Results of a Randomized Controlled Trial: Evaluating WebEase, an Online Epilepsy Self-Management Program

Colleen Dilorio, R.N., Ph.D., F.A.A.N., Elizabeth Reisinger Walker, M.P.H., M.A.T., Yvan Bamps, Ph.D.

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Abstract

WebEase (Epilepsy Awareness, Support and Education) is an on-line epilepsy self-management program designed to avoid people with taking medication, managing stress, and improving quality of sleep. The aims of this study were to determine if older adolescents and adults who participate in the WebEase program show improvements in medication adherence, perceived stress, sleep quality, self-management, self-efficacy, knowledge and quality of life. Participants who volunteered to participate were assigned to a treatment (T) or wait list control (WLC) group (n=148). At follow-up participants in the T group reported higher level of medication adherence than those in the WLC group. Those who completed at least one WebEase module achieved higher levels of self-efﬁcacy than those who did not. An analysis of the daily ratings for medication adherence, stress and sleep recorded in the MyLog component of WebEase showed that those who completed at least one WebEase module corresponding to the outcome variable reported higher rates of medication adherence, lower stress levels and better sleep than those who did not.

WebEase

WebEase, a project funded by the Centers for Disease Control and Prevention, is a web-based, theory driven, self-management program for people with epilepsy (PWE). WebEase consists of three modules that focus on medication adherence, stress reduction, and sleep quality. WebEase also includes a feature for recording medication taking, seizures, stress, and sleep information (MyLog), a discussion board (MyBoard), fact sheets, and daily polls/quizzes (Figures 1 and 2). The program is designed so that participants spend two weeks in each module. In each module, the participants: 1) assess their readiness to change behaviors related to medication, stress, and sleep; 2) learn strategies for change; and 3) create a plan for change and assess their progress toward their goal. The modules are interactive, so that individuals read information, respond to questions about behavior change, and receive feedback based on their responses.

Methods

Participants for the study were recruited through epilepsy-based websites and forums, on-line clinical research matching services and referrals from healthcare professionals. After providing informed consent, participants completed a baseline assessment and were randomly assigned to the treatment (T) or wait list control group (WLC). Participants assigned to the T group began WebEase immediately after completing the baseline assessment, while those in the WLC group waited 12 weeks after baseline. The three surveys measured medication adherence, stress, and sleep quality using MyLog during the course of the 6-week WebEase program. Those in the T group who had completed at least one module into the T group and those in the T and WLC groups who did not complete any module into the NC group. For this set of analyses, we used the baseline assessment as the pre-intervention test and the 6-week assessment as the post-intervention test for those in the T group; we used the 6-week assessment as the pre-intervention test and the 12-week assessment as the post-intervention test for those in the WLC group.

Data Analysis

Data analysis was conducted in three stages.

1. Intent to Treat

Across three time points, there was a signiﬁcant group by time interaction for medication adherence indicating that those in the T group reported higher levels of medication adherence than those in the WLC group over the 12-week study period (Figure 3). There was no signiﬁcant group by time interaction for the other study outcomes.

2. C vs. NC: Survey Data

There was a signiﬁcant group by time interaction for self-efficacy, indicating that the T group reported a higher level of self-efficacy at post-intervention compared to the NC group (Figure 4). A trend toward signiﬁcance was observed for the group by time interactions for medication adherence, perceived stress, self-management, and knowledge. For medication adherence, self-management, and knowledge those in the T vs. NC group reported higher levels in the variable compared to those in the NC group. For perceived stress, C group members reported lower levels of post-test compared to NC group members.

3.C vs. NC: My Log Data

A signiﬁcant group by time interaction was found with those in the C group reporting a higher percentage of medication adherence at intervention compared to those in the NC group. Likewise for the analysis of stress and sleep ratings, there were signiﬁcant group by time interactions with those in the C group reporting lower stress and higher sleep quality ratings at post-intervention compared to those in the NC group (Figures 5).

Implications

Major implications of the study can be summarized as follow:

- Participation in an on-line self-management program can improve outcomes for medication adherence, stress and sleep quality for PWE.
- On-line self-management programs can boost self-efficacy in PWE.
- As an eFutility delivery tool, on-line self-management programs, such as WebEase, can be made widely available to PWE at a low cost and can overcome some of the transportation barriers experienced by PWE.
- The information recorded in such tools as WebEase and the MyLog function can assist the healthcare team in assessing, monitoring, and managing epilepsy in their patients.

Sample

All participants met the following inclusion criteria:

- Diagnosis of epilepsy
- 18+ years of age or older
- English speaking
- Taking anti-epileptic medication (AED) for more than 3 months
- Access to a computer with an internet connection
- Willingness to participate in the study
- No previous experience with WebEase.

Figure 1. MyLog screenshots

Figure 2. WebEase learning modules screenshots

Figure 3. Group by Time Interaction for Medication Adherence Across Three Time Points

Figure 4. Group by Time for Self-Efﬁcacy from Pre- to Post-Intervention

Figure 5. Group by Time Interaction for Medication Adherence Using MyLog Data

Figure 6. Group by Time Interaction for Stress Level Using MyLog Data

Figure 7. Group by Time Interaction for Sleep Quality Using MyLog Data

Figure 8. Sample Demographics

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