Full Length Research Paper

Awareness of epilepsy in pharmacy students in different universities of Karachi, Pakistan

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The aim of this study was to determine knowledge and awareness regarding epilepsy among under graduate pharmacy students in Karachi, Pakistan. The questionnaire was distributed to the pharmacy students of 4th and 5th year in three different universities of Karachi, Pakistan from August to September, 2013 and the data was assessed using descriptive analysis. Five hundred questionnaires were distributed among the students and 467 were returned (93.4% response rate) after filling. Majority of the students were female (n = 380, 81.4%). It was found that all the students were aware about epilepsy (100%) while (71.9%) were aware of its types. It was also found that printed information was the main information source regarding epilepsy apart from class lectures. Overall responsiveness for most of the questions was in affirmative. The result of this study indicates a satisfactory level of awareness and knowledge of epilepsy among undergraduate pharmacy students in Karachi but it is necessary to advance understanding of the disease and its treatment among all the pharmacy students as they represent a well-informed fraction of society and healthcare system regarding the drug use.

Key words: Epilepsy, awareness, pharmacy students.

INTRODUCTION

Epilepsy or recurring seizures is one of the most common and non-communicable brain disease world-wide (Scott et al., 2001). Patients with epilepsy also face stigma placed upon them by the people in addition to their disease which deprives patients of disclosing their condition and seeking proper treatment (World Health Organization (WHO), 1999). Knowledge and approach worldwide regarding epilepsy differs broadly but has improved very much than before ensuing more favorable social environment (Mirnics et al., 2001; Jacoby, 2002). Surveys are also conducted to raise the awareness of the extent of social recognition of epilepsy (Jacoby et al., 2004).

In the urban areas, civic stance towards epilepsy has very much enhanced over the years (Jacoby, 2002). Studies have reported that more educated people present more positive attitude and (Jensen et al., 1992; Chung et al., 1995) proper perception of epilepsy but fallacy still continues in some areas (Nyame et al., 1997). In countries like United States and Denmark, enhanced public knowledge and approach about epilepsy have been seen due to sturdy public education and understanding (Caveness and Gallup, 1980; Canger and Cornagsia, 1985; Jensen and Dam Me, 1992) whereas inadequate studies are offered in developing countries (Radhakrishnan et al., 2000; Gambhir et al., 1995). On

the other hand, the awareness about epilepsy is revealed to be enhanced in a number of studies from developing as well as developed countries (Jensen and Dam M, 1992; Radhakrishnan et al., 2000; Cuong et al., 1995; Choi et al., 2004; Rwiza et al., 1993).

The pharmacist is a reliable and easy to get to health care professional. Community pharmacists present a significant role in educating patients about their drugs and diseases hence providing medication therapy management (Bluml, 2005). There is an optimistic impact of pharmaceutical care services provided in various clinical settings in developed countries; findings regarding developing countries are still deficient (Awad et al., 2006). The pharmacists are more seen as provider of pharmaceutical care service now (Lawrence et al., 2004) as they take direct responsibility for patients' drug related needs (Dugan, 2006; Pearson, 2007). The provision of pharmaceutical care in community pharmacy is still emerging in different parts of world like in Europe (Germany, Sweden), Canada and USA (Christensen and Farris, 2006; Hughes et al., 2010; Jones et al., 2005; Eickhoff, 2006; Westerlund and Bjork, 2006).

Awareness and stance among the general population regarding epilepsy differ extensively worldwide. In the urbanized areas, civic attitude towards epilepsy has significantly been enhanced, leading to more constructive social milieu (Mirnics et al., 2001; Jacoby, 2002). Studies have shown that primary care physicians desire to have community pharmacists to manage a whole medication report and screening for drug interactions for patients with epilepsy (McAuley et al., 1999; 2009). It was observed in England (Tinelli et al., 2007) after experiencing a pharmacy-led medication management service that patients had an attitudinal swing towards the pharmacists. In turn, this would enhance pharmacist job satisfaction as they dedicate more time in consultation and drug use management (Schommer et al., 2006).

Pharmacists should continue to be involved in the care of patients with epilepsy because it was observed that specialized sessions given by pharmacists increased caregiver's knowledge about epilepsy and medication adherence (Chen et al., 2013). Studies have shown that patient education is essential to develop compliance and to raise contentment levels in patients during critical therapies (Rafique et al., 2006; Saeed and Ibrahim, 2005) but unfortunately, this is hardly ever acknowledged by even major health care institutions (Rafique et al., 2006) in Pakistan. The burden of epilepsy on the whole is not fully calculated and valid information regarding this is stumpy (Khatri et al., 2003). There are about 50 million epilepsy patients known worldwide among which approximately 85% are existing in developing countries.

The healthcare professionals have found it alarming that Pakistan is having high prevalence of epilepsy (Aziz et al., 2005). According to WHO, approximately 50% of epilepsy cases start at youth and 70 to 80% could have normal lives after appropriate treatment (Aziz et al., 2005).

This necessitates the education and practice of pharmacists since it was found that treatment condition for epilepsy was pitiable with short rate of improvement in rural as compared with optimum therapeutic effect in urban persons receiving the treatment at same time (Patsalos et al., 1993). Hence, pharmacists have an important role for the patients with epilepsy providing best possible care to them (McAuley et al., 1999). Since pharmacists are involved in counseling and communication with the patients therefore the patients also preferred that their pharmacist correspond to their epileptologist about drug interactions and adverse effects (James et al., 2009). Carole Brown reported that there are complexities with diagnosis, counseling and prescribing of antiepileptic drugs and the participation of a pharmacist practitioner with a particular interest in epilepsy (PwSI epilepsy) within the neurology team can maximize the skill blend with general practitioners (Carole, 2012).

This study was conducted to assess the level of knowledge of pharmacy students of 4th and 5th year about epilepsy and its management as they are eminent part of the healthcare system. Their contribution as healthcare professional in the future regarding epilepsy can play a distinguished role in improving the quality of life for such patients.

METHODOLOGY

The questionnaires were distributed to the pharmacy students of 4th and 5th year in three different universities of Karachi, Pakistan, conducting Pharm.D courses, from August to September, 2013. The students of higher classes were recruited for this study as they have been taught about the basics of the disease and its management in pharmacy curriculum up to satisfactory extent. The questionnaire comprised of a series of questions to assess the level of information and understanding of under graduate pharmacy students regarding epilepsy. Most of the questions were adapted from previous studies (Mielke et al., 1997; Kankirawatana, 1999; Rahman, 2005). It took about 15 minutes for each student to complete a single questionnaire and the questionnaires were returned to the researchers on the same day after filling. The data obtained was analyzed via descriptive statistics.

RESULTS AND DISCUSSION

The analysis of students' awareness regarding disease and their management is essential as it permits the deterrence of inadequate information of future health care providers. Consequently, this may result in improved health support and quality of life of one suffering from various diseases. This study included questions on awareness of epilepsy. The respondents were of age group between 23 to 25 years and majority were female (n = 380, 81.4%). All the respondents had basic awareness of epilepsy while (71.9%) were aware of its kinds (Table 1). About one fourth of the students (21.8%) claimed that they have excellent awareness regarding epilepsy (Table 1). Books and leaflets were found as the

Table 1. Basic Knowledge Regarding Epilepsy

S/No	Question	Yes (%)	No (%)	Don't Know (%)
1	Do you know what epilepsy is?	467 (100)	0 (0)	-
2	Your awareness regarding epilepsy is			
	Excellent	102 (21.8)		
	Adequate	166 (35.5)	-	-
	Average	163 (34.9)		
3	Do you know someone suffering from epilepsy?	147 (31.5)	320 (68.5)	-
4	Have you ever seen someone having a seizure/fit?	282 (60.4)	185(39.6)	-
5	Do you know how to help a patient with epilepsy during the seizure?	220 (47.1)	247 (52.9)	-
6	Do you know how many types of seizures are there?	336 (71.9)	131 (28.1)	-
7	Do you think epilepsy is a contagious disease?	29 (6.2)	393 (84.2)	45 (9.6)
8	Do you think epilepsy is a chronic brain disease that cannot be cured or controlled?	127 (27.2)	314 (67.2)	26 (5.6)
9	Do you think all epileptic patients have the same symptoms?	96 (20.6)	316 (67.7)	55 (11.8)
10	Do you think all epileptics have to use an anti seizure drug?	265 (56.7)	134 (28.7)	68 (14.6)
11	Do you think people suffering from epilepsy need lifelong drug treatment?	339 (72.6)	72 (15.4)	56 (12)

as the major source of information (Figure 1) regarding epilepsy (n = 425, 91%) besides the lectures that are taught in their Pharmacy institutes according to the approved curriculum. Since university students symbolize a better-educated part of the population, therefore it is important that the students studying pharmacy in various universities should have the proper knowledge and suitable approach towards healthcare issues like epilepsy as the disease has considerable social implications. Earlier reports have also shown that there is a sturdy association between the age, level of education, etc towards epilepsy (Caveness and Gallup, 1980; Kim et al., 1994).

Among the respondents, (31.5%) knew some epilepsy patients personally and (60.4%) had witnessed the onset of an epileptic attack. Majority of the students (84.2%) were aware that epilepsy is not contagious and (67.7%) students had knowledge that patients with epilepsy show different signs and symptoms (Table 1). Almost half of the respondents (47.1%) claimed that they knew how to help patients with epilepsy during attack and (67.2%) students knew that epilepsy is not chronic/uncontrollable (Table 1). The students were asked to choose main manifestation of epilepsy and according to (60.4%) students it was convulsions (Figure 2). Convulsions were found as the most common cause of mortality in epilepsy patients (Mac and Tran, 2007).

The results of the study have shown that (73.8%) students knew that treatment of epilepsy (Figure 3) is mainly medication. More than half (56.7%) of the students thought that all patients with epilepsy should use medication and most of them (72.6%) emphasized on treatment for extended time period (Table 1). Antiepileptic agents can successfully manage epilepsy (World Health Organization, 2003) hence improving quality of life in patients with epilepsy. It has been observed that many patients with epilepsy have inadequate seizure control due to poor medication compliance (Jones and Butler, 2006). To help end a seizure, some respondents thought that eau de cologne (1.9%), shoe smell (47.3%) or onions (7.3%) would be helpful.

Conclusion

The Pharmacy students stand for a better-educated group in the healthcare system as they have more knowledge regarding the use of drugs, hence it is essential for them to clasp proper information of the disease and drug use. There is a need to improve certain aspects of knowledge and
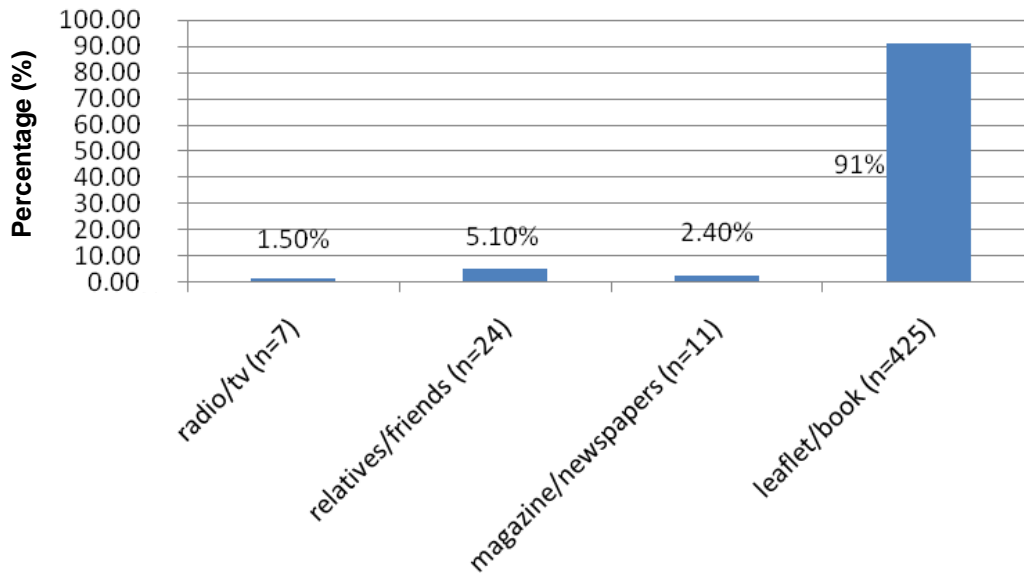
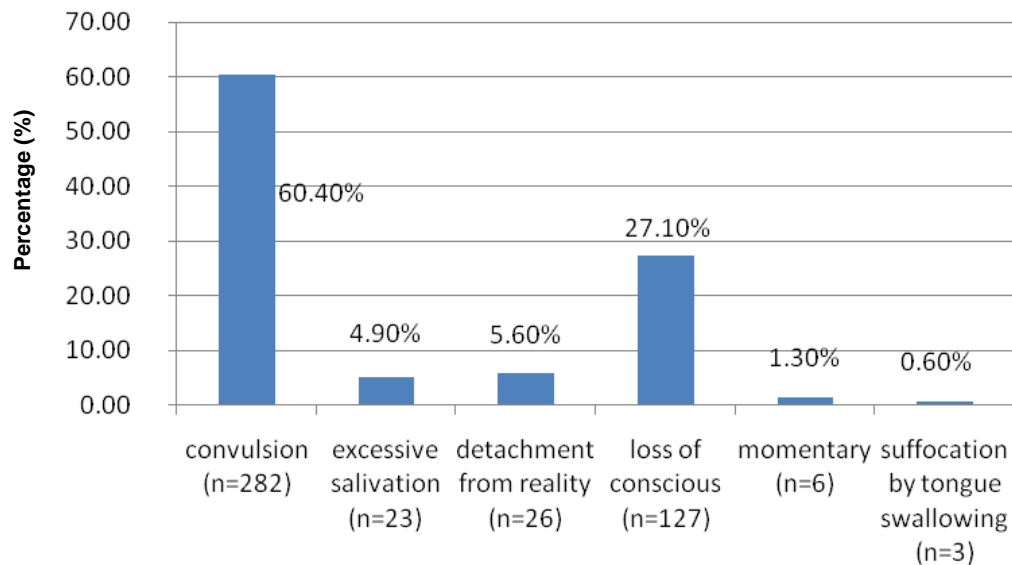**Figure 1.** Source of knowledge about epilepsy.

Figure 2. Manifestations of epilepsy.

understanding of epilepsy among pharmacy students especially for those selecting their career as clinical pharmacist. Besides, well-organized educational programs are required to develop proper public awareness about epilepsy.

STUDY LIMITATIONS AND SUGGESTIONS

This study covered only few universities in Karachi conducting pharmacy curriculum so in future studies, more pharmacy schools could be enrolled, even outside Karachi so as to have a comparison of knowledge among the students and identifying areas for improvement. Public knowledge and attitude towards epilepsy should also be assessed and students should be taught in the universities accordingly. The organizations like International League Against Epilepsy (ILAE) can play an important role in advancing and spreading knowledge about epilepsy. Such kind of organizations should also be founded in our country to promote research, education and training regarding epilepsy.
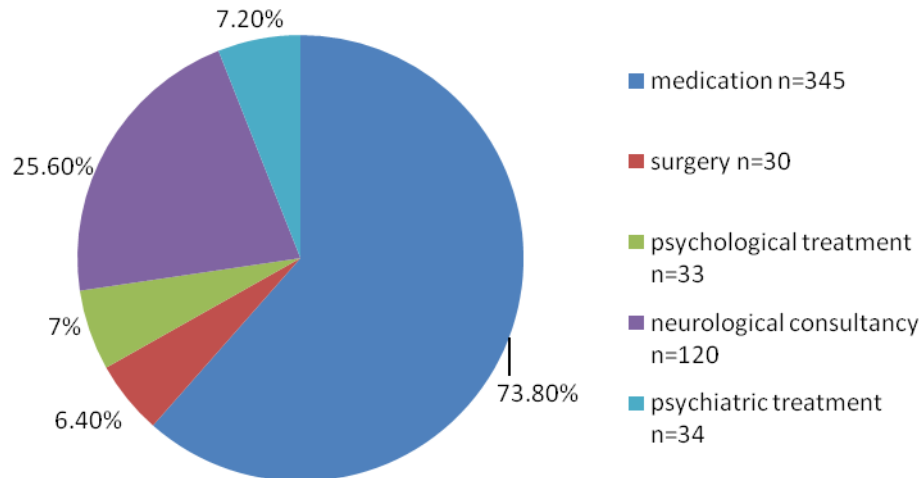
Figure 3. Treatment of epilepsy.

Conflict of Interests

The author(s) declared that they do not have any conflict of interests.

REFERENCES

Awad A, Al-Ebrahim S, Abahussain E (2006). Pharmaceutical care services in hospitals of Kuwait. J. Pharm. Sci. 9(2):149-157.

Aziz H, Ali SM, Frances P, Khan MI, Hasan KZ (1994). Epilepsy in Pakistan: a population based epidemiologic study. Epilepsia 35(5):950-958.

Bluml BM (2005). Definition of medication therapy management: development of profession wide consensus. J. Am. Pharm. Assoc. 45:566-572.

Canger R, Cornagsia C (1985). Public attitudes toward epilepsy in Italy: results of a survey and comparison with USA and west hormones data. Epilepsia 26:221-6.

Carole B (2012). Improving quality of care for epilepsy patients using a pharmacist review service. Progress Neurol. Psychiatr. 16(5):12-16.

Caveness WF, Gallup GH (1980). A survey of public attitudes towards epilepsy in 1979 with an indication of trends over the past thirty years. Epilepsy 21:509-18.

Chen C, Lee DS, Hie SL (2013). The impact of pharmacist's counseling on pediatric patients' caregiver's knowledge on epilepsy and its treatment in a tertiary hospital. Int. J. Clin. Pharm. 35(5):829-34.

Choi KS, Park KA, Lee HJ, Park MS, Lee CH, Cheon SE (2004). Familiarity with knowledge of and attitude toward epilepsy in residents of Seoul, South Korea. Acta Neurol. Scand. 110:39-45.

Christensen DB, Farris KB (2006). Pharmaceutical care in community pharmacies practice and research in US. Ann. Pharmacother. 40(7-8):1400-1406.

Chung MY, Chang YC, Lai YHC, Lai CW (1995). Survey of public wareness, understanding, and attitudes toward epilepsy in Taiwan. Epilepsia 36:488-93.

Cuong LQ, Thien DD, Jallon P (2006). Survey of public awareness, attitudes, and understanding toward epilepsy in Nhan Chinh, Hanoi, Vietnam, in 2003. Epilepsy Behav. 8:176-180.

Dugan BA (2006). Enhancing Community pharmacy through advanced pharmacy practice experiences. Am. J. Pharm. Edu. 70(1):21.

Eickhoff C (2006). Pharmaceutical Care in Community Pharmacies Practice and Research in Germany. Ann. Pharmacother. 40(4):729-735.

Gambhir SK, Kumar V, Singhi PD, Goel RC (1995). Public awareness, understanding and attitudes toward epilepsy. Indian J. Med. Res. 102:34-38.

Hughes CM, Hawwa AF, Scullin C, Anderson C, Hersberger KE (2010). Provision of pharmaceutical care by community pharmacists: a comparison across Europe. Pharm. World Sci. 32(4):472-487.

Jacoby A (2002). Stigma, epilepsy, and quality of life. Epilepsy Behav. 3:10-20.

Jacoby A, Gorry J, Gamble C, Baker GA (2004). Public knowledge, private grief: a study of public attitudes to epilepsy in the United Kingdom and implications for stigma. Epilepsia 45: 1405-1415.

Jensen R, Dam M (1992). Public attitudes toward epilepsy in Denmark. Epilepsia 33:459-463.

Jones EJ, Mackinnon NJ, Tsuyuki RT (2005). Pharmaceutical care in community pharmacies practice and research in Canada. Ann. Pharmacother. 39(9):1527-1533.

Jones RM, Butler JA (2006). Adherence to treatment in patients with epilepsy: associations with seizure control and illness beliefs. Seizure 15(7):504-508.

Khatri IA, Iannaccone ST, Ilyas MS, Abdullah M, Saleem S (2003). Epidemiology of Epilepsy in Pakistan: review of literature. J. Pak. Med. Assoc. 53(12):594-7.

Kim MK, Cho KH, Shin J, Kim SJ (1994). A study of public attitudes towards epilepsy in Kwang-Juarea. J. Kor. Neurol. Assoc. 12:410-27.

Lawrence L, Sherman J, Adams E, Gandra S (2004). Pharmacy students' perceptions of pharmaceutical care in retail and clinic settings. Am. J. Pharm. Educ. 68(1):4.

Mac TL, Tran DS (2007). Epidemiology, aetiology, and clinical management of epilepsy in Asia: a systematic review. Lancet Neurol. 6(6):533-543.

McAuley James W, Miller MA, Klatte E, Shneker BF (2009). Patients with epilepsy's perception on community pharmacist's current and potential role in their care. Epilepsy Behav. 14:141-145.

McAuley JW, Mott DA, Schommer JC, Moore JL, Reeves AL (1999). Assessing the needs of community pharmacists and primary care physicians in providing care to patients with epilepsy. J. Am. Pharm. Assoc. 39:499-504.

Mirnics Z, Czikora G, Zavecz T, Halasz P (2001). Changes in public attitudes toward epilepsy in Hungary: results of surveys conducted in 1994 and 2000. Epilepsia 42:86-93.

Nyame PK, Biritwum RB (1997). Epilepsy: knowledge, attitude and practice in literate urban population, Accra, Ghana. West Afr. J. Med. 16:139-1345.

Patsalos PN, Duncan JS (1993). Drug Safety. Int. J. Med. Toxicol. Drug Exp. 9(3):156-84.

Pearson GJ (2007). Evolution in the practice of pharmacy-not a revolution. CMAJ 176(9):1295-1296.

Radhakrishnan K, Pandian JD, Santoshkumar T, Thomas SV, Deetha TD, Sarma PS (2000). Prevalence, knowledge, attitude and practice of epilepsy in Kerala, South India. Epilepsia 41:1027-1035.

Rafique G, Azam SI, White F (2006). Diabetes knowledge, beliefs and practices among people with diabetes attending a university hospital in Karachi, Pakistan. East Mediterr. Health J. 12:590-8.

Rwiza HT, Matumja WBP, Kilonzo GP, Hawe J, Mbera P, Mwangombola R (1993). Knowledge attitude and practice towards epilepsy among rural Tanzanian residents. Epilepsia 34:1017-1023.

Saeed A, Ibrahim H (2005). Reasons for the Problems faced by Patients in Government Hospitals: results of a survey in a government hospital in Karachi, Pakistan. J. Pak. Med. Assoc. 55:45-7.

Schommer JC, Pedersen CA, Gaither CA, Doucette WR, Kreling DH, Mott DA (2006). Pharmacists' desired and actual times in work activities: evidence of gaps from the 2004 National Pharmacist Workforce Study. J. Am. Pharm. Assoc. 46:340-7.

Scott RA, Lhatto SP, Sander JWAS (2001). The treatment of epilepsy in developing countries and its problems: where do we go from here?. Bull. World Health Organ. 79(4):344-51.

Tinelli M, Bond C, Blenkinsopp A, Jaffray M, Watson M, Hannaford P (2007). Patient evaluation of a community pharmacy medications management service. Ann. Pharmacother. 41:1962-70.

Westerlund LT, Bjork HT (2006). Pharmaceutical care in community pharmacies practice and research in Sweden. Ann. Pharmacother. 40(6):1162-1169.

World Health Organization (WHO) (1999). Fact sheet 217: The global burden of mental and neurological problems. Geneva, WHO. p. 99.

World Health Organization (WHO) (2003). Adherence to long-term therapy. WHO, Geneva. P 211.