Central European Journal of
Nursing and Midwifery

Cent Eur J Nurs Midw 2021;12(1):208–214
doi: 10.15452/CEJNM.2020.11.0032

ORIGINAL PAPER

THE EFFECT OF LIFE SKILLS TRAINING ON THE COPING OF PEOPLE WITH MULTIPLE SCLEROSIS

Mahnaz Seyedoshohadaee[1], Shima Parnian[1], Hamid Haghani[2], Mohammad Sadegh Sargolzaei[3]

[1]*Department of Internal Surgical, School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran*
[2]*Department of Biostatistics, School of Health, Iran University of Medical Sciences, Tehran, Iran*
[3]*Student Research Committee, School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran*

Received August 27, 2020; Accepted November 17, 2020.

Abstract

Aim: One of the psychological interventions that help patients effectively deal with the problems and challenges of daily life is life skills training. So determining the effect of life skills training on the coping of people with multiple sclerosis (MS) was the aim of this study. *Design:* A quasi-experimental study. *Methods:* The research was conducted with a sample of 80 people with MS attending the Tehran MS Association in 2017. The intervention group received four one-hour life skills training sessions and the control group received only routine care. To contrast the results between the two groups and the findings before and after the intervention, the independent t-test and paired t-test, respectively, were used. *Results:* Most of the respondents in both the intervention and control groups (55.0% and 57.5%, respectively) were males. There was no significant disparity in terms of coping with MS between the two groups before the intervention ($p < 0.05$) but a significant disparity after the training ($p < 0.01$). *Conclusion:* Applying life skills as effective and useful training was the achievement of this study. Therefore, application of the life skills training program is recommended for MS patients.

Keywords: compatibility, compliance with treatment, coping, life skills training, multiple sclerosis.

Introduction

Multiple sclerosis (MS) is a chronic disease that can be related to different combinations of cognitive, motor and neuropsychiatric symptoms (Schmitt et al., 2014). According to statistics of the National Multiple Sclerosis Society (NMSS) in the United States, there are 400,000 MS patients in the United States and 2 million in the world (McGuire et al., 2015; Pagnini et al., 2014). In Iran, the number of people with MS is about 40,000 (Daneshjoo et al., 2020). During the course of the illness, most people with MS become progressively disabled. This incapacity negatively impacts people's independence (Peeters et al., 2013). After about 20 years, more than half of people with MS use mobility aids (Aljumah et al., 2013; Ploughman et al., 2012). Since 1993, disease-modifying treatments have been available; yet the management of MS remains a challenge (Tan et al., 2010). According to studies, psychological interventions can improve self-efficacy and self-confidence, reduce stress, enhance adaptability skills and increase overall quality of life, by treating mood disorders such as depression and anxiety (Thomas et al., 2006).

Life skills training is a psychological intervention that empowers people to cope with the needs of daily life effectively (Vaidya, 2014). Since MS affects people in the most productive years of their lives and due to its variable and unpredictable nature, it may be difficult to adapt to it (Thomas et al., 2006). Unforeseeable and unenviable symptoms, treatment regimens and side effects of medications are uncertain, so there are many challenges of psychologically coping with these problems. Disease-related reasons that can affect patient's levels of adjustment or quality of life include the severity of symptoms, degree of neurological disability and duration of the disease (Alschuler & Beier, 2015). Coping mechanisms are vital for patients with MS who are in an unpredictable stage of their illness. Although it seems that most people adapt positively to their condition and maintain their quality of life, abnormal mechanisms are usual and closely related to depression (Bianchi et al., 2014).

Coping mechanisms have both behavioral and mental aspects that individuals use to overcome, tolerate or reduce stressful happenings (Montel et al., 2012)

Corresponding author: Mohammad Sadegh Sargolzaei, Student Research Committee, School of Nursing and Midwifery, Iran University of Medical Sciences, Rashid Yasemi 1, Tehran, Iran; email: 74ms13@gmail.com

Coping mechanisms effectively support individuals against the factors that cause anxiety. Being aware of coping mechanisms in addition to medical treatments in order to have a better life experience with MS is important (Milanlioglu et al., 2014). Improving life quality of people with MS for a long time is necessary and should be promoted by appropriate coping mechanisms (Preede et al., 2015).

A study on the effectiveness of life skills training on social adjustment in children showed that teaching life skills in children improves their social adjustment (Rahmati et al., 2010). Although MS has countless symptoms, cognitive changes and motor limitations are the most important ones. For reducing symptoms of MS, self-management is important (Peeters et al., 2013). Since nurses have more interaction with patients than other members of the treatment team, they are more suited to communicate with, advise and educate patients. Patient education can also promote patient awareness (Mohammadi et al., 2012).

Aim

The objective of the study was to determine the effect of life skills training on the coping of people with MS. We decided to conduct a study in this field to increase health care policymakers' awareness of this topic as well as nurses' knowledge and skills in patient education and to take a step to improve the coping of people with MS.

Methods

Design

A quasi-experimental research design was used in this study.

Sample

This study comprised people with MS attending the Tehran MS Association. With regard to the inclusion criteria, the researchers selected 89 subjects using the continuous sampling method: of those, nine dropped out of the study during the research process, so finally, the research was carried out on 80 people. Initially, 46 subjects were allocated to the intervention group and 43 to the control group. To prevent data contamination, the intervention and control groups attended the Tehran MS Association on separate days.

In the intervention group, one person refused to participate in the research, one person was excluded from the study as he did not attend a training session and four patients were excluded due to exacerbation of their disease which resulted in their hospitalization. Three people were excluded due to exacerbation of their disease in the control group resulting in their hospitalization, so they could not complete the questionnaire at the second stage of the study. Finally, in both the control and intervention groups, data on 40 patients with MS were examined and analyzed. The inclusion criteria were as follows: MS definitively diagnosed by a neurologist, being able to write and read, being able to attend training sessions, not being pregnant (for women), no dose adjustments for medications that reduce the illness, having no other involvement and disabling diseases of the cognitive system, no chronic lung and heart disease, no psychiatric disorders and using no psychiatric medications based on self-report and medical records. The exclusion criteria were: being hospitalized for recurrent illness, failure to attend a training session, change of MS to a progressive type and being too exhausted to receive training.

Data collection

The data were collected using a questionnaire survey. A demographic information form included information about gender, level of education, marital status, age, economic status, personal health assessment and employment. It also contained MS-related questions including the type of MS (relapsing-remitting, progressive), experience of disease exacerbation and the period of illness. The Coping with Multiple Sclerosis Scale (CMSS) is a 29-item questionnaire that in a particular stressful situation examines people's reactions. Participants are asked to rate the main problem and its stress level in relation to the illness they have experienced in the past month on a 7-point Likert scale. The rate of use of each of the 29 coping mechanisms in the last month is then determined by the participants. The responses were then categorized on a 5-point Likert scale. Analysis of CMSS factors revealed 7 subscales, including problem solving, acceptance, personal health control, physical assistance, avoidance, energy conservation and emotional liberation. The problem-solving factor included one item, the physical assistance factor had 5 items, the acceptance factor contained 10 items, the avoidance factor included 4 items, the personal health control factor included 3 items, the energy conservation factor contained 3 items and the emotional liberation factor had 4 items. Content validity was used to validate the demographic form and the educational booklet. This way, the data collection form was prepared after studying the literature and books related to the research topic. Then, modifications were made using expert opinions of three respected faculty members of the Nursing & Midwifery School. In 2001, the CMSS was first developed by Pakenham and Rinaldis (2001) to study the mechanisms for coping with MS. The content validity index was used to evaluate validity of the tool. Then, it was given to ten respected faculty members for review. To assess the reliability of the self-management questionnaire, 20 subjects were selected for a pilot study and the internal correlation of the questionnaire was calculated (confidence coefficient above 0.85). First, the questionnaire was completed by 20 people with MS. Two weeks later, the questionnaire was completed again by the same individuals and its Cronbach's alpha was calculated.

Personal, disease and coping information questionnaires were provided to patients to assess their baseline values before training. Patients in both groups completed the CMSS questionnaire again in the eighth week. Four one-hour training sessions were carried out for patients in the intervention group over four weeks. At the same time, a compact disk (CD) and relevant educational booklet were provided to the intervention group. The training booklet was based on the information prepared to train the participants as follows:

- Session 1: MS disease, applications and description of life skills training, adherence to treatment such as self-management in the treatment regimen, and self-awareness skills.
- Session 2: Empathy training skills, effective communication and interpersonal relationships.
- Session 3: Reviewing previous materials and starting to teach stress coping skills, problem solving and emotion management.
- Session 4: Reviewing previous materials, dynamic and critical thinking skills and teaching decision-making skills.

All sessions were conducted in the Tehran MS Association's training classroom. A psychiatrist was also present at all counseling sessions and supervised the implementation of training. The training was delivered by the researcher and the teaching methods included lecturing, discussion, questioning and answering. Audio-visual devices such as video projectors were also used. In addition, an educational package was given to the intervention group. Any subject who was absent from a training session was removed from the study. Routine care was provided to the control group and the controls completed the research tools. In order to observe the ethical principles in research, the relevant educational booklet and CD were given to the controls at the end of the training sessions.

Data analysis

Descriptive statistics were used to describe the data. To achieve the research objectives, independent, paired t-test, t-test, Chi-square and Fisher's exact test were used. SPSS version 21 software was used to analyze the data. The level of statistical significance was set at 0.05 (5%).

Results

Most participants in both the intervention and control groups were male (55.0–57.5%). The mean and standard deviation of the participants' age were 33.02 ± 10.34 years in the intervention group and 32.22 ± 8.88 years in the control group. Most subjects in the intervention and control groups were single, had education level of diploma and were unemployed. They had experienced more than five MS attacks or relapses and four to six months had passed from their last MS attack or relapse. Most respondents in the control group had average income. In the intervention group, half of the respondents had low income and the other half had average income. In both the control and intervention groups, most respondents reported having good health. In the control group, most respondents had relapsing-remitting MS; in the intervention group, most respondents had primary progressive MS. Based on the results of statistical tests, the two groups were homogeneous in terms of demographic characteristics (Table 1).

The mean scores of coping before and after the intervention in the intervention group showed a statistically significant disparity in the problem solving dimension; the mean score of coping in this dimension increased after the intervention ($p < 0.001$). In terms of physical assistance, there was a statistically significant disparity; after the intervention, the mean score of coping in this dimension increased ($p = 0.005$). There was a statistically significant disparity in the acceptance dimension; after the intervention, the mean score of coping in this dimension increased ($p < 0.001$). There was no statistically significant disparity in the avoidance dimension ($p = 0.958$). In the dimension of personal health control, there was a statistically significant disparity; after the intervention, the mean score of coping in this dimension increased ($p < 0.001$). In terms of energy conservation, there was a statistically significant disparity; after the intervention, the mean score of coping in this dimension increased ($p < 0.001$). There was no statistically significant disparity in the emotional liberation dimension ($p = 0.085$) (Table 2).

In the control group, the mean score of coping before and after the intervention showed no statistically significant disparity in the problem solving dimension ($p = 0.498$). In terms of physical assistance, there was no statistically significant

Table 1 Frequency distribution and numerical indicators of demographic and disease information in the intervention and control groups (n = 80)

Variable		**Control group n (%)**	**Intervention group n (%)**	**p-value***
Gender	male	23 (57.5)	22 (55.0)	0.822[a]
	female	17 (42.5)	18 (45.0)	
Marital status	single	24 (60.0)	27 (67.5)	0.820[c]
	married	9 (22.5)	8 (20.0)	
	divorced	5 (12.5)	4 (10.0)	
	widowed	2 (5.0)	1 (2.5)	
Education	below diploma	2 (5.0)	0 (0.0)	0.380[c]
	diploma	25 (62.5)	26 (65.0)	
	above diploma	13 (32.5)	14 (35.0)	
Health status	poor	4 (10.0)	3 (7.5)	0.650[c]
	good	32 (80.0)	35 (87.5)	
	very good	4 (10.0)	2 (5.0)	
Level of income	low	14 (35.0)	20 (50.0)	0.160[c]
	moderate	24 (60.0)	20 (50.0)	
	high	2 (5.0)	0 (0.0)	
Employment status	unemployed	27 (67.5)	29 (72.5)	0.490[c]
	office worker	2 (5.0)	0 (0.0)	
	self-employed	8 (20.0)	7 (17.5)	
	retired	3 (7.5)	4 (10.0)	
Type of disease	relapsing-remitting	19 (47.5)	17 (42.5)	0.790[a]
	primary progressive	15 (37.5)	18 (45.0)	
	secondary progressive	6 (15.0)	5 (12.5)	
		mean ± SD	**mean ± SD**	
Age (years)		32.22 ± 8.88	33.02 ± 10.34	0.712[b]
Time passed since the last attack (months)		7.80 ± 5.91	7.30 ± 5.51	0.697[b]
Number of attacks (over the last three months)		5.90 ± 3.40	5.90 ± 3.01	0.990[b]

**level of statistical significance $p < 0.05$; [a]Chi-square test; [b]Independent t-test; [c]Fisher's exact test; SD – standard deviation*

Table 2 Comparison of coping dimensions before and two months after the intervention in the intervention group

Variable	**Before intervention**		**After intervention**		**p-value***
	mean	**SD**	**mean**	**SD**	
Problem solving	10.60	2.22	11.92	1.75	0.001
Physical assistance	18.50	2.64	20.25	2.47	0.005
Acceptance	19.20	3.24	24.85	3.12	0.001
Avoidance	13.97	2.47	13.95	2.31	0.958
Personal health control	14.71	3.03	17.80	2.39	0.001
Energy conservation	13.00	2.35	16.80	2.77	0.001
Emotional liberation	7.55	1.78	6.80	1.75	0.085

**obtained from a paired samples t-test; SD – standard deviation*

Table 3 Comparison of coping dimensions before and two months after the intervention in the control group

Variable	**Before intervention**		**After intervention**		**p-value***
	mean	**SD**	**mean**	**SD**	
Problem solving	11.32	1.78	11.10	1.59	0.498
Physical assistance	17.65	2.54	18.12	2.51	0.146
Acceptance	19.82	3.04	19.75	3.31	0.058
Avoidance	12.80	2.95	13.07	2.76	0.623
Personal health control	14.05	4.13	14.24	3.05	0.560
Energy conservation	12.05	2.50	12.25	2.52	0.440
Emotional liberation	6.90	1.62	7.22	1.59	0.097

**obtained from a paired samples t-test; SD – standard deviation* disparity (p = 0.146). There was no statistically significant disparity in the acceptance dimension (p = 0.058) and avoidance dimension (p = 0.623). There was no statistical significant disparity in terms of personal health control (p = 0.560). In terms of energy conservation, there was no statistically significant disparity (p = 0.440). Similarly, there was no statistical significant disparity in terms of emotional liberation (p = 0.097) (Table 3).

Discussion

Considering the effects of life skills training on the coping of people with MS, the results show a significant difference in all coping mechanisms other than emotional liberation, so that training increased the use of effective coping mechanisms. Avoidance was an ineffective coping mechanism and, as expected, the impact of education on this dimension was not significant. The conclusions of a study by McGuire et al. (2015) showed that the overall score of anxiety and depression decreased after intervention and in the field of emotion-centered coping and avoidance, the disparity was not significant. Their findings regarding avoidance are in line with the results of our study. But in the present study, significant differences were only observed in the dimensions of emotional liberation and acceptance. In this regard, it can be said that McGuire et al. (2015) emphasized the effect of biofeedback despite the fact that their sample was much smaller than ours. On the other hand, the tools used in the two studies are not the same. The findings of a longitudinal study by Coles et al. (2007) on parents of children with MS showing that special psychological interventions have a positive effect on coping mechanisms, reducing stress, limiting activity and increasing social support of children with MS are consistent with our study. In their study, life skills training was one of the main components of intervention, similar to our study in terms of educational content (Coles et al., 2007).

Pakenham and Rinaldis (2001) showed a positive effect of psychological intervention on mental health status and reduction of anxiety and problems of couples with AIDS; these are consistent with our findings. The educational content in their study is very similar to that used in the present study (Pakenham & Rinaldis, 2001).

A study by Laidlaw et al. (2008) showed that after the implementation of a behavioral cognitive program and psychological training, the difference between the control and intervention groups was significant in terms of seeking support and problem-focused coping. In terms of the mechanism of avoidance and blame, however, the difference was not significant. Moreover, psychological adaptation improved, positive mental states increased and distress decreased compared to the control group (Laidlaw et al., 2008). The findings of the above research also show that psychological training improved coping in the dimensions of physical assistance, problem-focused coping and health control, but it reduced coping in the dimension of avoidance; these are congruent with the results of the present study. In this study, regarding to psychological needs for acquiring the coping behavior of patients with MS as a nursing diagnosis was highlighted and then the necessary training was provided to meet these needs. The results of the present study show that when nurses complied with their educational-counseling role, coping behavior improved in MS patients.

According to various studies, the absence of awareness related to coping with the disease causes complications and problems for these patients, eventually leading to disrupted and reduced quality of life. Since MS is a chronic disease and due to the type of problems that MS patients face, failure of drug treatment to improve their problems and need for a comprehensive and ongoing care plan, education can encourage the patient to actively participate in reducing some of their needs (Hemmatpoor et al., 2018)

Limitation of study

One limitations of this study was the short duration of training in each session and the follow-up intervals due to the unavailability of patients and their early fatigue during the study. Other limitations were an insufficient access to MS patients in hospitals and the prolonged sampling process due to the researchers' time constraints.

Conclusion

Given the content of life skills training and its commonalities with the dimensions of coping, these skills can be widely used to improve coping in MS patients. The positive effect of life skills training was the main achievement of this study, since helping the patients and making them ready to improve the situation caused by the disease is one of the main goals of this training; as nurses, we make this possible by creating an effective relationship between nurses and patients in order to support, educate and advise. Utilizing useful information provided by this training can be used in evaluation of the care program for MS patients.

Ethical aspects and conflict of interest

The ethical principles of the 1964 Declaration of Helsinki were followed. This research was approved by the Ethics Committee of the University (code IR.IUMS.REC.1394.9311686009) as well as by the Research Council of the Iranian MS Association. Before the study, written and oral consent was obtained from the participants. The authors declare that they have no conflict of interests.

Funding

This research received no specific grant from any funding agency, commercial or not-for-profit sectors.

Acknowledgments

The authors would like to thank the officials of the Tehran MS Society and the patients who contributed to the research process.

Author contributions

Study concept and design and process of sampling (MS, SP), data analysis (HH), manuscript draft (MS, MSS), critical revision of the manuscript (MS, MSS, SP), final approval of the manuscript (MS, MSS).

References

Aljumah, M., Alroughani, R., Alsharoqi, I., Bohlega, S. A., Dahdaleh, M., Deleu, D., Esmat, K., Khalifa, A., Sahraian, M. A., Szólics, M., Altahan, A., Yamout, B. I., Rieckmann, P., & Daif, A. (2013). Future of management of multiple sclerosis in the middle East: a consensus view from specialists in ten countries. *Multiple Sclerosis International*, *2013*, 952321. https://doi.org/10.1155/2013/952321

Alschuler, K. N., & Beier, M. L. (2015). Intolerance of uncertainty: shaping an agenda for research on coping with multiple sclerosis. *International Journal of MS Care*, *17*(4), 153–158. https://doi.org/10.7224/1537-2073.2014-044

Bianchi, V., De Giglio, L., Prosperini, L., Mancinelli, C., De Angelis, F., Barletta, V., & Pozzilli, C. (2014). Mood and coping in clinically isolated syndrome and multiple sclerosis. *Acta Neurologica Scandinavica*, *129*(6), 374–381.

Coles, A. R., Pakenham, K. I., & Leech, C. (2007). Evaluation of an intensive psychosocial intervention for children of parents with multiple sclerosis. *Rehabilitation Psychology*, *52*(2), 133–142. https://doi.org/10.1037/0090-5550.52.2.133

Daneshjoo, A., Gheitasi, M., & Jaffari, N. (2020). [The effect of six weeks' massage in water on walking speed, postural control, pain intensity, fatigue and quality of life in women with multiple sclerosis (Persian)]. *Journal of Anesthesiology and Pain*, *11*(1), 70–84.

Hemmatpoor, B., Gholami, A., Parnian, S., & Seyedoshohadaee, M. (2018). The effect of life skills training on the self-management of patients with multiple sclerosis. *Journal of Medicine and Life*, *11*(4), 387–393.

Laidlaw, K., Davidson, K., Toner, H., Jackson, G., Clark, S., Law, J., Howley, M., Bowie, G., Connery, H., & Cross, S. (2008). A randomised controlled trial of cognitive behaviour therapy vs treatment as usual in the treatment of mild to moderate late life depression. *International Journal of Geriatric Psychiatry*, *23*(8), 843–850.

McGuire, K. B., Stojanovic-Radic, J., Strober, L., Chiaravalloti, N. D., & DeLuca, J. (2015). Development and effectiveness of a psychoeducational wellness program for people with multiple sclerosis: description and outcomes. *International Journal of MS Care*, *17*(1), 1–8. https://doi.org/10.7224/1537-2073.2013-045

Milanlioglu, A., Özdemir, P. G., Cilingir, V., Gülec, T. Ç., Aydin, M. N., & Tombul, T. (2014). Coping strategies and mood profiles in patients with multiple sclerosis. *Arquivos de Neuro-Psiquiatria*, *72*(7), 490–495. https://doi.org/10.1590/0004-282X20140089

Mohammadi, N., Tizhoosh, M., Seyedoshohadaei, M., & Haghani, H. (2012). [Face-to-face education vs. Group education on knowledge and anxiety of patients undergoing coronary angiography (Persian)]. *Hayat*, *18*(3), 44–53.

Montel, S., Spitz, E., & Bungener, C. (2012). Coping strategies in multiple sclerosis patients with frontal cognitive disorders. *European Neurology*, *68*(2), 84–88. https://doi.org/10.1159/000337905

Pagnini, F., Bosma, C. M., Phillips, D., & Langer, E. (2014). Symptom changes in multiple sclerosis following psychological interventions: a systematic review. *BMC Neurology*, *14*, 222. https://doi.org/10.1186/s12883-014-0222-z

Pakenham, K. I., & Rinaldis, M. (2001). The role of illness, resources, appraisal, and coping strategies in adjustment to HIV/AIDS: the direct and buffering effects. *Journal of Behavioral Medicine*, *24*, 259–279. https://doi.org/10.1023/a:1010718823753

Peeters, J. M., Wiegers, T. A., & Friele, R. D. (2013). How technology in care at home affects patient self-care and self-management: a scoping review. *International Journal of Environmental Research and Public Health*, *10*(11), 5541–5564. https://doi.org/10.3390/ijerph10115541

Ploughman, M., Austin, M. W., Murdoch, M., Kearney, A., Godwin, M., & Stefanelli, M. (2012). The path to self-management: a qualitative study involving older people with multiple sclerosis. *Physiotherapy Canada*, *64*(1), 6–17. https://doi.org/10.3138/ptc.2010-42

Preede, L., Saebu, M., Perrin, P. B., Nyquist, A., Dalen, H., Bautz-Holter, E., & Røe, C. (2015). One-year trajectories of mental and physical functioning during and after rehabilitation among individuals with disabilities. *Health and Quality of Life Outcomes*, *13*, 135. https://doi.org/10.1186/s12955-015-0328-z

Rahmati, B., Adibrad, N., Tahmasian, K., & Sedghpour, B. S. (2010). The effectiveness of life skill training on social adjustment in children. *Procedia – Social and Behavioral Sciences*, *5*, 870–874. https://doi.org/10.1016/j.sbspro.2010.07.201

Schmitt, M. M., Goverover, Y., Deluca, J., & Chiaravalloti, N. (2014). Self-efficacy as a predictor of self-reported physical, cognitive, and social functioning in multiple sclerosis. *Rehabilitation Psychology*, *59*(1), 27–34. https://doi.org/10.1037/a0035288

Tan, H., Yu, J., Tabby, D., Devries, A., & Singer, J. (2010). Clinical and economic impact of a specialty care management program among patients with multiple sclerosis: a cohort study. *Multiple Sclerosis*, *16*(8), 956–963. https://doi.org/10.1177/1352458510373487

Thomas, P. W., Thomas, S., Hillier, C., Galvin, K., & Baker, R. (2006). Psychological interventions for multiple sclerosis. *Cochrane Database of Systematic Reviews*, 1, Cd004431. https://doi.org/10.1002/14651858.CD004431.pub2

Vaidya, S. (2014). *Developing entrepreneurial life skills: creating and strengthening entrepreneurial culture in Indian schools*. Springer Science & Business Media.