

## Original Research Article

# Knowledge and attitude towards epilepsy among pharmacy students from Mumbai university

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## ABSTRACT

**Background:** Epilepsy is a chronic disorder of the brain that affects people worldwide. The overall prevalence (3.0-11.9 / 1,000) and incidence (0.2-0.6/1,000) of epilepsy in India are comparable to the rates of high-income countries. The high prevalence of negative attitudes towards epilepsy has been highlighted by several studies. Pharmacy students represent a better-educated section of society regarding drugs and have the potential to create awareness, and influence attitudes towards the disease. Thus, it is important that they have the appropriate and updated knowledge and appropriate attitude towards epilepsy and antiepileptic drugs. Objective of the present study was to determine the Mumbai University pharmacy student's awareness about epilepsy, so as to know the kind of education and awareness strategies that would be applicable to them.

**Methods:** A cross-sectional study was carried out among students from Mumbai University, India during May-June 2017. Two hundred and fifty students were approached to participate in the study of which 213 agreed to participate (males: 107; females: 106). Pretested questionnaire was distributed and collected data was analyzed using IBM SPSS version 23.

**Results:** Response rate for this study was 85.2% (213/250). Ninety six percent (204/213) of the participants had heard or read about epilepsy. Overall knowledge was poor (40.2%) and attitude was fair (75.3%). None of the participants were aware about recent research regarding hereditary nature of epilepsy. Only 2 (0.98%) students were aware how to perform the first aid in epilepsy. Only 6.8% participants felt that epileptics should participate in sports.

**Conclusions:** The findings of this study show that, even with extensive curriculum covering diseases, drugs and relevant laws of land, the knowledge and attitude scores were low. There is a need to have focused education and campaigns to increase the knowledge and attitude towards epilepsy.

**Keywords:** Attitude, Epilepsy, Knowledge, Seizures, University students

## INTRODUCTION

Epilepsy is a chronic disorder of the brain that affects people of all ages worldwide. It is characterized by recurrent seizures, which are brief episodes of

involuntary movement that may involve a part of the body (partial) or the entire body (generalized) and are sometimes accompanied by loss of consciousness and control of bowel or bladder function. Seizure episodes are a result of excessive electrical discharges in a group of

brain cells. Different parts of the brain can be the site of such discharges. Seizures can vary from the briefest lapses of attention or muscle jerks to severe and prolonged convulsions. Seizures can also vary in frequency, from less than 1 per year to several per day. One seizure does not signify epilepsy (up to 10% of people worldwide have one seizure during their lifetime). Epilepsy is defined as having 2 or more unprovoked seizures.<sup>1</sup>

Approximately 65 million people worldwide have epilepsy, making it one of the most common, chronic, serious neurological diseases globally.<sup>2</sup> Nearly 80% of the people with epilepsy live in low- and middle-income countries. People with epilepsy respond to treatment approximately 70% of the time. About three fourths of people with epilepsy living in low- and middle-income countries do not get the treatment they need because antiepileptic drugs are inaccessible or too expensive.<sup>1,3,4</sup> Nevertheless, not all patients respond to available medical treatments, with increasing evidence that surgery and other treatments (e.g. neurostimulation and diet) can be beneficial.<sup>5</sup> Epilepsy accounts for 0.6% of the global burden of disease, and has significant economic implications in terms of health care needs, premature death and lost work productivity.<sup>1</sup> Developing countries carry 90% of the financial burden of epilepsy, as 85% of world's 40 million people with epilepsy live in developing countries.<sup>6-8</sup>

The overall prevalence (3.0-11.9 per 1,000 population) and incidence (0.2-0.6 per 1,000 population per year) data from recent studies in India on general population are comparable to the rates of high-income countries.<sup>9</sup> An Indian study conducted in 2001 showed that the annual cost of epilepsy per patient was INR 13,755 (USD, 344). The direct cost was INR 3,725 (USD, 93), and the indirect cost was INR 10,031 (USD, 251). Direct cost included medical consultations (INR 329), laboratory services (INR 271), hospitalization charges (INR 316), and cost of travel to clinics (INR 659). The indirect cost included the cost of lost productivity due to seizures, its complications, or attendance to clinics. There are around 5 million people with epilepsy in India. The economic burden due to epilepsy to the nation is to the tune of INR 68.75 billion (USD, 1.7 billion).<sup>10</sup> Epilepsy is one of the world's oldest recognized conditions, with written records dating back to 4000 BC. Fear, misunderstanding, discrimination and social stigma have surrounded epilepsy for centuries. This stigma continues in many countries today and can impact on the quality of life for people with the disorder and their families.<sup>1</sup> The high prevalence of negative attitudes towards epilepsy has been highlighted by several studies, carried out in diverse communities including India, Ethiopia, Hong Kong and the United States.<sup>11-14</sup>

However, a higher level of education correlates positively with awareness, knowledge and attitude concerning epilepsy. Community-based studies have reported that

better-educated individuals offer more favorable opinions and display positive attitude (Mirnics et al, Chung; Hills and Mackenzie; Jensen and Dam).<sup>15-18</sup> Pharmacy students represent a better-educated section of society regarding drugs and have the potential to create awareness, improve concepts and influence attitudes towards the disease. Thus, it is important that they have the appropriate and updated knowledge and appropriate attitude towards epilepsy and antiepileptic drugs. The objective of this study was therefore to determine the Mumbai University pharmacy student's awareness about epilepsy, so as to know the kind of education and awareness strategies that would be applicable to them.

## **METHODS**

### ***Study design and respondents***

This descriptive study was performed in May-June 2016, among pharmacy students from Mumbai University, India. The study protocol was approved by V. V. research Independent Ethics Committee, Mumbai, India. Two hundred fifty students were contacted by study team member in their classrooms and were given a brief introduction about the research project. Those who desired to participate were explained the purpose and objectives of the study. On the basis of the eligibility criterion (those who gave a written informed consent and are registered students of Mumbai University) 213 pharmacy students were selected for the present study.

### ***Study instrument***

The survey questionnaire was prepared in English after reviewing the literature for similar studies. The questionnaire was framed to gather information on demographics and knowledge, behavior and attitude epilepsy towards antibiotic use.

A pilot study was done with a sample of 30 students, to know the average time required for face to face interview for completing the questionnaire and to ensure that it is appropriate and understandable to students. Pilot population was not part of the final study.

### ***Collection of data***

Students were interviewed face to face in the student office with prior appointment by a study team member. The purpose of the research was explained to the respondents, anonymity and confidentiality were guaranteed and maintained. The researchers complied with the international ethical guidelines for research. The data was recorded into the predesigned data report form (DRF) by interviewers.

### ***Data entry and analysis***

Collected data from individual DRF was entered into Microsoft excel and was verified by the authors other

than interviewers. Data were analyzed by using descriptive statistical methods and a bivariate analysis was conducted with all relevant independent variables. P-value  $\leq 0.05$  was considered as significant. IBM SPSS version 23 was used for statistical analysis.

## RESULTS

Response rate for this study was 85.2% (213/250). Out of a total of 213 participants there were 107 (51%) males and 106 (49%) females. Ninety six percent (204/213) of the participants (males; 100/107, females 104/106) had heard or read about epilepsy. This was used as basis for further analysis of questions about knowledge and attitude about epilepsy. Overall knowledge about epilepsy was low (40.2%), in spite of 97% (197/204) participants confirming attending a lecture or seminar on epilepsy in the past. Latest research has shown that epilepsy can be hereditary. But in the present study none of the participants had knowledge about this fact. Ninety

eight percent of the participants felt that epilepsy is a form of mental illness. Less than one percent (0.98%) of the participants had knowledge on how to perform first aid in epilepsy. None of the participants had a family member with epilepsy and only 1 participant had seen someone having epileptic attack. Ninety nine percent participants correctly responded that epilepsy can be fatal but can be controlled. In spite of being from pharmacy background, 202 of 204 participants (99.02%) felt that anti-epileptic drugs should be dispensed by pharmacist without a valid prescription. Overall attitude score in the present study was fair (75.3%). More than 90% of the participants felt that epileptics can receive school/college education (99.5%) and can perform daily activities (95%). All the participants agreed that epileptics should not be isolated from normal population. But only 6.8% (14/204) participants thought that epileptics should participate in sports. There was no significant difference between males and females about knowledge and attitude towards epilepsy.

**Table 1: Knowledge and attitude towards epilepsy.**

Variable	Base answer	Male n (%)	Female n (%)	Total n (%)	$\chi^2$ value	p-value
Gender		107(51)	106(49)	213 (100)	-	-
Have you heard or read about epilepsy?	Yes	100(93)	104(98)	204 (96)	2.8	0.09
Have you ever attended a lecture or seminar on epilepsy?	Yes	98 (98)	99 (95)	197 (97)	1.2	0.27
<b>Epilepsy Knowledge</b>						
Do you think epilepsy is contagious?	No	100 (100)	104 (100)	204 (100)	-	-
Do you think epilepsy is hereditary?	Yes	0 (0)	0 (0)	0 (0)	-	-
Do you think epilepsy is a form mental illness?	No	1 (1)	3 (2.8)	4 (2)	0.94	0.33
Do you think epilepsy is caused by evil spirits?	No	100 (100)	104 (100)	204 (100)	-	-
Do you think people can die from epileptic seizures?	Yes	100 (100)	102 (98)	202 (99)	-	-
Do you think epilepsy can be controlled?	Yes	100 (100)	102 (98)	202 (99)	-	-
Do you know how to perform first-aid in epilepsy?	Yes	2 (2)	0 (0)	2 (0.98)	-	-
Does anyone in your family have epilepsy?	Yes	0 (0)	0 (0)	0 (0)	-	-
Have you ever seen anyone having epileptic attack?	Yes	0 (0)	1 (0.96)	1 (0.49)	-	-
Do you think anti-epileptic drugs should be dispensed by pharmacist without a valid prescription?	No	0 (0)	0 (0)	2 (0.98)	-	-
Knowledge average		40.2%				
<b>Epilepsy Attitude</b>						
Do you think epileptics can receive education (school/ college)?	Yes	100 (100)	103 (99)	203 (99.5)	-	-
Do you think epileptics can perform daily activities?	Yes	96 (96)	98 (94)	194 (95)	0.34	0.55
Do you think epileptics should participate in sports?	Yes	7 (7)	7 (6.6)	14 (6.8)	0.005	0.93
Do you think epileptics should be isolated from normal population?	No	100 (100)	104 (100)	204 (100)	-	-
Attitude average		75.3 %				

## DISCUSSION

The present study done among pharmacy students from Mumbai University showed that ninety six percent (204/213) of the participants had heard or read about epilepsy. This was relatively higher to those reported among general population from India, Malaysia, and Pakistan.<sup>11,19,20</sup>

For the question “do you think epilepsy is contagious?” our results were better than the other Indian studies.<sup>21,11</sup> All the participants of the present study felt epilepsy is not hereditary. A study done among pharmacy students from Pakistan reported seventy percent students acknowledging the hereditary nature of epilepsy.<sup>22</sup> Similarly other studies done among general population (India: 20%, Nigeria: 31%) have reported higher percentage of participants believing hereditary nature of epilepsy.<sup>11,23</sup> These difference could have originated as there was conflicting evidence regarding hereditary nature of epilepsy. Recent research published in the Journal Nature Genetics, proves the hereditary nature of epilepsy previously believed to be caused by structural abnormalities such as a brain injury or a tumor. Known as focal epilepsy, it is the most common form of epilepsies, accounting for about 60 percent of all cases.<sup>24</sup>

Ninety eight percent of the participants from present study believed that epilepsy is a form of mental illness. This figure is much higher than the study done in rural India (22%).<sup>11</sup> In the present study, only 2 out of 204 (0.98%) knew how to perform first-aid in epilepsy. A similar study done in pharmacy students from Karachi reported 33% participants knowing first aid in epilepsy.<sup>22</sup> Other studies from India, have reported higher percentage of people having know-how of first aid in epilepsy. These results were surprising based on the fact that present study was done in pharmacy students and other studies were done in general population.<sup>11,21</sup>

Two hundred two out of 204 participants believed that anti-epileptic drugs should be dispensed by pharmacist without a valid prescription. This was unbelievable as pharmacy students study drug and cosmetic act and rules and they are expected to know that Indian drugs and cosmetic act and rule allows sale of antiepileptic drugs in India only after presenting valid physician prescription. Overall attitude average score in the present study was 75.3%. Only 14 participants out of 204 (6.8%) participants in the present study believed that epileptics should participate in sports. This figure was lower compared to a study done among pharmacy students from (60%) Karachi, Pakistan.<sup>22</sup>

## CONCLUSION

The findings of this study identify the scarcity of knowledge and awareness, however majority of the

participants had positive attitudes towards epilepsy. Even though epilepsy and antiepileptic drugs are part of the pharmacy curriculum, it did not translate into better knowledge and attitude. In addition, pharmacy students thought that antiepileptic drugs should be dispensed without a valid prescription shows lacuna in their understanding of pharmacology and drug and cosmetic act and rules of India. Even with extensive curriculum covering diseases, drugs and relevant laws of land, the knowledge and attitude scores were low. There is a need to have focused education and campaigns to increase the knowledge and attitude towards epilepsy. Future research regarding the value of targeted education and campaigns for epilepsy will be worthwhile.

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