Epilepsy & Behavior 52 (2015) 133–142

Contents lists available at ScienceDirect

Epilepsy & Behavior

journal homepage: www.elsevier.com/locate/yebeh

A randomized controlled multimodal behavioral intervention trial for improving antiepileptic drug adherence

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ARTICLE INFO

Article history:
Received 6 July 2015
Revised 26 August 2015
Accepted 30 August 2015
Available online 28 September 2015

Keywords:
Epilepsy medical adherence
Motivational interviewing
Planning
Self-monitoring

ABSTRACT

Purpose: Medication nonadherence is one of the most important reasons for treatment failure in patients with epilepsy. The present study investigated the effectiveness of a multicomponent intervention to improve adherence to antiepileptic drug (AED) medication in patients with epilepsy.
Methods: In a prospective, randomized multicenter trial, three sessions of face-to-face motivational interviewing (MI) in combination with complementary behavior change techniques were compared with standard care. Motivational interviewing prompted change talk and self-motivated statements from the patients, planning their own medication intake regimen and also identifying and overcoming barriers that may prevent adherence. Participants were provided with calendars to self-monitor their medication taking behavior. A family member and the health-care team were invited to attend the last session of MI in order to improve the collaboration and communication between patients, their caregiver or family member, and their health-care provider. At baseline and 6-month follow-up, psychosocial variables and medical adherence were assessed.
Results: In total, 275 participants were included in the study. Compared with the active control group, patients in the intervention group reported significantly higher medication adherence, as well as stronger intention and perceptions of control for taking medication regularly. The intervention group also reported higher levels of action planning, coping planning, self-monitoring, and lower medication concerns.
Conclusions: This study shows that MI can be effective in clinical practice to improve medication adherence in patients with epilepsy. It also provides evidence that combining volitional interventions, including action planning, coping planning, and self-monitoring with motivational interviewing can promote the effectiveness of the medical treatments for epilepsy by improving adherence.

1. Introduction

Epilepsy is one of the most common neurological disorders, with 4 to 10 in every 1000 people affected worldwide. The overall incidence of epilepsy is around 50 per 100,000 people per year (range: 40 to 70 per 100,000 people per year) in industrialized countries and 100 to 190 per 100,000 people per year in developing countries [1]. In Iran, the prevalence of epilepsy has been estimated to be 18 per 1000 people in the population [2].

Approximately 60% of patients with epilepsy could have full control over their seizures with antiepileptic drugs (AEDs) if they took their medication as prescribed [3]. However, nonadherence is one of the most important reasons for treatment failure in these patients [4], as 30% to 50% of adults with epilepsy adhere poorly to their AED treatment schedules [5–9]. However, continuous objective measures suggest even higher rates of nonadherence. For example, two studies using the Medical Events Monitoring System (MEMS)—a pill bottle with an electronic cap that records each time the bottle is opened—found that 76% of doses were taken overall [10], and 48% of patients took one-third or fewer of the prescribed AED doses [11].

Poor adherence affects important treatment outcomes such as numbers of hospital admissions, inpatient treatment days, emergency room

Abbreviations: MI, motivational interviewing; AEDs, antiepileptic drugs; MARS, Medication Adherence Report Scale; BMQ, Beliefs about Medications Questionnaire; PBC, Perceived behavioral control.

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http://dx.doi.org/10.1016/j.yebeh.2015.08.036
1525-5050/

visits, and health-care costs [12,13]. Nonadherent patients report more uncontrolled seizures leading to greater epilepsy-related morbidity and mortality compared with adherent patients. In addition, nonadherence reduces treatment benefits [14] and can bias assessment of the efficacy of these treatments [15,16].

Medication treatment for epilepsy and other chronic diseases requires patients to merge regimens into daily routines [17]. Although educating patients with epilepsy about medication regimens is critical to treatment [6], additional factors such as sociodemographics or beliefs about epilepsy and medication use are likely to influence treatment adherence [18].

Nonadherence can be either intentional, due to a patient's own choice, or nonintentional, due to forgetting or misunderstanding the prescription and recommendations [19]. According to a Cochrane review [19], behavior change interventions designed to increase medication adherence include simplifying the dosage regimen, combining detailed instructions with counseling, increasing follow-up, sending out reminders, and the use of self-monitoring, rewards, motivational group sessions, and psychological therapy. The review also suggested that education and counseling were effective strategies and behavioral interventions including reminders and implementation intentions had evidence of efficacy in patients with epilepsy.

Most behavior change interventions contain educational and behavioral techniques to improve medical adherence and are usually based on the assumption that participants are motivated to change [20]. However, interventions that take a prescriptive, educational approach may also increase resistance among participants who are not intending to change [21,22]. Motivation to adhere to epilepsy medications has received little research attention.

Motivational interviewing (MI) is a patient-centered clinical strategy that focuses on self-efficacy and personal attitudes towards behavior change. It aims to help individuals solve their ambivalence about change and boost their intrinsic motivation [23,24]. It assesses a client's 'readiness' to change and attempts to enhance motivation for behavior change [25]. It encourages the patient to compare the pros and cons of change and helps in the decision-making prior to education and self-regulatory interventions by enhancing intrinsic motivation [20].

In one study on improving medication adherence in patients with epilepsy, Dilorio et al. [26] provided 5 MI sessions, of which the first session was face to face and the following four sessions were administered

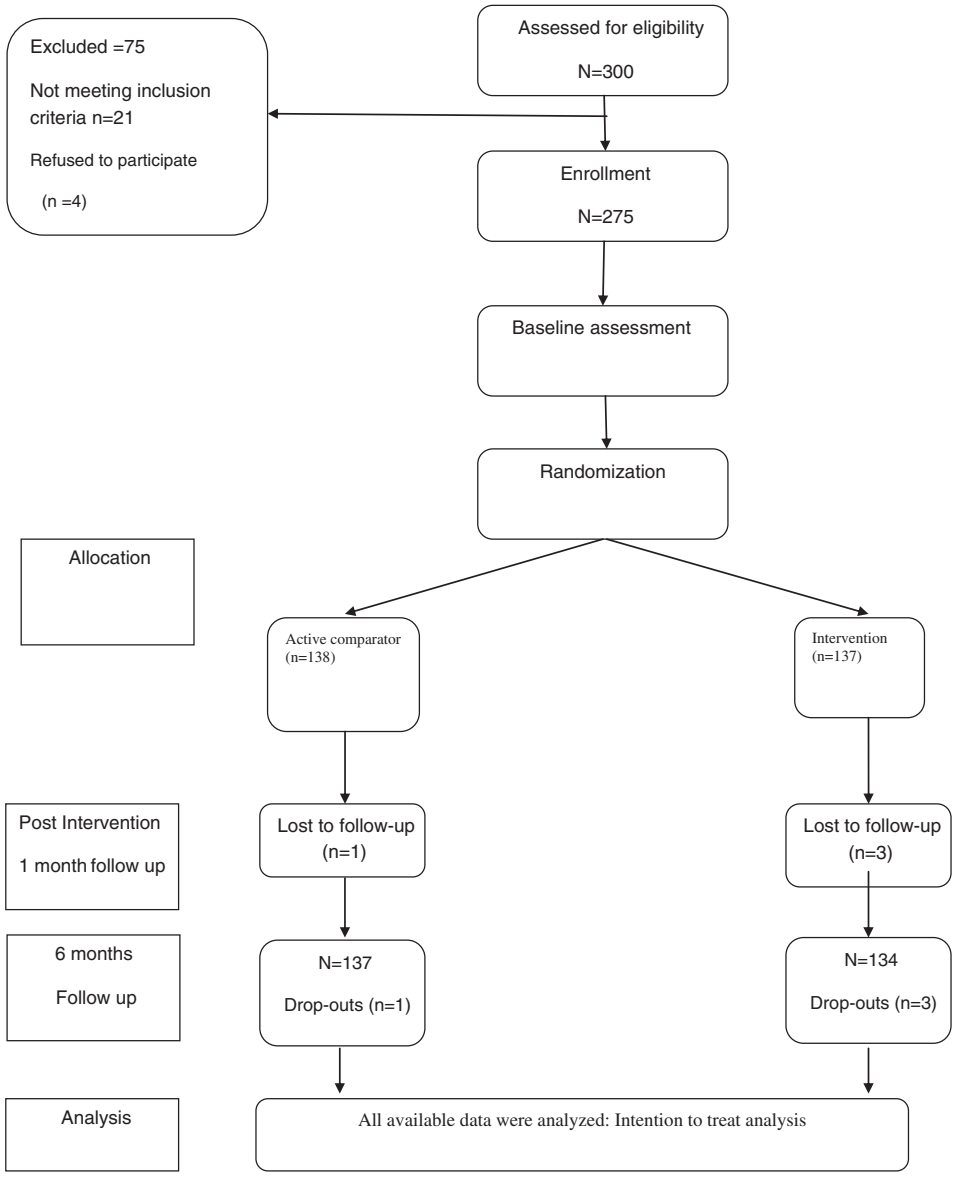

Fig. 1. CONSORT trial flow chart.