

Impact of health education on drug adherence and self-care in people with epilepsy with low education



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ABSTRACT

Purpose: This study was conducted to observe the effect of a structured educational program on drug adherence and self-care management in people with epilepsy in a developing country.

Methods: A total of 180 consecutive people with epilepsy were enrolled from the epilepsy clinic of a tertiary care hospital in North India. Out of these, 90 were randomized to the epilepsy health education group and received the educational program and 90 were in the control group and received the standard of care but did not receive any structured educational program. The modified Morisky Medication Adherence Scale (MMAS) and Epilepsy Self-Efficacy Scale (ESES) were administered to assess drug adherence and self-care, respectively, on the day of enrollment. The patients enrolled in the epilepsy health education group received 4 sessions of the structured educational program. The MMAS and ESES questionnaires were again administered to both groups after 6 months.

Statistical methods: Continuous and categorical variables were compared between control and epilepsy health education groups using a chi-square test, with p value less than 0.05 considered significant. A comparison between pretest and posttest MMAS scores and ESES scores was done using a paired t-test.

Results: In the epilepsy health education group, the pretest mean MMAS score was 6.58 whereas the posttest mean MMAS score was 7.53; the difference was significant ($p = 0.001$). The mean MMAS scores for the control group's pretest and posttest were 6.46 and 6.58, respectively, which were not significantly different ($p = 0.224$). On comparing the ESES scores at the beginning of the study and after 6 months, there was no significant change in both groups.

Conclusions: The present study proves the efficacy of a structured educational program in improving drug adherence in a cohort of people with epilepsy with low educational background.

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1. Introduction

Medication adherence in epilepsy is the backbone to effectiveness of pharmacological therapy. It helps in preventing seizure occurrence and, thus, helps in decreasing the cumulative impact of seizures on everyday life. Factors that affect adherence to pharmacological treatments are complex and multifactorial. Previous studies have found various factors like the level of social support, familiarity with drug regimen, doctor–patient relationship, patient beliefs about the efficacy of treatment, knowledge about their seizures, and treatment having significant effects on medication adherence [1]. Das et al. found a significant number of patients in India that discontinued epilepsy treatment within 1 year because of poor knowledge regarding the outcomes after discontinuation [2].

Pharmacological intervention in people with epilepsy (PWE) is only one aspect of their management. PWE also require support in their social life as having epilepsy has a widespread effect and impact on the

social and psychological domains of life. Self-management includes the health behaviors adapted by PWE to promote seizure control and enhance the quality of life. These include medication adherence, adequate sleep, nutrition, and measures to reduce stress.

Health education is a powerful tool which can have a positive impact on both drug adherence and self-management skills of PWE. Previous studies have proven the role of structured health education programs in improving seizure control and enhancing satisfaction with therapy in PWE with a moderate to high educational background. We conducted a randomized controlled study to assess the effect of a structured educational program on drug adherence and self-care measures in a cohort of PWE with low educational background attending the epilepsy clinic of a tertiary care hospital in India.

2. Materials and methods

A randomized controlled study with a pretest and posttest design was conducted on a cohort of PWE attending the epilepsy clinic of a tertiary care hospital to assess the efficacy of an educational program. The study was performed in the outpatient clinic of the Department of

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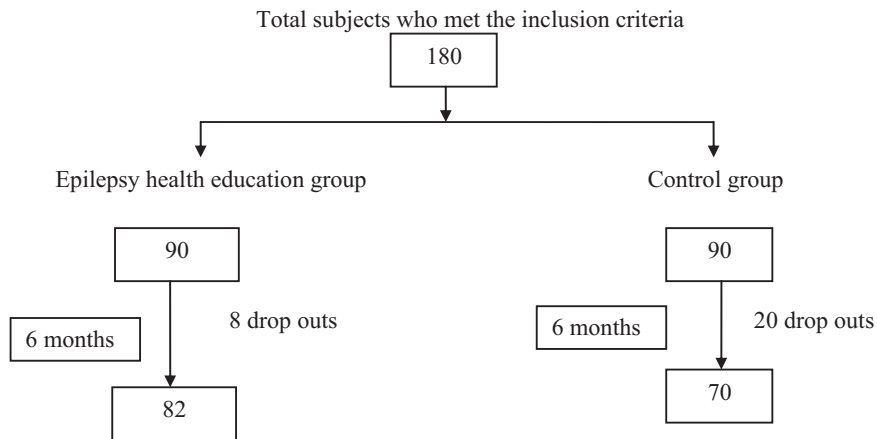


Fig. 1. Depiction of the study design with the number of patients randomized to each group and dropouts in each group.

Neurology of a referral teaching institute in North India from June to December 2012. The inclusion criteria were the following: diagnosis of epilepsy at least 1 month prior to the date of the study, to come for follow-up visits in the neurology out-patient department, ≥ 15 years of age, ability to understand Hindi/English, and willingness to participate in the study. The exclusion criteria were the following: < 15 years of age, subnormal cognitive functions, inability to understand Hindi/English, and nonwillingness to come for the educational program and follow-up.

A purposive sampling technique was used in the study. Patients who had met the eligibility criteria were randomly assigned using concealed random allocation to one of the two groups. Randomization was done using a computer-generated table of random numbers (seed nos.: 26,593, www.randomization.com). A total of 180 PWE were enrolled, out of which 90 were randomized to the group which would receive the educational program (epilepsy health education group) and 90 who would not receive any structured educational program (control group) (Fig. 1). Details of the patients' demographic profile, seizure type, epilepsy syndrome, treatments received, antiepileptic drugs, and seizure frequency were recorded pro forma.

3. Details about the education program

An epilepsy health education program was developed by a group which included three epilepsy nurses, two epileptologists (MT, MVP), and two social workers. The program was intended to target a patient population consisting of people who were mostly illiterate or with very low educational background, so visual learning tools were developed in the form of pamphlets with pictorial representation covering different aspects of epilepsy. The program included not only a structured talk but also pamphlets mostly with animations to explain the different aspects of the disease. The domains covered by the educational program were basic knowledge regarding epilepsy, myths and truths regarding epilepsy, diagnosis, treatment modalities (emphasis on compliance), living with epilepsy, and employment issues, which were written in Hindi and supplemented with illustrations and animations. One-on-one teaching in a structured format, encompassing all the above aspects of epilepsy, was administered by an epilepsy nurse in 4 sessions lasting at least 30 min each to each patient randomized to the epilepsy health education group. The epilepsy nurse's certificate of competency to provide health education and proficiency to use tools was obtained from a tutor from the College of Nursing (MA) and an epileptologist (MT).

A pilot study with the proposed health education module was done on 20 PWE to determine the acceptability of the program and to add supplemental information after recording queries that the PWE had after the administration of the module.

The primary outcome of drug adherence and self-care was measured using the modified Morisky Medication Adherence Scale (MMAS) and the Epilepsy Self-Efficacy Scale (ESES), respectively. The MMAS is a standardized tool containing eight items to assess medication compliance. The maximum score is 8, the minimum is 0, and the reliability is 0.83 [3]. The ESES is a 33-item scale that measures the different aspects of efficacy in the self-management of epilepsy [4]. Items are rated on an 11-point Likert rating scale ranging from 0 to 10. Items were totaled, and higher scores indicated higher levels of confidence in the ability to manage epilepsy. The scale has been shown to have adequate test-retest reliability and internal consistency reliability, with coefficients ranging from 0.89 to 0.94 [5–7]. For this study, the total score was used as a continuous variable, with higher scores indicating higher self-efficacy. Both scales were administered by the epilepsy nurse explaining each item in the local language. The secondary outcome was the change in seizure frequency in both groups.

Subjects were randomly assigned to either of the groups (control and epilepsy health education groups). A pretest on day 1 was done to assess the medication compliance and self-care of the persons with epilepsy using the MMAS and ESES, respectively. The baseline seizure frequency was also recorded. Health education was given along with distribution of pamphlets (to the epilepsy health education group). After 1 month, the PWE were followed up on phone by one of the researchers to reinforce the health education. All PWE in the epilepsy health education group received 4 sessions lasting at least 30 min each of one-to-one teaching by the epilepsy nurse. All were called for follow-up after 6 months. A posttest was done to assess the medication compliance and self-care of the PWE after 6 months using the MMAS and ESES questionnaires. The seizure frequency was also recorded at the end of 6 months and classified in both groups as increased frequency, decreased frequency, or no change in frequency.

3.1. Statistical analysis

We hypothesized that the intervention in the form of a structured educational program would increase drug adherence and self-care management in PWE. We tested this hypothesis using a randomized controlled study with two arms in a pretest–posttest design. Baseline population characteristics measured in numerical scales were reported using the mean \pm standard deviation (SD) according to their distribution. Categorical variables were reported in terms of their percent frequency. Continuous variables and categorical variables were compared between control and epilepsy health education groups using a chi-square test, with p value less than 0.05 considered significant. A comparison between pretest and posttest MMAS scores and ESES scores was done using a paired t-test, with p value less than 0.05 considered

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