DOI: https://doi.org/10.53350/pjmhs2115102633

ORIGINAL ARTICLE

Assess Self-Management and Adherence to Use Antiepileptic Drugs in Epileptic Pediatric Patients: Cross Sectional Study

MUHAMMAD QAISER[1], ALI FAHEEM[2], MUHAMMAD AKRAM[3], MEHWISH MEMON[2], RIZWAN MASUD[4], MUHAMMAD ZEESHAN[2], QASIM SHAHZAD[5], MUHAMMAD ADNAN QAYYUM[6], MUHAMMAD ZUBAIR NOOR[6], TALHA LAIQUE[7*]

[1]*Department of Pharmaceutics, BZU, Multan- Pakistan*
[2]*Department of Biochemistry, CMH Medical College, Kharian- Pakistan*
[3]*Department of Anesthesiology, Major Shabeer Shareef THQ Hospital, Kunjah-Pakistan*
[4]*Department of Physiology, CMH Medical College, Kharian- Pakistan*
[5]*Department of Pharmacy, BZU, Multan- Pakistan*
[6]*Department of Pharmacology, BZU, Multan- Pakistan*
[7]*Department of Pharmacology, Allama Iqbal Medical College, Lahore-Pakistan*
Correspondence to Dr. Talha Laique, Email: talhalaique51@gmail.com Tel:+92-331-0346682.

ABSTRACT

Background: No adherence to antiepileptic drugs is a considerable problem for epileptic suffered children and their families.
Aim: To determine self-management and adherence to antiepileptic drugs among epileptic children.
Study Design: Cross sectional study.
Methodology: Present study conducted at Children Complex Hospital, Multan. Sample size was 105. Data was collected after taken the informed consent from the study participants. Institutional approval was taken. Data analyzed through latest version of SPSS 25, including mean, percentage and frequency.
Results: Majority 6(81.9%) agreed that doctors/nurses fully explained seizures/epilepsy (diagnosis). Significant correlation was seen between gender and dependent variables (transportation available and medications) with p-value of less than 0.05.
Conclusion: This study clearly showed that most patients were well aware about their diagnosis told by doctors and had a knowledge about consequences due to non-adherence with their treatment.
Keywords: Adherence, Self-Assessment and Anti-Epileptic Drugs.

INTRODUCTION

Epilepsy is a neurological disorder characterized by recurrent epileptic seizures. Regulation of brain electrical activity results in synchronized and excessive neuronal discharge. Epileptic patients have complications like neurodevelopment delay, cognitive impairment, depression and anxiety as shown by previous researches[1].

Children are the common victims of epilepsy. Proper and right management is required to improve the quality of life among it victims. Children with uncontrolled seizures have various concerns related with disease progression and prognosis. Children having uncontrolled seizure attacks suffer significant illnesses, social stigma and harsh society behavior. This leads to various mental health issues among them[2]. Contribution comes from both internal and external factors. Internal includes functional and structural brain problems while reactions of others people affect externally[3].

Pharmacological agents like anticonvulsant drugs and sedatives stop the excessive brain electrical activity. Epileptic children fail to control epileptic impulse hence most are aggressive, frustrated, socially unacceptable and anxious[2]. Almost 65% newly diagnosed epileptic patients recover easily from the seizure with medications if given at start properly[4]. Antiepileptic drugs produce minimum harmful or toxic effects with better seizures control but non-adherence leads to enhanced epileptic seizures[5].

The concept of self-management is very important to understand by the parents. The Parents play a key role in the management and treatment of their child under the observation of doctors in the case of epilepsy. However, its a difficult task to handle and manage them because of non-adherence and other related issues[4]. Non adherence among epileptic children is a great challenge in their treatment plan. As shown by literature review that prevalence of non-adherence to antiepileptic drugs ranged from 12-35% among old patients while its prevalence is quite high among newly diagnosed patients[6]. In the light of above description and lack of data on this health issue, we planned present study with aim to determine self-adherence with antiepileptic drugs among children.

The objective of the study was to determine self-management and adherence to antiepileptic drugs among epileptic children.

METHODOLOGY

Present study conducted at Children Complex Hospital, Multan. Sample size was 105. Data was collected after taken the informed consent from the study participants. Institutional approval was taken. An adopted tool was used to collect the data. Reliability checked by Cronbach alpha which was 0.71. The study tool consisted of 2 parts (i-Demographic data, ii-Questioner items of self-management and adherence).
Data analyzed through latest version of SPSS 25, including mean, percentage and frequency. High score was represented by >40% better adherence while the lower score was <40% (poor adherence).

RESULTS

Different questions were asked from enrolled subjects thus their results were compiled as frequency and percentage in table-1 as shown. The association between independent (gender) and dependent variables was shown with P-value in table-2.

Table-1: Pediatric Epilepsy Medication Self-Management Questionnaire

	S. Disagree	Disagree	Agree/disagree	Agree	S. Agree
Fully explained Diagnosis	4 (3.8%)	5 (4.8%)	0 (0%)	86(81.9%)	10 (9.5%)
Side effects to look for.	7(6.7%)	9(8.6%)	10(9.5%)	73(69.5%)	6(5.7%)
Emergency contact	1(1%)	9(8.6%)	9(8.6%)	63(60%)	23(21.9%)
Health care team efficacy	0(0%)	7(6.7%)	11(10.5%)	71(67.6%)	16(15.2%)
Seizure freedom	0(0%)	4(3.8%)	0(0%)	84(80%)	17(16.2%)
Risks of discontinuing medication.	3(2.9%)	2(1.9%)	22(21%)	63(60%)	15(14.3%)
Health care team listens concerns	0(0%)	13(12.4%)	17(16.2%)	60(57.1%)	15(14.3%)

Health workers easy to contact	4(3.8%)	18(17.1%)	18(17.1%)	57(54.3%)	8(7.6%)
Taking prescribed medicine	3(2.9%)	2(1.9%)	5(4.8%)	83(79%)	12(11.4%)
Availability of transportation	27(21%)	17(16.2%)	10(9.5%)	45(42.9%)	11(10.5%)
Follow medical advice	1(1%)	6(5.7%)	0(0%)	79(75.2%)	19(18.1%)
Receive my treatment as directed	1(1%)	0(0%)	0(0%)	89(84.8%)	15(14.3%)
No difficulty attending follow ups	4(3.8%)	16(15.2%)	11(10.5%)	63(60%)	11(10.5%)
Family agreement regarding Rx	4(3.8%)	4(3.8%)	2(1.9%)	57(54.3%)	38(36.2%)
Receive my medication timely	4(3.8%)	2(1.9%)	4(3.8%)	86(81.9%)	9(8.6%)
Daily medications	4(3.8%)	5(4.8%)	2(1.9%)	74(70.5%)	20(19%)
Treatment Importance	2(1.9%)	2(1.9%)	0(0%)	90(85.7%)	11(10.5%)
Seizures control by medication	0(0%)	8(7.6%)	2(1.9%)	83(79%)	12(11.4%)

Table-2: P-value compared with the standard 0.055

Dependent Variable	Independent variable	P value
Transportation availability for appointments	Gender	0.044*
Difficulty in fitting medications in daily schedule		0.002*
Activities that interfere with taking of medication		0.626

*Statistically significant.

DISCUSSION

Present study evaluated self-management and adherence to antiepileptic drugs among children. Different Adherence levels were identified and classified as high adherence, moderate and early non-adherences. We used the best resources of our knowledge to study the relationship between self-management and adherence with antiepileptic drugs among pediatric population as children face epilepsy more as compared to adults.

Our study showed that pediatric patients who received AEDs given at the beginning of epilepsy were more adherent[7]. Prevalence of non-adherence was low with drugs if the care giver was employed immediately and if he did his job carefully [8]. Our study showed that pediatric patients who were adherent with drug therapy had better satisfactory outcomes. Patient on single drug therapy were more compliant thus better clinical outcomes shown in comparison to patients on multiple drug therapy. Mono-therapy was effective due to easy and better compliance by patients. Hence, leading to satisfactory results by monotherapy in comparison to different complex regimens[9].

Due to alarming and increasing resistance and poor compliance by patients has led to self-management interventions as a need of time among epileptic patients[10]. Important barriers in the way of effective healthcare include limited time from doctor for patient. Due to high burden of diseased, doctors fail to fully understand the patient health status and their financial issues thus causing poor health care facility given to patients[11].

Our results demonstrate that there is more prevalence of epilepsy in females as compared to males. Majority of the epileptic patients falls in the range of 1 to 5 years. Seizures frequency also shows majority of the patients have an epileptic attack in a week. Our study also reveals that the majority of the mothers were educated but fathers were uneducated. Financial conditions of the family is also a hurdle in managing epilepsy as majority of the participants have family income just 15000 and they cannot afford the medication cost. So proper awareness about the management of risk and triggering factors is necessary[12].

Limitations: Our limitations include single centre study with limited financial and human resources.

CONCLUSION

This study clearly showed that most patients were well aware about their diagnosis told by doctors and had knowledge about consequences due to non-adherence with their treatment. From the above study we were able to assess the parental self-management of their child epilepticus disorder in the four domains of disease, treatment knowledge and expectations. However, more awareness programmes need to occur in our clinical setups.

Author's contribution: MQ, AF& MA: Conception and design of work, **MM, RM & MZ:** Collecting and analyzing the data, **QS, MAQ, MZN & TL**: Drafting the manuscript.

Conflict of interest: None

Funding: None

REFERENCES:

1. Al-aqeel, S. and Al-sabhan, J., 2011. Strategies for improving adherence to antiepileptic drug treatment in patients with epilepsy. *Cochrane Database of Systematic Reviews*, (1).
2. Dilorio, C.K., Bamps, Y.A., Edwards, A.L., Escoffery, C., Thompson, N.J., Begley, C.E., Shegog, R., Clark, N.M., Selwa, L., Stoll, S.C. and Fraser, R.T., 2010. The prevention research centers' managing epilepsy well network. *Epilepsy & Behavior*, *19*(3), pp.218-224.
3. Janković, S., & Lukić, S. (2017). Antiepileptic potential of ganaxolone. *Vojnosanitetski pregled, 74*(5), 467-475.
4. Kerr, M.P., Mensah, S., Besag, F., De Toffol, B., Ettinger, A., Kanemoto, K., Kanner, A., Kemp, S., Krishnamoorthy, E., LaFrance Jr, W.C. and Mula, M., 2011. International consensus clinical practice statements for the treatment of neuropsychiatric conditions associated with epilepsy.
5. Modi, A. C., Monahan, S., Daniels, D., & Glauser, T. A. (2010). Development and validation of the pediatric epilepsy medication self-management questionnaire. *Epilepsy & Behavior, 18*(1-2), 94-99.
6. Modi, A. C., Pai, A. L., Hommel, K. A., Hood, K. K., Cortina, S., Hilliard, M. E., . . . Drotar, D. (2012). Pediatric self-management: a framework for research, practice, and policy. *Pediatrics, 129*(2), e473-e485.
7. Modi, A. C., Rausch, J. R., & Glauser, T. A. (2011). Patterns of nonadherence to antiepileptic drug therapy in children with newly diagnosed epilepsy. *Jama, 305*(16), 1669-1676.
8. Modi, A. C., Rausch, J. R., & Glauser, T. A. (2014). Early pediatric antiepileptic drug nonadherence is related to lower long-term seizure freedom. *Neurology, 82*(8), 671-673.
9. Morita, D. A., Glauser, T. A., & Modi, A. C. (2012). Development and validation of the pediatric epilepsy side effects questionnaire. *Neurology, 79*(12), 1252-1258.
10. Nazziwa, R., Mwesige, A. K., Obua, C., Ssenkusu, J. M., & Mworozi, E. (2014). Adherence to antiepileptic drugs among children attending a tertiary health unit in a low resource setting. *Pan African Medical Journal, 17*(1).
11. Nyinawumuntu, J., Sebera, F. M., Patel, A., Hahirwa, I. (2019). *Adherence to antiepileptic treatment and its predictors among adolescents with epilepsy at Ndera neuropsychiatric Hospital, Rwanda.*
    Raina, S. K., Razdan, S., & Nanda, R. (2011). Prevalence of neurological disorders in children less than 10 years of age in RS Pura town of Jammu and Kashmir. *Journal of pediatric neurosciences, 6*(2), 103.