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Brief Report

The process associated with motivation of a home-based Wii Fit exercise program among sedentary African American women with systemic lupus erythematosus

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Abstract

Objective: To explore the process associated with the motivation for playing Wii Fit among patients with systemic lupus erythematosus (SLE).

Methods: Individual in-depth semi-structured telephone interviews were conducted with 14 sedentary African American women with SLE to explore their experiences and reflect on their motivation for playing Wii Fit after completing a 10-week home-based Wii Fit exercise program. Interviews were audio-recorded, transcribed verbatim, and analyzed using the constant comparative method to identify categories related to participants' motivation. Three authors independently sorted, organized and coded transcript text into categories, then combined the categories into themes and subthemes.

Results: In addition to the two themes (Ethical principal of keeping a commitment, and Don't want to let anyone down) generic to home-based exercise trials, we identified five themes (Enjoyment, Health Benefits, Sense of Accomplishment, Convenience, and Personalized) that revealed why the participants were motivated to play the Wii Fit. Enjoyment had three subthemes: Interactive, Challenging, and Competitive with an embedded social element. However, several participants commented they were not able to do many activities, master certain games, or figure out how to play some; as a result, they were bored with the limited selection of activities that they could do.

Conclusions: The motivational elements of the Wii Fit may contribute to improved exercise motivation and adherence in select sedentary African American women with SLE. Results provide a better understanding on the important elements to incorporate in the development of sustainable home-based exercise programs with interactive health video games for this population.

Keywords: Exergames; Exercise adherence; Qualitative study

Physical exercise has been shown to have multiple benefits including significant reduction in fatigue levels, weight loss, and improvement in sleep quality, physical fitness, and quality of life for people with systemic lupus erythematosus (SLE).[1,2] However, only about one-third of those with SLE met physical activity goals of exercising ⩾150 min/week or having energy expenditure of ⩾1400 kcal/week.[3] In addition to the usual response of lack of time, people with SLE cited inclement weather, lack of access to desirable exercise facilities, lack of motivation, and SLE disease-related factors (such as fatigue, joint pain and stiffness, and flare up) as the major barriers to exercise.[3]

The incorporation of exergames such as Wii Fit into home-based exercise programs for people with SLE is believed to serve as a strategy that may help reduce or eliminate the exercise barriers cited in the literature,[3] and sustain motivation and adherence to exercise.[4]

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Yuen and associates conducted a pilot study to evaluate the effectiveness of a home-based exercise program using the Wii Fit in patients with SLE.[5] Fifteen sedentary African American women with SLE who experienced moderate to severe fatigue participated in the program three days a week for 30 min each over a 10-week period. After two weeks of weekly supervised home exercise, the research coordinator conducted weekly telephone monitoring sessions alternating with an in-home visit every three weeks for the rest of the study. Outcome measures were collected at baseline, and post Wii Fit program. The key findings were participants' fatigue severity, body weight and waist circumference significantly reduced at the completion of the program.

Since few studies investigated the subjective experiences of patients with chronic conditions when playing health video games as a form of home exercise (i.e., exergames), the purpose of this study was to explore the experience of sedentary African American women with SLE who took part in a home-based Wii Fit program through in-depth exit interviews. Findings from qualitative analysis of the interview data may provide crucial information that can be used to refine future exercise programs using Wii Fit, as well as other exergames, and to develop better sustainable home-based exercise programs with exergames.

Methods

Participants

Fourteen of the 15 sedentary African American women with SLE who completed the 10-week Wii Fit program participated in the exit interview.[5] Study participants were recruited through the Medical University of South Carolina Lupus Clinic facilitated by the longitudinal observational SLE Clinic Database and SLE in Gullah Health (SLEIGH) Database.[6] To be eligible for participation in the study, the following inclusion criteria had to be met: 1) female $\geqslant$18 years of age; 2) self-identification as African American; 3) diagnosed with SLE and fulfilled at least 4 of the revised American College of Rheumatology classification criteria for SLE[7]; 4) ambulatory; 5) experience fatigue for the last 3 months or longer as indicated by at least a rating of 4 (moderate fatigue) on a Fatigue Visual Analogue Scale of 0–10, with 10 being the most fatigue[8]; 6) sedentary (exercise $<$3 times per week for 30 min in the past 6 months); 7) functionally literate (i.e., able to read and follow exercise directions in English); and 8) had permission from their physician to participate in the study.

The exclusion criteria were: 1) cognitive dysfunction as indicated by a score $<$24 in the Mini-Mental State Exam (MMSE)[9]; 2) anemia (with a hemoglobin $<$8 g/dL); 3) poor control of metabolic diseases; or other concurrent systemic health problems (e.g., infections, malnutrition), which are known to contribute to increased fatigue levels; 4) known electrolyte abnormalities; 5) documented psychiatric diagnosis of any major Axis I psychiatric disorder, such as melancholia; 6) severe visual and/or hearing impairment that cannot be corrected using assistive devices; 7) significant functional impairments due to heart disease, arrhythmias, chronic pulmonary disease, or conditions such as avascular necrosis of the hip or knee, or severe arthritis of 3 or more weight-bearing joints that prevent exercising; or 8) systolic blood pressure $>$200 mm Hg or diastolic blood pressure $>$115 mm Hg.

Table 1 shows the characteristics of the participants. The Institutional Review Board of the Medical University of South Carolina approved the study.

Procedures

Individual telephone interviews were conducted at the end of the 10-week Wii Fit program. An interview guide, containing pre-determined open-ended questions, was developed from a literature review and approved by the research team. Core questions from the interview guide are shown in Table 2. The interviewer (HLB) had experience in conducting interviews with African American women with SLE. At the time of the interviews, the interviewer was blinded to the results of participants' assessment results, including adherence to the program.

The interviews began with general, open-ended questions about participants' overall impression of the Wii Fit program, and concluded with more focused questions about aspects such as the impact of this Wii Fit program experience on their health and fatigue (funnel approach).[10] In order to maintain consistency across interviews, the order of questions outlined in the interview guide and sequence to facilitate discussion was followed. Depending on the flow of interaction in individual interviews, flexibility in question order or probes was used.

In addition, the interview explored issues related to Wii Fit experience (such as perceived difficulties/barriers, and satisfaction) and suggestions for improvement. The core of the interview lasted an average of 15 min (range from 8 to 22 min). The interviews were audio-recorded with participants' consent, and transcribed verbatim for analysis. Each participant was assigned a code number for data entry, with no identifying information included in the transcript. A research associate independently cross checked all transcripts against the audio recordings for accuracy.

Thematic content analysis

Three investigators (HKY, HLB, and LKV) used the following steps to analyze the content of the transcripts. One investigator (LKV) was not involved in the original trial. The three investigators independently read all transcripts several times to gain an overall impression of the content, and to formulate tentative ideas. Initial codes