

The Effect of 5A Self-management Program on Medication Adherence of Epileptic Patients in During the COVID – 19 Pandemic

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Abstract

Background: Adherence to medication adherence plays a vital role in controlling the problems and complications of epilepsy. During the COVID – 19 pandemic and limitations of face-to-face education, the use of distance education can play an important role in providing education to patients. Therefore, the aim of this study is the effect of model 5A self-management training on medication adherence in epileptic patients.

Methods: In this single-blind randomized controlled trial, 56 epilepsy patients referred to Shiraz Namazi Hospital were divided into intervention and control groups using random allocation. Thereafter, 5A self-management training sessions were virtually held in 5 sessions in WhatsApp application for intervention group. The data collection tool was Morisky medication adherence scale at two stages of before and two months after intervention. Data analysis was performed using SPSS 21 software.

Results: The results of Wilcoxon test showed that in intervention group, the mean drug adherence in patients after intervention significantly increased compared to before intervention ($p = 0.005$). But in control group, this was not significant ($p = 0.909$). According to results of Mann-Whitney test, there was no significant difference between intervention and control groups before intervention ($p = 0.632$). However, by passing two months from intervention, a significant difference was found between intervention and control groups ($p = 0.041$).

Conclusion: Based on results, the implementation of Model 5A can be effective on medication adherence in epilepsy patients. This program can be considered as a suitable method in epileptic patients in during COVID – 19 pandemic.

Background

Epilepsy is one of the most common neurological disorders characterized by recurrent seizures. This disease clinically associated with changes in feeling, behavior, perception, and level of consciousness (1). In 2019, 7.6 people per 1,000 people had epilepsy worldwide, and the disease is likely to occur at any age, race, and social class(2). Moreover, this accounts for more than 0.5% of the global burden of disease(2).The prevalence rate of epilepsy in Iran has been reported to be between 1 and 3% (3).People with epilepsy face some problems such as isolation, dependence, mental disorders, unemployment, and poor quality of life, which also affect their self-care activities(4, 5). Psychosocial and behavioral adaptation to this disease leads to seizure control as well as the increased quality of life in these patients (6).

This adaptation in epilepsy usually includes adherence to medication, adequate sleep, proper nutrition, and reduced programs. Stress is for the improvement of general health status, which also constitutes patients' self-management behaviors(7). Anticonvulsant drugs can control epileptic seizures by up to 67%. However, drug treatment in patients with chronic diseases such as epilepsy, requires adherence to complex and long-term medication regimens that sometimes last until the end of a patient's life(2).

According to the definition of the World Health Organization (WHO), medication adherence is a degree of behavior corresponding to the recommendations agreed with a health care provider; for example, in relation to the medication regimen(8). In addition, adherence to treatment is a key determinant of treatment success, and adherence to it is a serious problem not only affecting the patient but also affects the health care system (9, 10). In general, the non-acceptance of anticonvulsant drugs in epilepsy patients has been estimated to be between 30 and 50%, which has been found to be associated with an increase in referrals to emergency centers and hospitalization and ultimately an increase in treatment costs (3, 7).

Studies in Iran have shown that medication adherence in patients with epilepsy is low, which varies between 30% and 60% (11, 12). Outside of Iran, medication adherence was low in almost half of epilepsy patients (48.7%)(3). In another study, approximately two-thirds (56.4%) of epileptic patients did not follow the prescribed medications(13). In this regard, lack of adherence and adherence to medication in patients will lead to the occurrence of some important consequences on people's health such as the reduced quality of life, worsening of the disease, the increased health care costs, and the increased mortality. On the other hand, sometimes with increasing the need for multiple drug treatment, the need for care and treatment costs will also increase (9, 10, 14). Therefore, it is necessary to adopt some appropriate programs, in order to improve medication adherence.

Self-management is one of the appropriate programs that leads patients to play a more effective role in treating their disease (15- 7- 16). One of the effective self-management programs to change the behavior and to ensure the health status of patients with chronic diseases is the self-management program based on Model 5A, which can also be used for patients with epilepsy. This evidence-based self-management 5A program is implemented at the following 5 stages: Assess, Advice, Agree, Assist, and Arrange(17–18). A review of the evidence suggests some positive results obtained from the use of Model 5A self-management program in some chronic patients, such as improvement of symptoms of chronic obstructive pulmonary disease(19), quality of life in the elderly with diabetes, and self-efficacy in the elderly on hemodialysis(20, 21). In patients with epilepsy, self-management with the aim of increasing knowledge, better self-care, healthy behaviors, and obtaining better outcomes plays an important role in epilepsy care(22- 23)

Internet technology has a significant effect on many aspects of education and has brought a completely new form of educational methods (24). Treatment with distance methods is important in the recovery of chronic diseases such as epilepsy and can reduce costs and need for continuous patient access to medical centers (25). On the other hand, the COVID – 19 pandemic crisis and its spread throughout the world, can be a good ground for using distance education to educate patients. Therefore, this study attempted to the effect of implementing a self-management program based on Model 5A on medication adherence in epileptic patients.

Methods

The present study was a single-blind randomized controlled trial with code registered in Iranian clinical trial site (IRCT20200407046979N1) that conducted on patients with epilepsy aged between 18 and 50 years old referred to Shiraz Namazi Hospital in southern Iran, in 2020-2021. The sample size was considered 46 individuals with first type error of 0.05 and 80% power and using study by Kazemi Majd et al. (2017)(26). The sample size was calculated with following sample size formula. Considering a maximum of 20% of patients' loss during the study, 5 patients were added to each group.

$$n = \left(z_{\frac{\alpha}{2}} + z_{\beta} \right)^2 \left(\frac{\sigma_1^2 + \sigma_2^2}{(\mu - \mu_0)^2} \right) = (1.96 + 1.64)^2 \left(\frac{1.33^2 + 1.43^2}{(6.69 - 5.57)^2} \right) \approx 23$$

$$\alpha = 0.05, z_{\frac{\alpha}{2}} = 1.96 \beta = 0.1, z_{\beta} = 1.64$$

Inclusion criteria in this study were the followings: definitive diagnosis of epilepsy, age range of 18 to 50 years old, having at least one seizure during the last trimester, having of at least 2 years of epilepsy, treated with at least one anticonvulsant drug, and willingness and ability to learn using WhatsApp application. The exclusion criteria included the exacerbation of the disease and incidence of disability or life-threatening conditions of patients, refractory epilepsy, having a specific physical illness (heart disease, etc.) and history of mental illness (depression, etc.) or suffering from an acute illness during the study period, a lack of willingness and consent to participate or to continue the study, and participating in a disease self-management training program during past 6 months. Sampling method used for the patients was simple random. The list of epilepsy patients referred to Namazi Hospital affiliated to Shiraz University of Medical Sciences was prepared and then the eligible patients were randomly selected using lottery. At the next stage, the patients were randomly divided into two intervention groups (28 patients) and a control group (28 patients) using random allocation software(27) (figure 1). Afterward, demographic information form and Morisky medication adherence scale were used to collect data. The demographic questionnaire included information on age, sex, level of education, marital status, number of seizures in the last 3 months, type of seizure, and family history of epilepsy.

Morisky Medication Adherence Scale (MMAS-8): This questionnaire was firstly developed by Morisky, Ang, Kruselwood, and Ward (2008) (28). This questionnaire has 2 items, including seven two-choice questions and one four-choice question. In terms of the tool's structure, this questionnaire has no subscales and is a single factor. The method of scoring the questionnaire is that this questionnaire has 7 questions in the form of a closed answer with a two-point Likert scale (yes and no), which are assigned a score between 0 and 8, respectively. Of note, questions 1 and 2 are scored reversely. The first seven questions are graded with zero and One and the eighth question is graded with 0.25, 0.5, 0.75, and 1, which has a score less than six according to this questionnaire. A low level of adherence indicates a score of six to less than eight, an average level of adherence and a score of eight indicates a high level of adherence of the patient. In Iran, the validation of the Morisky scale was examined negarandeh and et al.

(2013). Its reliability was also confirmed using retesting and internal consistency methods, so that reliability was reported as 0.8 using Cronbach's alpha coefficient (29).

Implementation

At first, the questionnaire was designed in a web environment and the link of the online Questionnaires before and after the intervention was sent to the patients through the WhatsApp application. Thereafter, the Model 5A self-management program was applied for the intervention group. The implementation of the program for patients during two stages of familiarization with the disease and implementation of medication adherence skills based on the 5A care model (which includes 5 stages) for the patients in the intervention group, training sessions by the researcher (the MA nursing student), 5 sessions per week (Fridays 12:00 o'clock – 14:00 afternoon), and during the week in the form of questions and answers on WhatsApp personal page, were used for the first 4 stages of the 5A self-management model as well as the last stage of this model, which was implemented by the patient himself for a two-month period under the researcher's weekly supervision and follow-up. The 5A self-management program for the intervention group was implemented as follows: The first stage of the Assess: This stage was performed in the first and second weeks.

In this phase, the person's condition in terms of disease history, use of drugs, questions on the reason for not taking drugs, sleep and nutrition status and activity, and finally filling out the electronic scale of medication adherence and acquisition Conscious consent were obtained. The second stage of Advice: This stage was performed in the third week, and the intervention was done to discuss about the risks and side effects of not taking drugs and consequently the increased seizures, the benefits of timely use of drugs, and its effect on reducing seizures. The third stage of the Agree: This stage was done in the fourth week and both the patient and the researcher agreed on changing the behavior and re-informing about the timely use of the prescribed drug and its benefits. Fourth stage of Assist: This stage was done in the fifth week, the emphasis of which was on the timely use of medicine, the benefits of taking medicine, and reviewing the content of the previous sessions. Fifth stage of Arrange: This stage was performed in the sixth to eighth weeks. Additionally, in the sixth week, the performance of medication adherence was monitored, and the drug registration form was completed at the end of each session by phone and SMS for each patient. In the seventh week, giving general information on epilepsy and re-emphasizing on the timely use of drugs and reviewing the content of previous sessions. Finally, in the eighth week, the study was completed and the questionnaires were filled after the intervention by the patients.

Subsequently, all the patients in both intervention and control groups completed the electronic questionnaire of demographic information, the electronic scale of Morisky medication adherence by passing two months from the intervention.

Data Analysis

In order to achieve the objectives of this research, the obtained data were analyzed using descriptive statistics and inferential statistics and data collected by SPSS software version 21. Wilcoxon test was then used for intra-group comparison and Mann-Whitney test was used for intergroup comparison. Significance level was considered at 0.05.

Results

In this study, 56 patients with epilepsy were enrolled in the intervention group (28 patients) and the control group (28 patients). All the patients participated in the study and no sample loss. The results of Chi-square test before the intervention showed that the control and intervention groups were similar in terms of demographic variables (gender, marriage, age) and underlying disease history, type of seizure, and the number of seizures during the last three months (Table 1).

Table 1

Demographic variables in the control and intervention groups

Characteristic		Control group N (%)	Intervention group N (%)	p-value
sex	Female	12 (42.9)	16 (57.1)	0.285
	Male	16 (57.1)	12 (42.9)	
Marital status	Unmarried	16 (57.1)	15(53.6)	0.057
	Married	12 (42.9)	13(46.4)	
Family history of epilepsy in first-degree members	Yes	2(7.1)	1(3.6)	>0.999
	No	26(92.9)	27(96.4)	
Contextual disease history	Yes	2(7.1)	2(7.1)	>0.999
	No	26(92.9)	26(92.9)	
Type of seizure attack	Due to unknown reasons	18(64.3)	23(82.1)	0.297
	general	3(10.7)	1(3.6)	
	Focal	7(25.0)	4(14.3)	
Number of seizures in the last three months	None	8(28.6)	10(35.7)	0.839
	Once	14(50.0)	13(64.4)	
	More than once	6(21.4)	5(17.9)	
Age(years)	Mean ± SD	7.7 ±30.3	9.1 ±28.6	0.416

Adherence

The adherence score average in the intervention group 4.15 ± 0.98 was at baseline, and this improved to 4.87 ± 1.02 ($p = 0.005$) after intervention. In the control group, the adherence score average was 4.34 ± 1.0 at baseline and 4.18 ± 1.37 at two months ($p=0.909$). While there was no statistically significant difference in adherence scores between intervention and control groups at baseline, the post-intervention difference was significant ($p = 0.025$). There was no statistically significant correlation between medication adherence scores and age, marital status, duration of illness, number of seizures in the last three months, or type of seizure attack.

Table 2 shows the distribution of patients based on adherence level. At baseline, 7.14% of patients in the intervention group had medium adherence scores (MMAS-8 score, 6–8), and none were classified as having high adherence scores (MMAS-8 score, 8). Two Months after intervention, 71.46% of patients in the intervention group had medium adherence scores (MMAS-8 score, 6 -8) and 7.14% had high adherence scores (MMAS-8, score 8).

Table 2

Comparison of adherence level between control (N = 28) and intervention (N = 28) groups

Adherence level (points)	Baseline, n (%)		p-value	Two months intervention, n (%)		p-value
	Control group	Intervention group		Control group	Intervention group	
High (8)	0 (0)	0 (0)	0.132**	0 (0)	2 (7.14)	0.154**
Medium (6 – 8)	1 (3.6)	2 (7.14)	0.213*	3 (10.7)	20 (71.46)	0.025*
Low (<6)	27 (96.4)	26 (92.86)	0.317*	25 (89.3)	6 (21.4)	0.012*

Notes: *By Chi-square test; **by Fisher’s exact test.

Discussion

The results of the present study show that in the intervention group, the average medication adherence of the patients by passing two months from the intervention increased compared to before the intervention; however, no significant change was observed in the mean medication adherence of the control group. As well, by passing two months from the intervention, a significant difference was found in terms of mean medication adherence between the intervention and control groups. This result showed that the

implementation of self-management program based on Model 5A has a significant effect on medication adherence in epileptic patients.

This study is important because the results of a systematic review in 2017 indicated that the prevalence rate of medication adherence in epilepsy patients varies between 26 and 79%(30). Additionally, in general, adherence to medication regimen is disappointingly low among chronic patients(13). Therefore, health care providers should strengthen their training programs to strengthen patients' belief in their medications, in order to improve medication adherence and overall treatment outcome (13). In this regard, the study conducted on the strongest trials showed that increasing medication adherence in epilepsy can improve seizure control and lead to better control(31). The proposed interventions can be educational (e.g., providing information to the patient or caregiver about the treatment characteristics, duration, dosage regimen, and how to use antiepileptic drugs) or behavioral (activity to remind the patient to take medication) (31). It can be said that self-management can be considered as one of these interventions. Accordingly, self-management includes knowledge, beliefs, self-regulatory behaviors, and the ability to manage chronic conditions and perform health behaviors by individuals (32). Notably, the effect of self-management training on medication adherence among epilepsy patients has been studied in previous studies and review studies, reporting that self-management behaviors are associated with medication intake in epileptic patients. It was demonstrated that these can increase their medication intake and consequently reduce seizures (11, 12, 30, 33–35). However, the 5A self-management model on medication adherence of epileptic patients has been investigated in no studies so far. In regard with other diseases, SadeghiGolafshani et al. (2019) showed the effectiveness of self-management program based on the A5 model on the quality of life of the elderly with diabetes(21). Moreover, in the elderly with hypertension, intervention based on the 5A self-management model and follow-up of patients before and 12 weeks after the intervention, improved their self-efficacy(36). In this study, the durations of follow-up and intervention were similar to the present study. Concerning Sickle cell anemia disease, Ahmadi et al. (2015) in their study showed that 5A model is effective on increasing the compatibility self-efficacy, enhancing quality of care, and decreasing treatment costs(37). Hence, it can be concluded that using this model will correct false health behaviors by investigating the behaviors, beliefs, motivation, training continuity, follow-up status, and patient's supports(21). However, the findings of the study by Moradi et al. (2019) showed that the effect of 5A self-management program on medication adherence in patients with hypertension was negligible. This may be due to the reason that most patients included in the intervention group had secondary and higher education and were aware of the timely use of their medications (36).

Additionally, the study by Javanvash et al. (2017) did not show the effectiveness of the self-management program based on Model 5A on the quality of life of the elderly with acute coronary syndrome. Correspondingly, the reason for the difference can be attributed to the cultural differences and participants' unwillingness to learn(17). In line with the stages of self-management program proposed based on Model 5A, Yadegari et al. (2013) in their study showed that four training sessions in the form of two stages of familiarization and sensitization with the content of epilepsy and drug self-management have been considered to be effective on drug acceptance among epileptic patients(12). In the study by

Bahiraee et al. (2019), face-to-face training was observed to be able to strengthen the self-management behaviors of epileptic patients (35). Therefore, the interventions, which were mostly done in the form of face-to-face training, had an effect on self-management behaviors, but in the present study, the educational intervention was virtual and remote. It is important to note that in a self-management program performed based on Model 5A, a patient's follow-up is important. In this regard, the systematic review conducted by Al-Aqeel et al. (2019) also showed that in people with epilepsy, the effectiveness of behavioral interventions like the use of intensive reminders, had more favorable effects on medication adherence(34). In the study by Ashktorab et al., with the improvement of self-management behaviors in epileptic patients, their drug acceptance also increased. Given this fact, patients with epilepsy will experience a reduction in seizures, so they will have a higher quality of life(11). In 2020, Mooney et al. in a systematic review study reported that there is limited evidence on self-management in children and adolescents with epilepsy, and that self-management strategies can be considered by concealing medication adherence as well as monitoring the activities and social support of their parents, family, and friends(38).

One of the strengths of this study was that the present study is one of the few internal and external studies, which for the first time with sufficient sample size, performed self-management training based on model 5A, in order to increase the medication adherence of epileptic patients. As well, following up the patients after educational intervention can be considered as another strength of the present study. Therefore, physicians, specialists, and nurses should help to strengthen it among patients by applying and implementing treatment adherence models, because paying inadequate attention to this phenomenon, especially in some groups, will cause many negative individual and social consequences. Another strength of this study was that distance and virtual education was performed in the COVID - 19 pandemic conditions and to avoid gatherings and face-to-face meetings where patients were able to receive the necessary training electronically. However, the study also had some limitations. One of the limitations of this study was the use of a questionnaire that cannot be attributed to real and practical behaviors in medication compliance in real life and the extent to which the results are consistent with real and practical behaviors. On the other hand, individual differences of research units that were effective in the rate of learning and proper implementation of the proposed programs and probably ultimately affected the outcome of the research.

Conclusion

According to the findings of the present study, it can be acknowledged that the self-management program based on Model 5A if presented in a targeted manner and with appropriate content, could bring an effect on patients' medication adherence. It seems that the above-mentioned model is one of the important and new issues less addressed in the country and can be considered as a suitable method in epileptic patients. In addition, by educating and promoting the use of its strategies, it can improve the medication adherence of epileptic patients.

Abbreviations

WHO World Health Organization; MMAS-8 Morisky Medication Adherence Scale.

Declarations

Ethics approval and consent to participate

This research was approved by the ethics committee of Jahrom University of Medical Sciences (ethics code IR.JUMS.REC.1398.085). All the included patients signed a written informed consent form. The objectives and method of the study were also explained to them and they were then given sufficient assurance about the confidentiality of the information. Additionally, after the completion of the research and in order to meet the ethics in the research, the contents of the self-management training sessions based on Model 5A for the control group were implemented during eight sessions through WhatsApp.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

There was no conflict of interest in this study.

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Authors' contributions

AD and S.F.M-M conceptualized the study. AD carried out the first analysis. AD and S.F.M-M produced the first draft of the manuscript. AD, S.F.M-M and R.E.A reviewed the draft and contributed to the last version.

All authors have read and agreed to the published version of the manuscript.

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References

1. Stafstrom CE, Carmant L. Seizures And Epilepsy: An Overview For Neuroscientists. Cold Spring Harbor Perspectives In Medicine. 2015;5(6).
2. WHO. Epilepsy: A Public Health Imperative. World Health Organization; 2019.
3. Zafar A, Shahid R, Nazish S, Aljaafari D, Alkhamis FA, Alsalman S, Et Al. Nonadherence To Antiepileptic Medications: Still A Major Issue To Be Addressed In The Management Of Epilepsy. Journal Of Neurosciences In Rural Practice. 2019;10(1):106–12.
4. Schuele SU, Lüders HO. Intractable Epilepsy: Management And Therapeutic Alternatives. The Lancet Neurology. 2008;7(6):514–24.
5. Beyenburg S, Mitchell AJ, Schmidt D, Elger CE, Reuber M. Anxiety In Patients With Epilepsy: Systematic Review And Suggestions For Clinical Management. Epilepsy & Behavior: E&B. 2005;7(2):161–71.
6. Kobau R, Diiorio C. Epilepsy Self-Management: A Comparison Of Self-Efficacy And Outcome Expectancy For Medication Adherence And Lifestyle Behaviors Among People With Epilepsy. Epilepsy & Behavior: E&B. 2003;4(3):217–25.
7. Yadollahi S, Ashktorab T, Zayeri F. Medication Adherence And Related Factors In Patients With Epilepsy. Hayat. 2015;21(2):67–80.
8. Nie B, Chapman SCE, Chen Z, Wang X, Wei L. Utilization Of The Beliefs About Medicine Questionnaire And Prediction Of Medication Adherence In China: A Systematic Review And Meta-Analysis. J Psychosom Res. 2019;122:54–68.
9. Zullig LL, Bosworth H. Engaging Patients To Optimize Medication Adherence. NEJM Catalyst. 2017;3(3).
10. Jimmy B, Jose J. Patient Medication Adherence: Measures In Daily Practice. Oman Medical Journal. 2011;26(3):155–9.
11. Ashktorab T, Yadollahi S, Safavi Bayat Z, Zayeri F. The Correlation Between Self-Management Behaviors And Drug Adherence Among People With Epilepsy In Iran Epilepsy Association. Avicenna J

- Nurs Midwifery Care. 2013;21(2):5–15.
12. Yadegary MA, Dehghan-Naeyeri N, Ali-Asgharpour M, Naseh L. The Effect Of Educational Program On Drugs Self-Management In Patient With Epilepsy- A Randomized Clinical Trial. *Journal Of Clinical Nursing And Midwifery*. 2013;2(3):86–94.
 13. Niriayo YL, Mamo A, Gidey K, Demoz GT. Medication Belief And Adherence Among Patients With Epilepsy. *Behav Neurol [Internet]*. 2019 2019; 2019:[2806341 P].
 14. Sirven JI. Epilepsy: A Spectrum Disorder. *Cold Spring Harbor Perspectives In Medicine*. 2015;5(9):A022848.
 15. Grady PA, Gough LL. Self-Management: A Comprehensive Approach To Management Of Chronic Conditions. *American Journal Of Public Health*. 2014;104(8):E25-31.
 16. Austin JK CD, Hermann BP. Living Well II: A Review Of Progress Since 2003. *Epilepsy Behavior*. 2006;9(3):386–93.
 17. Javanvash Z, Mojdekanloo M, Rastaghi S, Rad M. The Effect Model-Based Self-Management Program 5A On Quality Of Life Of Elderly Patients With Acute Coronary Syndrome Bojnourd Year 2017. *Journal Of Sabzevar University Of Medical Sciences*. 2018;25(1):75–82.
 18. CMS. Center For Medicare & Medicaid Innovation, Comprehensive Primary Care Plus. Innovation Models. Accessed At <https://innovation.cms.gov/initiatives/comprehensive-primary-care-plus> On 2018.
 19. Heidari M, Fayazi S, Borsi H, Moradbeigi K, Akbari Nassaji N. Effect Of A Self-Management Program Based On 5A Model On Dyspnea And Fatigue Severity Among Patients With Chronic Obstructive Pulmonary Disease: A Randomized Clinical Trial. *Hayat*. 2015;20(4):89–99.
 20. Mahdifarani M, Rejeh N, Heravi-Karimooi M, Tadrissi SD, Marghob B. The Effect Of Self- Management Program On The Self-Efficacy In Elderly Patients Undergoing Hemodialysis. *IJNR*. 2020;15(2):35–44.
 21. Sadeghigolafshanl M, Rejeh N, Heravi-Karimooi M, Tadrissi SD, Yosefi Abdolmaleki E. The Effect Of Model-Based Self-Management Program 5a On Quality Of Life Of Elderly Patients With Diabetes. *Iranian Journal Of Nursing Research*. 2019;14(5):37–44.
 22. England MJ, Liverman CT, Schultz AM, Strawbridge LM. Epilepsy Across The Spectrum: Promoting Health And Understanding.: A Summary Of The Institute Of Medicine Report. *Epilepsy & Behavior*. 2012;25(2):266–76.
 23. Helmers SL, Kobau R, Sajatovic M, Jobst BC, Privitera M, Devinsky O, Et Al. Self-Management In Epilepsy: Why And How You Should Incorporate Self-Management In Your Practice. *Epilepsy & Behavior: E&B*. 2017;68:220-4.
 24. Wirihana L, Craft J, Christensen M, Bakon S. A Nursing Education Perspective On The Integration Of Video Learning: A Review Of The Literature. *Singap Nurs J*. 2017;44(1).
 25. Bostanchi F, Parhizkar A, Salehi K, Nasiri Kalmarzi R, Roshani D. The Effect Of Virtual Education On The Quality Of Life Of Asthmatic Patients, Tohid Hospital In, Sanandaj City, 2018. 2 *Journal Of Nursing Education*. 2020;9(2):10–8.

26. Kazemi Majd R, Hosseini Ma, Safi Mh, Norouzi K, Hossein Zadeh S. The Effect Of Self-Care Education Based On Short Message Service On Self-Efficacy And Adherence To The Medication Regimen In Adolescents With Epilepsy Referred To Iran Epilepsy Association Of In 2016. *Journal Of Nursing Education*. 2017;6(4):48–55.
27. Saghaei M. Random Allocation Software For Parallel Group Randomized Trials. *BMC Medical Research Methodology*. 2004;4(1):26.
28. Morisky DE, Ang A, Krousel-Wood M, Ward HJ. Predictive Validity Of A Medication Adherence Measure In An Outpatient Setting. *Journal Of Clinical Hypertension (Greenwich, Conn)*. 2008;10(5):348–54.
29. Negarandeh R, Mahmoodi H, Noktehdan H, Heshmat R, Shakibazadeh E. Teach Back And Pictorial Image Educational Strategies On Knowledge About Diabetes And Medication/Dietary Adherence Among Low Health Literate Patients With Type 2 Diabetes. *Primary Care Diabetes*. 2013;7(2):111–8.
30. Malek N, Heath CA, Greene J. A Review Of Medication Adherence In People With Epilepsy. *Acta Neurologica Scandinavica*. 2017;135(5):507–15.
31. Da Mota Gomes M, Navarro T, Keepanasseril A, Jeffery R, Haynes RB. Increasing Adherence To Treatment In Epilepsy: What Do The Strongest Trials Show? *Acta Neurologica Scandinavica*. 2017;135(3):266–72.
32. Fraser RT, Johnson EK, Miller JW, Temkin N, Barber J, Caylor L, Et Al. Managing Epilepsy Well: Self-Management Needs Assessment. *Epilepsy & Behavior: E&B*. 2011;20(2):291-8.
33. Abusaad FES, El-Wehedy A. Impact Of Educational Sessions For Epileptic Children Mothers On Their Knowledge, Adherence To Antiepileptic Drugs And Seizures Severity Among Their Children. *IOSR-JNHS*. 2016;5(5):81–9.
34. Al-Aqeel S, Gershuni O, Al-Sabhan J, Hiligsmann M. Strategies For Improving Adherence To Antiepileptic Drug Treatment In People With Epilepsy. *Cochrane Database Syst Rev*. 2017;2(2):CD008312-CD.
35. Bahiraei N, Dehghani M, Khachian A. The Effect Of Educational Program On Self-Management Of Patients With Epilepsy: A Randomized Clinical Trial Study. *Avicenna J Nurs Midwifery Care*. 2019;27(5):361–9.
36. Moradi M, Nasiri M, Jahanshahi M, Hajjahmadi M. The Effects Of A Self-Management Program Based On The 5 A Model On Self-Efficacy Among Older Men With Hypertension. *Nursing And Midwifery Studies*. 2019;8(1):21–7.
37. Ahmadi M, Jahani S, Tabesh H, Poormansouri S, Shariati A. The Effectiveness Of Self Management Program On Quality Of Life In Patients With Sickle Cell Disease %J Iranian Journal Of Pediatric Hematology And Oncology. 2015;5(1):18–26.
38. Mooney O, McNicholl A, Lambert V, Gallagher P. Self-Management In Children And Young People With Epilepsy: A Systematic Review And Qualitative Meta-Synthesis. *Journal Of Health Psychology*. 2020;26(1):126–39.

Figures

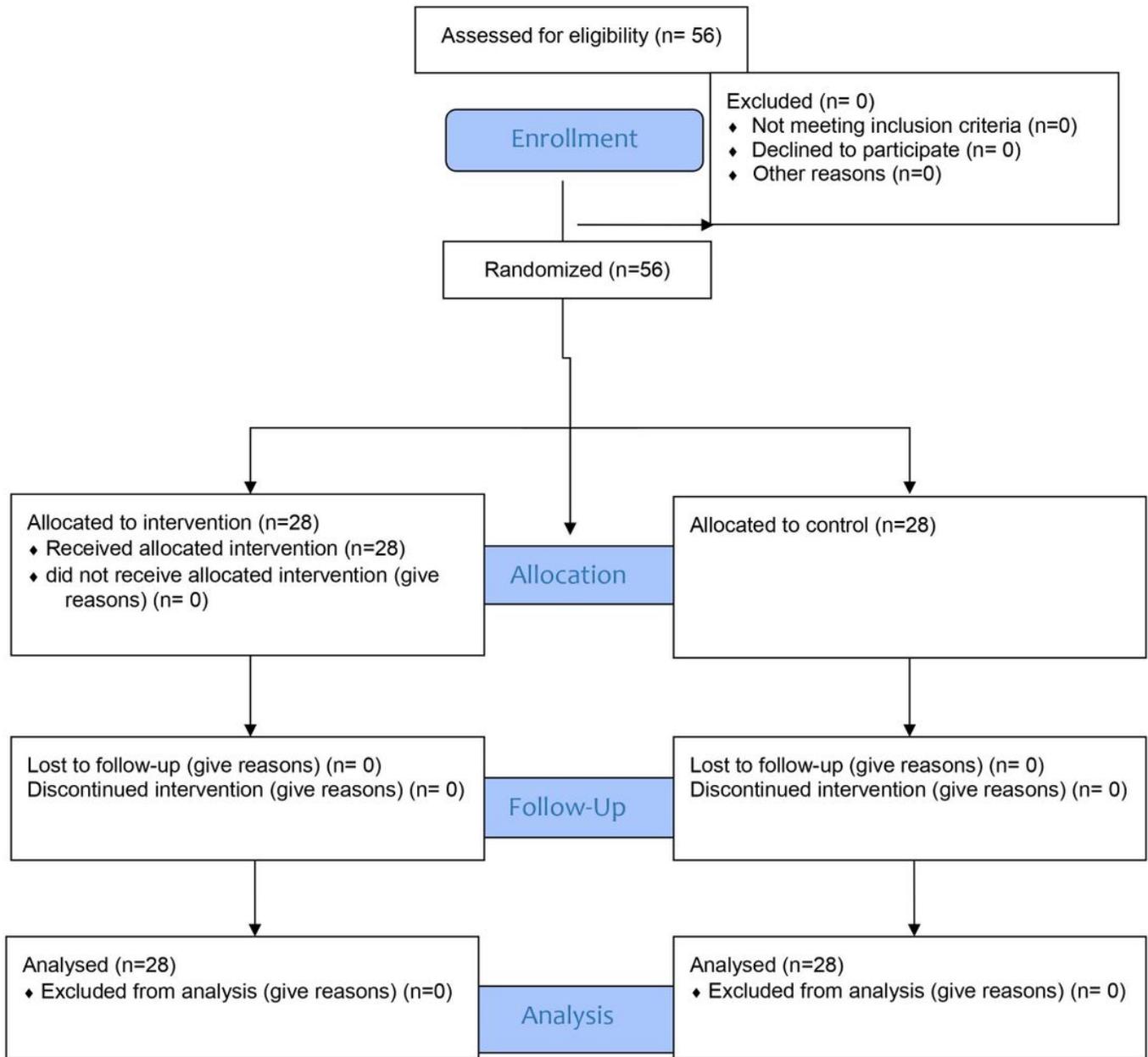


Figure 1

CONSORT flow diagram of the study