National
Multiple Sclerosis
Society
Southern California
& Nevada Chapter

The Marilyn Hilton MS ACHIEVEMENT CENTER at UCLA

Living Well With Multiple Sclerosis: Comparisons of a 12-Week Blended Learning, Classroom-Based and Online Programs August 2013

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Overview

Living Well is a comprehensive wellness program created by the Southern California & Nevada Chapter of the National Multiple Sclerosis Society and the Marilyn Hilton MS Achievement Center at UCLA to optimize the quality of life of those living with the challenges of MS. **Living Well** is a 12 -week health and wellness program that helps individuals with MS pursue a comprehensive approach to well-being within the context of life with a chronic illness. The program is designed to facilitate the development of intentional lifestyle choices--positive health habits for living well with MS.

The program places a strong emphasis on personal responsibility and the maximum enhancement of physical, mental, social, intellectual and spiritual health. The program offers a broad spectrum of education and experiences that go far beyond the medical management of MS (e.g., nutrition education, fatigue and stress management, exercise). Participants were self-identified who may meet one or more of these 3 criteria: 1) recent MS diagnosis of less than 5 years; 2) possessing minimal MS symptoms; and 3) likely to be employed.

The purpose of this study was to evaluate and compare three programs: 1) Classroom-based **Living Well** program (CB); 2) Blending learning program (BL); and 3) Online Only (OL). A quasi-experimental design was used as no program participants could be randomly assigned to the three delivery methods. Results from the CB **Living Well** program have been previously published (Giesser et al., 2007).

Delivery: The **Living Well** program was delivered in three formats: 1) Classroom-based where participants met for 3-hours one time a week for twelve consecutive weeks; 2) Blended Learning where participants utilized a combination of self-directed video lectures, learning modules, interactive chat, and scheduled lectures by MS Living Well program staff on selective topics (e.g., stress management, eating and nutrition, fatigue management); and 3) Online only where participants went through the 12-structured modules with one per week along with scheduled chat sessions and period live faculty scheduled lectures which were voluntary for participants. In the Blended learning format, the only time participants met in person was when they participated in the exercise track of the program delivered within the local community fitness facilities participating in the **Living Well** program. Additionally, they had the opportunity to join in on Ask-the-Expert teleconference calls to explore some topic areas in greater depth with content experts. All three program formats included special emphasis on post-traumatic growth coping techniques including cognitive approaches to symptom management and spirituality to explore benefits in coping with MS.

Methodology

Participants: The study sample included a total of 315 participants (98 in BL, 9 OL, and 208 in CB. The CB program participants included 82 men and 126 women and the BL program participants included 11 men and 83 women. The entire study sample was employed full time (65.4.4%) or part-time (7.1%), college educated (90.7%), mostly non-smokers (92.7%), and had a mean age of 42.5 (SD=9.71). Less than half were single, divorced or widowed (47.0%) and the majority were diagnosed within the last 3 years (SD = 3.6). For the entire group, the majority (78.9%) is currently using some type of approved MS treatment drug and type of insurance included PPO (60.0%), HMO (25.6%), Medicare or Medical (5.6%) or other (8.8%).

Measures: Measures of stress, fatigue, coping style, physical health, and psychological well-being were utilized in the **Living Well** program and administered at both the beginning and end of the 12-week wellness program. The measures included the Stress Profile Inventory (Nowack, 1994), and 3-item Spirituality Index (Nowack, 2005). A 5-item Post-Then measure of current health and functioning was specifically developed to evaluate the overall program outcomes.

Analysis: Effect sizes were determined for practical significance (change in scores divided by the standard deviation). Effect sizes of 0.2, 0.5 and 0.8 are considered small, moderate and large, respectively. All analyses were exploratory and no other adjustments were made. In all, the analyzed data, $p < .01$ was regarded as significant or otherwise noted.

Results

Equivalence of the BL, BC and OL Groups

Comparisons of all variables were compared at the beginning of the program for the BL, CB, and OL groups to determine equivalence in the absence of the ability to randomize participants into the programs. Results of the ANOVA revealed **only one significant difference** across all initial measures of confidence, knowledge, self-reported health or disability, coping, stress, or lifestyle practices between the blended learning and direct classroom groups.

Social support in the BL group was reported to be significantly *higher* than the CB group or OL ($p < .05$) in post-hoc analyses (Scheffe) although the difference may not be practically meaningful. Social support was measured as a composite measure of self-reported availability, utility and overall satisfaction with the participant's social support network by partners, bosses, coworkers, family, and friends. Those self-selecting into the blended learning and online only programs appear to have a slightly stronger social support networks which might be beneficial with those participating in a program with less direct face-to-face contact with other Living Well participants. These findings lend support to the argument that despite the self-selection into the program, overall health and coping were fairly equivalent in the CB, BL, and OL groups at the beginning of the Living Well program.

Living Well Blended Learning and Online Only Outcomes

Program Goals, Knowledge and Confidence: It was hypothesized that participants in the 12-week **Living Well** Blended Learning and Online Only programs would report less stress, anxiety and enhanced coping, a greater sense of personal control, enhanced coping skills, increased knowledge of the MS disease, and a reduction in fatigue symptoms.

Across both non-live programs, the majority of the participants reported successfully meeting their personal wellness goals set at the beginning of the program either to a "high" or "very high" extent (43.4%) and 52.5% reported meeting them at a "moderate extent." Finally, participants reports significantly greater increases in current health, knowledge about MS, and confidence in managing life with MS relative to their initial scores at the beginning of the program (all p's < .01) using paired t-score analyses.

Stress, Lifestyle, Psychological and Health Outcomes: Participants reported significant improvements in subjective ratings of stress, social support, resilience, eating/nutrition habits, physical activity/exercise, psychological well-being and reduced anxiety at the end of the 12-week program (all p's < .01).

Participants also reported a significant increase in assessment of his/her current health status and less health problems that interfere with daily living (all p's < .01) at the end of the program.

Spirituality/Coping Outcomes: Participants reported significant improvements in spirituality (sense of life purpose and satisfaction) and coping with their MS symptoms as a result of the **Living Well** blended and online only learning programs. Specifically, program participants reported significantly more self-efficacy and coping skills in managing life with MS and increased knowledge about the disease. Participants reported using significantly less negative appraisal, more threat minimization and more problem focused coping approaches (StressScan coping scales) in the face of work and life stress at the end of the program (all p's < .01).

Comparison of Blended Learning, Direct Classroom, and Online Outcomes

A comparison of differences on change scores between pre-post program outcomes was conducted using ANOVA between the blended learning (N=98), direct classroom (N=208), and online only (N=9) outcomes. No significant differences were observed between the three **Living Well** groups in any change scores using One-way analyses (all p's > .05).

Discussion

Separate repeated measures analysis of variance (ANOVA) was run on each psychosocial health outcome comparing change scores over all three 12-week Living Well programs (Live, Blended and Online). Statistically significant self-reported changes in decreased stress, global health, exercise/physical activity, eating/nutritional habits, self-efficacy, coping skills, psychological well-being, and spirituality were observed in the participants as a result of the 12-week blended learning **Living Well** program format (Table 1).

Effect sizes suggest the greatest changes occurred in increasing confidence in managing MS, increasing knowledge about MS, reduced fatigue (Sleep/Rest), overall health/lifestyle habits, reduction of stress and reduction in the use of negative coping (Negative Appraisal) as a result of the program. Moderate effect sizes were also observed for increasing overall health, improved rest/sleep, reduce work/life stress, reducing negative appraisal, enhancing physical activity, eating/nutrition, and increased happiness (Psychological well-being).

Comparisons between the Classroom-based, Blended Learning, and Online only format suggest ***equivalence*** in these approaches to enhancing psychosocial coping, functioning and overall well-being for participants in a 12-week **Living Well** program. These findings add support for use of blended and online only learning format for the purpose of enhancing the coping, lifestyle, and well-being behaviors for those with MS. The blended learning and online only programs appear to be equally effective as a classroom learning approach and its scalability to reach participants who are home bound and unable to take advantage of community based classroom interventions is encouraging. Additional research is required to replicate these findings and use of a true randomized design is suggested for the future with larger sample sizes for both online only and blended learning groups.

Table 1
Living Well Program Changes (N=315)[1]

Research Variable	Time 1 Mean	Time 2 Mean	ES[a]
Confidence in Managing MS	2.5	3.9	1.41
Knowledge of MS	2.7	3.9	1.29
Overall Health Habits	49.57	56.94	.73
Current Health	3.2	3.8	.72
Perceived Stress	55.1	48.9	.64
Psychological Well-Being	46.4	53.7	.60
Rest/Sleep	47.2	52.8	.57
Exercise/Physical Activity	45.4	51.1	.56
Spirituality Index	10.01	11.28	.56
Cognitive Hardiness	47.4	52.7	.52
Eating/Nutrition	50.7	56.2	.52
Coping--Problem Focused	47.7	55.2	.51
Coping--Positive Appraisal	50.3	55.7	.49
Coping--Negative Appraisal	49.6	43.6	.48
Coping—Threat Minimization	50.2	54.6	.39
Type A Behavior	46.0	43.0	.39
Health Problems	2.8	2.4	.37
Social Support	49.9	54.1	.33

[1]All Living Well program participants (Live, Blended Learning, Online Only)

[2]Effect Size (ES) = mean change / standard deviation

ES = 0.2 small effect; ES = 0.5 moderate effect; ES = 0.8 large effect