend night clubs (51.9%) and she cannot walk long distances (63%). It is important to mention here that there are no statistical significant differences ($p>0.05$) between demographic characteristics (age, gender, clinical sectors, clinical experience) and nurses' opinion - knowledge about post-traumatic epilepsy (Table 2).

DISCUSSION

Epileptic patients have various problems that have a significant impact on their quality of their lives. Frequent seizures, adverse effects of drugs, psychological fluctuations and stigma are important factors associated with disease severity [17]. It is generally accepted that epilepsy is a neurological disorder that leads to occasional epileptic seizures, affecting the quality of life. On the other hand, due to new methods in treatment these people are no longer been placed in the margin of society and they succeed in living a normal life with the certain limitations of their disease [18]. Evidence exists that quality of life of people with epilepsy have improved significantly during the last decade, as their crises have been reduced and their employment has increased [19-21].

It is true that PTE are asymptomatic for a long period of time and sufferers may be feeling very well. Nevertheless, these people may be need some days off and thus create problems both to the organization and to the employers. In such competitive working environment, employers will prefer somebody with less qualification but without health problems. The unemployment rates for the people who suffer from chronic diseases are higher than those who are healthy and this constitutes a very serious problem [22].

People with epilepsy are among the most vulnerable

Table 2: Frequencies (%) for the main results of the questionnaire.

How shocked would you fell, if you knew that a nurse working in your department suffers from epilepsy?	**Considerably 48.1%**	**Very little 31.5%**	**Not at all 20.4%**
Should be employed as a nurse?	**Yes** 51.9%	**No** 31.5%	**I do not answer** 16.7%
Will you learn about the disease to help if needed?	**Yes** 85.2%	**No** 9.3%	**I do not answer** 5.6%
Will you inform physicians?	**Yes** 75.9%	**No** 18.5%	**I do not answer** 5.6%
Will you inform patients?	**Yes** 7.4%	**No** 87%	**I do not answer** 5.6%
Will you inform their relatives?	**Yes** 8.3%	**No** 75.5%	**I do not answer** 16.2%
Do you considered her hazardous under the fear of relapse?	**Considerably** 33.3%	**Very little** 38.9%	**Not at all** 27.8%
Can she give medications?	**Yes** 59.7%	**No** 24.1%	**I do not answer** 16.2%
After a crisis, would you trust her?	**Yes** 61.1%	**No** 27.8%	**I do not answer** 11.1%
Is she as efficient as you?	**Yes** 68.5%	**No** 22.2%	**I do not answer** 9.3%
Can she develop hierarchically?	**Yes** 63%	**No** 13%	**I do not answer** 24%
Do you agree to have an epileptic Nurse-in Charge?	**Yes** 46.3%	**No** 22.2%	**I do not answer** 31.5%
Can she work in shifts (morning, night)?	**Yes** 22.2%	**No** 59.3%	**I do not know** 18.5%
Can she work in units with technological equipment (CCU, ICU)?	**Yes** 20.4%	**No** 63%	**I do not know** 16.6%
Can she drive a car?	**Yes** 7.4%	**No** 75.9%	**I do not know** 16.7%
Can she stay at the sun for a long time?	**Yes** 9.3%	**No** 25.4%	**I do not know** 65.3%
Can she attend night clubs?	**Yes** 5.5%	**No** 51.9%	**I do not know** 42.6%
Can she walk long distances?	**Yes** 9.4%	**No** 63%	**I do not know** 27.6%

members of society, and this is due partly to their disease, but also in the social stigma associated with their problem and with other neurological and mental health problems and disabilities. Nevertheless, according to the findings of our research, the social stigma that accompanies patients in Greece, it seems to decline. This leads to predominantly greater acceptance of these people, which facilitates their smooth social integration.

The current research found that Greek nurses were shocked (48.1%) if they knew that a nurse with PTE will work in the ward. This "intense" feeling due to lack of knowledge about the PTE and the cultural believe that a worker should have physically and mentally health. In addition, nurses believe that people with PTE are dangerous to work as a nurse (not working nights) and they prefer these people to work in a less stressful environment (nursing administration). This behavior may cause a psychological stress to the people with PTE and they could not work as part of a team. The problem is exacerbated by the fact that in some European countries there are specific legal barriers that restrict access of people with epilepsy in the labor market [23]. This combination of institutional and social constraints, leads people with epilepsy to experience psychosis [24].

Moreover, the drive capability is an important factor influencing people with epilepsy. Related regulations vary from country to country, but people with epilepsy often forbidden to possess driving license (Greek legislation) unless they are free of seizures [25]. Effective control of seizures can give people with epilepsy the possibility to drive and generally to increase their degree of freedom.

Additionally, nurses revealed that they did not prefer an epileptic nurse-in-charge. It is important to mention here that the Greek law does not mention anything for PTE or epilepsy [26] as a disease that should be strictly restricted from working. As a result, nurses should continue to work, collaborate and support (mainly psychological) colleagues with PTE. Despite the existence of prejudices, even today, in Greek society about epilepsy, our research showed that these people should not be marginalized and trying to live a normal life with the necessary restrictions.

CONCLUSION

The PTE is not an "infectious" disease and people who suffer from this, can work, do cycling, driving a car, walking, making families and generally active in the society as normal people. The state and the nursing profession need to confront with situation such as PTE and provide useful information to health care workers and hospitals.

ACKNOWLEDGEMENTS

We would like to thank all nurses who participated to the research and the Hospital Boards for authorizing data collection.

REFERENCES

1. Emanuelson I, Uvebrant P. Occurrence of epilepsy during the first 10 years after traumatic brain injury acquired in childhood up to the age of 18 years in the south western Swedish population-based series. Brain Inj. 2009; 23: 612.
2. Messori A, Polonara G, Carle F. Predicting posttraumatic epilepsy with MRI: prospective longitudinal morphologic study in adults. Epilepsia. 2005; 46:1472.
3. Young KD, Okada PJ, Sokolove PE. A randomized, double-blinded, placebo-controlled trial of phenytoin for the prevention of early posttraumatic seizures in children with moderate to severe blunt head injury. Ann Emerg Med. 2004; 43: 435.
4. Raymont V, Salazar AM, Lipsky R. Correlates of posttraumatic epilepsy 35 years following combat brain injury. Neurology. 2010; 75: 224.
5. Tomkins O, Shelef I, Kaizerman I. Blood-brain barrier disruption in post-traumatic epilepsy. J Neurol Neurosurg Psychiatry. 2008; 79: 774.
6. Langlois JA, Rutland-Brown W, Wald MM. The epidemiology and impact of traumatic brain injury: a brief overview. J Head Trauma Rehabil. 2006; 21: 375–378.
7. Vaaramo K, Puljula J, Tetri S. Predictors of new-onset seizures: a 10-year follow-up of head trauma subjects with and without traumatic brain injury. J Neurol Neurosurg Psychiatry. 2014; 85: 598.
8. Christensen J, Pedersen MG, Pedersen CB. Long-term risk of epilepsy after traumatic brain injury in children and young adults: a population-based cohort study. Lancet. 2009; 373: 1105.
9. Vozikis A, Nikolakis D. The psychological and social profile of epileptic patients in Greece. To Vima tou Asklipiou. 2013; 12: 72-81.
10. Forsgren L, Beghi E, Õun A, Sillanpää M. The epidemiology of epilepsy in Europe – a systematic review. European J of Neuro. 2005; 12: 245–253.
11. Englander J, Bushnik T, Duong TT. Analyzing risk factors for late posttraumatic seizures: a prospective, multicenter investigation. Arch Phys Med Rehabil. 2003; 84: 365.
12. Yeh CC, Chen TL, Hu CJ. Risk of epilepsy after traumatic brain injury: a retrospective population-based cohort study. J Neurol Neurosurg Psychiatry. 2013; 84: 441.
13. Andelic N, Hammergren N, Bautz-Holter E, Sveen U, Brunborg C, Roe C. Functional outcome and health-related quality of life 10 years after moderate-to-severe traumatic brain injury (Norway). Acta Neurologica Scandinavica. 2009; 120: 16–23.
14. Bryan J, van de Sande J. EEG Prediction of Post-Traumatic Epilepsy. Epilepsia. 2007; 16: 251-256.
15. Neidlinger NA, Pal JD, Victorino GP. Head computed tomography scans in trauma patients with seizure disorder: justifying routine use. Arch Surg. 2005; 140: 858.
16. Inaba K, Menaker J, Branco BC. A prospective multicenter comparison of levetiracetam versus phenytoin for early posttraumatic seizure prophylaxis. J Trauma Acute Care Surg. 2013; 74: 766.
17. Pagni CA, Zenga F. Posttraumatic epilepsy with special emphasis on prophylaxis and prevention. Acta Neurochir Suppl. 2005; 93: 27.
18. Ferguson PL, Smith GM, Wannamaker BB. A population-based study of risk of epilepsy after hospitalization for traumatic brain injury. Epilepsia. 2010; 51: 891.
19. Baker G, Jacoby A, Buck D, Stalgis C, Monnet D. Quality of Life of People with Epilepsy: A European Study. Epilepsia. 2005; 38: 353–362.
20. Temkin NR. Preventing and treating posttraumatic seizures: The human experience. Epilepsia. 2009; 50: 10-13.
21. Gupta RK, Saksena S, Agarwal A. Diffusion tensor imaging in late posttraumatic epilepsy. Epilepsia. 2005; 46: 1465.
22. Temkin NR, Anderson GD, Winn HR, Ellenbogen RG, Britz GW, Schuster J, et al. Magnesium sulfate for neuroprotection after traumatic brain injury: a randomised controlled trial. Lancet Neurol. 2007; 6: 29–38.
23. Swartz BE, Houser CR, Tomiyasu U, et al. Hippocampal cell loss in

post-traumatic human epilepsy. Epilepsia. 2006; 47: 1373.

24. Reeves RR, Panguluri RL. Neuropsychiatric complications of traumatic brain injury. Journal of Psychosocial Nursing and Mental Health Services. 2011; 49: 42-50.

25. Stathis M, Gioloksou T, Blachos G. A population-based study of seizures after traumatic brain injuries. Neurologia (in Greek). 2013; 22: 10-16.

26. Gkampeta A, Kalamitsou S, Zafiriou D. Immunological aspects of epilepsy: a review of the literature. Neurologia (in Greek). 2012; 21: 6-12.

Cite this article

Bakalis NA, Polygeni P, Barberis T (2015) The Attitude of Greek Nurses Regarding Post-Traumatic Epilepsy. Ann Nurs Pract 2(1): 1018.