National Multiple Sclerosis Society Southern California Chapter

Living Well With Multiple Sclerosis: Comparisons of a 12-Week Blended Learning versus Direct Classroom Program

Giesser, B., Coleman, L., Fisher, S., Guttry, M., Herlihy, E., Nonoguch, S., Nowack, D., Roberts, C. & Nowack, K.

Overview

Living Well is a comprehensive wellness program created by the Southern California 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) Employed.

The purpose of this study was to compare the direct classroom **Living Well** program (DC) to a newly developed blending learning program (BL) to compare and contrast its effectiveness given the self-directed nature of the 12-week learning modules and reduced interaction with both other participants and MS staff facilitating the program. A quasi-experimental design was used as no program participants could be randomly assigned to the two delivery methods. Results from the DC **Living Well** program have been previously published (Giesser et al., 2007).

Delivery: The **Living Well** program was delivered in two formats: 1) Direct classroom where participants met for 3-hours one time a week for twelve consecutive weeks; and 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). The only time participants met in person was when they participated in the exercise track of the program delivered within the local communities participating in the **Living Well** program. Both 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: Program participants included 8 men and 67 women (89.3% female) who were currently employed full time (64.4.3%) or part-time (4.1%), college educated (93.0%), mostly non-smokers (90.5%), and had a mean age of 43.6 (SD=9.49). Less than half were single, divorced or widowed (42.0%) and the majority were diagnosed within the last 3 years (SD = 3.6). For this BL group, the majority (84.7%) is currently using some type of approved MS treatment drug and type of insurance included PPO (53.4%), HMO (34.2%), Medicare or Medical (6.8%) or other (5.6%).

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, and 3-item Spirituality Index (Nowack, 1994). 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, $p < .05$ were regarded as significant or otherwise noted.

Results

Equivalence of the BL and DC Groups

Comparisons of all variables were compared at the beginning of the program for both the BL and DC groups to determine equivalence in the absence of the ability to randomize participants into one or the other program. 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 DC group ($F(1, 267) = 6.59$, $p = .011$). 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. These findings lend support to the argument that despite the self-selection into the program, there is no reason to believe that overall health and coping differentiated the BL and DC groups at the beginning of the program.

Living Well Blended Learning Outcomes

Program Goals, Knowledge and Confidence: It was hypothesized that participants in the 12-week **Living Well** Blended Learning program 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.

Overall, the majority of the program participants reported successfully meeting their personal wellness goals set at the beginning of the program either to a "high" or "very high" extent (33.3%) and 60.8% reported meeting them at a "moderate extent." Participants also reported being more knowledgeable about MS and more confident about being able to cope with it (72.6% and 62.7%, respectively, rated "high" or "very high") on the post-then evaluation.

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 (Table 1).

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 learning program. 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 and Direct Classroom Outcomes

A comparison of differences on change scores between pre-post program outcomes was conducted using ANOVA between the blended learning (N=51) and direct classroom (N=120) outcomes. The only significant differences observed between the two **Living Well** program delivery groups were in self-reported Knowledge (increase in understanding of the MS disease) and Confidence (increase in confidence to cope with MS symptoms).

Participants in the **Living Well** Direct classroom reported *significantly more* MS knowledge and increased change in confidence than those in the blended learning program ($F(1,179) = 5.83$, $p = .017$ and $F(1,179) = 3.97$, $p = .047$, respectively).

Discussion

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 most dramatic changes occurred in increasing confidence in managing MS, increasing knowledge about MS, reduced fatigue (Sleep/Rest), and reduction in the use of negative coping (Negative Appraisal) as a result of the program. Moderate effect sizes were also observed for enhancing physical activity, eating/nutrition, resilience (Cognitive Hardiness), threat minimization coping, and happiness (Psychological well-being) and reduced perceptions of work and life stress.

Comparisons between the Direct Classroom and Blended Learning format suggest ***equivalence*** in these two 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 a blended learning format for the purpose of enhancing the coping, lifestyle, and well-being behaviors for those with MS. The blended learning program appears 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.

Table 1

Living Well Blended Learning Program Changes (N=51)

Research Variable	Time 1 Mean	Time 2 Mean	p	ES[a]
Confidence in Managing MS[d]	2.5	3.7	.01	1.03
Knowledge of MS[d]	2.8	3.8	.01	1.00
Rest/Sleep[c]	46.9	53.7	.01	.67
Coping--Negative Appraisal[c]	47.05	39.2	.01	.60
Exercise/Physical Activity[c]	46.3	52.7	.01	.55
Psychological Well-Being[c]	47.5	53.7	.01	.55
Perceived Stress[c]	53.9	48.3	.01	.54
Cognitive Hardiness[c]	47.8	53.2	.01	.53
Eating/Nutrition[c]	51.9	57.3	.01	.53
Coping—Threat Minimization[c]	47.35	54.4	.01	.52
Current Health[b]	3.22	3.7	.01	.49
Coping--Problem Focused[b]	49.8	54.5	.01	.48
Social Support[b]	52.2	56.8	.01	.46
Type A Behavior[b]	45.9	40.7	.01	.42
Spirituality Index[b]	10.3	11.3	.01	.38
Coping--Positive Appraisal	50.8	54.6	.13	--
Health Problems	2.62	2.46	.15	--

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

[b]ES=0.2 small effect. [c]ES=0.5 moderate effect. [d]ES=0.8 large effect.