

Effectiveness of Life Enrichment and Enhancement Program on Improving Emotional Adjustment in Women with Multiple Sclerosis

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ABSTRACT

Objective: The purpose of this study was to determine the effectiveness of an life enrichment and enhancement program on the emotional adjustment of women with Multiple Sclerosis (MS).

Materials and Methods: This quasi-experimental research involved an experimental group and a control group, using a pre-test and post-test design. The statistical population consisted of women with MS visiting the Loqman Hakim Hospital and Imam Khomeini Hospital. From among these, a sample of 30 individuals was randomly selected and assigned to either the experimental or control group. The experimental group received six sessions of group interventions, while the control group was placed on a waiting list. Both groups completed the Bell Adjustment Inventory before and after the experiment. Descriptive statistics and analysis of covariance were used for data analysis with SPSS-26.

Findings: The results showed that the intervention had a significant effect on emotional adjustment ($F = 26.74, P < 0.001$).

Conclusion: Based on the findings, it can be concluded that the life enrichment and enhancement program improves emotional adjustment in women with MS.

Keywords: *Life Enhancement, Emotional Adjustment, MS*

1. Introduction

Multiple sclerosis (MS) is a demyelinating disease of the central nervous system and is one of the most common neurological disorders in humans, being particularly disabling during the years of youth (Habibi Asgarabad et al., 2023). This disease damages the myelin

sheath of the central nervous system, including the brain, optic nerve, and spinal cord. The most common onset age is during young adulthood, with the incidence being about three times higher in women than in men (Hajloo et al., 2020). The exact cause of MS remains unknown; however, it is likely influenced by multiple factors, including global climatic conditions, stress, genetics, immune deficiencies,

autoimmune mechanisms, and environmental factors, especially viral infections) [Albein-Urios et al., 2019](#). MS is a multifactorial disease and requires a specific sequence and combination of these factors for its development. Fatigue is one of the most common and debilitating symptoms in these patients, causing disruptions in work, social activities, and daily functioning ([Aghajani & Samadifard, 2019](#)). Approximately 80% of patients report fatigue, and it is considered the first and most bothersome symptom in one-third to half of the patients ([Schreurs et al., 2002](#)).

These patients must cope with the stresses of everyday life as well as those stemming from the unpredictable and fluctuating symptoms of the disease. Therefore, the progression of the disease can interfere with work, family life, relationships, and social activities ([Malcolmson et al., 2012](#)). In such situations, these patients become emotionally overwhelmed and require emotional adjustment. Adjustment refers to the continuous alteration of cognitive and behavioral efforts to manage external exhausting pressures or specific stresses that are perceived as beyond one's capacity. Simply put, adjustment is an effort to effectively control stress ([Islami Nasab, 2010](#)). Adjustment is a process in which an individual actively engages over a period of time, employing various strategies. The choice of strategy can have either a positive or negative impact on life quality or hope. When adjustment is successful, the individual's quality of life improves; otherwise, not only they but also their families may face issues like an inability to resolve conflicts and familial disintegration ([Ebadi et al., 2012](#)). Adjustment comes in various forms, and emotional adjustment involves good mental health and resilience against the effects of psychological stress, positive mood, and satisfaction with personal life, as well as a suitable balance between emotional adjustment cognition and the satisfaction of feelings, activities, and thoughts that are desired and meet emotional needs across different environments, including home, school, and society. These needs encompass belonging, love, success, security, empathy, freedom from guilt, and encouragement ([Sappington, 2011](#)).

Numerous pharmacological treatments are used to improve and treat MS, each with its own specific side effects. Therefore, the use of non-pharmacological methods that can complement treatment can potentially assist these patients ([Najafi Dolatabad et al., 2012](#)). Recently, studies on the quality of life of MS patients have gained attention from researchers and physicians ([Aghajani et al., 2017](#);

[Sirois et al., 2015](#)). The probable reduction in patients' quality of life is related to the characteristics of this disease during the most productive years of an individual's life, its uncertain and unstable progression, the distribution of symptoms throughout the central nervous system, and the lack of a definitive cure. On the other hand, for patients with MS and other localized diseases where treatment is not possible, the primary goal of treatment is to enhance the patients' quality of life ([Rahmani, 2020](#); [Teixeira-Quiros et al., 2022](#)).

The Life Enrichment and Enhancement Program is a comprehensive and improved form of systematic motivational therapy. Systematic motivational therapy focuses on examining an individual's goals. It posits that having a satisfactory life depends on possessing a compatible motivational structure, which leads to the selection and pursuit of appropriate goals, and achieving these goals results in life satisfaction. The purpose of group therapy is to help patients not only identify the most important goals in life but also discover new pleasurable incentives. If patients can replace their negative goals with positive and enjoyable ones, they will experience greater satisfaction in life ([Asadolahi et al., 2017](#); [Kazemini, 2013](#); [Vafaei Jahan et al., 2013](#)). Considering the importance of the topic mentioned in the previous paragraphs and the fact that no research has been conducted in this area so far, the current research aims to fill the existing research gap and perhaps provide some relief to patients suffering from MS. Therefore, this research intends to examine the impact of the life enrichment and enhancement program on women with MS in terms of improving emotional adjustment.

2. Methods and Materials

2.1. Study design and Participant

The current study was a quasi-experimental investigation employing a pre-test and post-test design with a control group. The statistical population included women diagnosed with Multiple Sclerosis (MS) visiting the Loqman Hakim Hospital and Imam Khomeini Hospital. After obtaining the center director's consent, an initial interview was conducted with these patients along with administering the Bell Adjustment Inventory. After scoring the questionnaires, 30 patients who scored higher (according to the clinical cutoff point) in emotional adjustment were selected as the research sample. These patients were then randomly assigned to either the experimental group (15 participants) or the control group

(15 participants). The experimental group underwent six sessions of the life enrichment and enhancement program, while the control group did not receive any educational program.

After explaining the necessity of the research to the managers of the MS center at Loqman Hakim Hospital and Imam Khomeini Hospital, necessary information about the current research was provided to the patients, and written consent was obtained from them. Initially, all participants completed the emotional adjustment questionnaire, and their scores were considered as the pre-test. They were then randomly placed into one of the two groups, experimental or control (each containing 15 participants). The experimental group underwent the life enrichment and enhancement program in six 90-minute sessions, while the control group did not receive any program during this period. The purpose of the life enrichment and enhancement program is to reduce stress and increase individuals' happiness. This program teaches principles that are applicable to everyone while recognizing that individuals are different and have their unique needs. Thus, the experimental group had the opportunity to evaluate their lifestyles in light of the principles of life enrichment and enhancement.

2.2. Measures

2.2.1. Emotional Adjustment

Bell Adjustment Inventory (BAI) was created by Bell in 1962 and consists of 160 questions across five subscales with 32 questions each (emotional, social, home, and health adjustment). Questions are answered with 'yes' or 'no', and each correct response is scored one, while incorrect responses are scored zero. Thus, the score range for each subscale is between 0 to 32. Lower scores in the Bell Adjustment Inventory indicate greater adjustment and vice versa. Aghapour Hasiri (2014) reported split-half reliability coefficients for the emotional adjustment subscale at 0.94, social at 0.93, educational at 0.96, and overall adjustment at 0.95; Ghasemi (1998) reported test-retest reliability coefficients for the five components of this questionnaire ranging from 0.70 to 0.93, and Cronbach's alpha from 0.74 to 0.93; Bell (1962) reported coefficients for the subscales of home, health, social, emotional, occupational, and the overall questionnaire at 0.91, 0.81, 0.88, 0.91, 0.85, and 0.94, respectively (Bell, 1963). Furthermore, this questionnaire has suitable discriminative validity for separating neurotic and normal individuals. In the current

study, only the emotional adjustment subscale was used, which achieved a Spearman-Brown corrected split-half reliability coefficient of 0.89.

2.3. Intervention

2.3.1. Life Enrichment and Enhancement Program

The Life enrichment and enhancement Program is a structured psychotherapeutic intervention designed for women with Multiple Sclerosis (MS). The program comprises six sessions, each tailored to address specific aspects of emotional well-being and life enhancement. These sessions aim to equip participants with skills to manage their emotional states, set and achieve personal goals, and improve their overall quality of life. By focusing on both individual needs and group dynamics, this program offers a comprehensive approach to enhancing emotional adaptation in patients with MS (Vafaei Jahan et al., 2013). Here is a detailed overview of the content covered in each session of the program:

Session 1: Welcoming, introductions, and getting to know other group members. Familiarization with the group's rules and regulations, expressing expectations and goals from the sessions. Introduction to the LEAP method by the instructor.

Session 2: Teaching the logic of the method, the role of emotions and their relation to problems, and elucidating the relationship between motivational structure and success.

Session 3: Identifying and defining key personal goals, implementing and reviewing the results of the goal matrix, decision-making regarding goals and situations, assisting in achieving goals with minimum stress and maximum happiness.

Session 4: Training on three methods for creating a happier lifestyle. Explaining knowledge management and long-term stress management strategies, and the relationship between a happier lifestyle and MS. Identifying sources of happiness and stress: (a) biological makeup, (b) daily pleasures and problems (bad stress vs. good stress), and (c) attitudes and beliefs. Finding goals and activities for adapting to the illness and methods to reduce daily stress, employing new methods to increase personal happiness and aid emotional adaptation.

Session 5: Effective planning and strategy development, reviewing plans for maintaining goals achieved during treatment, revisiting goals to increase the likelihood of achieving them for individual happiness. Focus on the quantity of goals, the quality of goals, and goal planning

based on the results of the emotional adjustment questionnaire.

Session 6: Review of previous sessions and structuring and planning regarding goals, especially those specific to enhancing the quality of life in patients. Defining goals in a specific, tangible, and achievable manner and concluding the program.

2.4. Data Analysis

Descriptive statistics and analysis of covariance were used for data analysis with SPSS-26.

3. Findings and Results

The experimental group's participants had a mean age of 34.50 years with a standard deviation of 4.87, and the

control group had a mean age of 33.25 years with a standard deviation of 4.22. In the experimental group, 8.3% of participants had a high school diploma, 16.7% had an associate's degree, 41.7% had a bachelor's degree, and 33.3% had a degree higher than a bachelor's, while in the control group, 25% had a high school diploma, 33.3% had an associate's degree, 33.3% had a bachelor's degree, and 8.3% had a higher degree. Additionally, in the experimental group, 25% of the participants were homemakers, 25% were self-employed, and 50% were employed, and in the control group, the same percentages applied for homemakers, self-employed, and employed participants.

The mean and standard deviation of the scores for both the experimental and control groups in the pre-test and post-test are presented in [Table 1](#).

Table 1

Descriptive Statistics of Pre-test and Post-test Scores of Emotional Adjustment in Experimental and Control Groups (N=30)

Variables	Group	Pre-test Mean	Pre-test Standard Deviation	Post-test Mean	Post-test Standard Deviation
Emotional Adjustment	Experimental	20.86	4.27	16.73	5.50
	Control	20.06	2.91	19.60	3.37

As seen in [Table 1](#), the mean and standard deviation of the emotional adjustment score for both groups in the pre-test and post-test phases are reported; the results indicate a decrease in emotional adjustment in the experimental group.

In this study, pre-test scores were recognized as intervening variables, and their effect on post-test scores

was confirmed using the analysis of covariance. The assumption of normal distribution was confirmed using the Kolmogorov-Smirnov test. The result of the Levene's test also indicated that the dispersion of pre-test scores of both groups was equal; therefore, the use of analysis of covariance was appropriate.

Table 2

Results of the Analysis of Covariance

Source	SS	Df	MS	F	p	Eta Squared	Power
Pre-test	262.70	1	262.70	63.35	<0.001	0.70	1.00
Group	50.26	1	50.26	12.12	<0.002	0.31	0.91
Error	111.96	27	4.14				
Corrected Total	379.46	29					

To examine the effectiveness of the life enrichment and enhancement program on the emotional adjustment of women with MS, as observed in the [Table 2](#), emotional adjustment in the experimental group improved. Thus, it is concluded that the life enrichment and enhancement program is effective in improving emotional adjustment. Furthermore, considering the eta squared value, it can be deduced that 31% of the variance in emotional adjustment is explained by the life enrichment and enhancement

program. A statistical power of 0.91 indicates a high level of statistical precision in testing the hypothesis.

4. Discussion and Conclusion

The primary objective of this study was to determine the effectiveness of the group educational program on Life enrichment and enhancement in improving emotional adaptation in women with Multiple Sclerosis (MS). The Life enrichment and enhancement program, according to

the researcher, focuses on attending to individual needs (helping individuals to select actions to satisfy fundamental needs), goal-setting and pursuit, and emphasizes the present. This program aids individuals in pursuing suitable goals, discarding unrealistic goals, and transforming their motivational structure from maladaptive to adaptive (Vafaei Jahan et al., 2013). The main objective of the educational-psychological group in this research was to increase awareness about the behavioral, health, and psychological consequences of MS. Another primary goal was to motivate participants to enter the adaptation and improvement stage (Flores & Georgi, 2005). Although educational-psychological groups inform patients about psychological issues, they do not aim for intrapsychological change; however, individual changes in thinking and feelings often occur. Educational-psychological groups are presented to help participants integrate information that will motivate them, guiding them towards more effective choices in their lives (Asadolahi et al., 2017; Julien et al., 2017). Additionally, this program can be used to neutralize patients' thoughts about their disease, increase their sense of responsibility for ongoing treatment, create changes in maladaptive behaviors (like communication with family and friends), and encourage behaviors leading to recovery (Kazemini, 2013; Kempen et al., 2015; Vafaei Jahan et al., 2013).

The research findings demonstrated the program's effectiveness in improving emotional adaptation compared to the control group. The life enrichment and enhancement educational program was effective in increasing happiness, reducing negative control feelings, situational confidence, and enhancing life satisfaction (Asadolahi et al., 2017). These results are consistent with the findings some previous studies (Asadolahi et al., 2017; Julien et al., 2017; Kazemini, 2013; Kempen et al., 2015; Vafaei Jahan et al., 2013). Therefore, the program positively impacts emotional adaptation through motivational restructuring, as demonstrated in this and previous similar studies. The effectiveness of the Life enrichment and enhancement program can be attributed to its role in improving life quality, increasing opportunities to achieve goals, filling life voids, and creating a happier lifestyle (Julien et al., 2017), thereby enhancing life satisfaction in individuals with MS. Additionally, the improvement in individuals' motivational structure from maladaptive to adaptive is thought to enhance their emotional adaptation (Julien et al., 2017). The use of other group members' experiences might also contribute to enhancing the quality of life and

improving emotional adaptation in MS patients; improvement in emotional adaptation could also lead to increased life satisfaction (Asadolahi et al., 2017). As a result, individuals expressing their feelings, beliefs, and thoughts in the group find a positive self-view, ending the internalization of emotions and feelings, leading to emotional adaptation and increased self-acceptance; this change in self-esteem allows them to find more logical ways to solve their problems and pursue their condition with greater peace (Coiro et al., 2016).

Therefore, for the first time, the life enrichment and enhancement program provided women with MS in the experimental group the opportunity to confront their problem directly and feel that they possess skills that, despite physical problems and illness, allow them to establish pleasurable connections (Brian, 2010). The decrease in withdrawal behaviors and the increase in emotional adaptation might be because, in group sessions, participants' practical and verbal participation in finding solutions was highly emphasized, and their desirable behaviors and responses were encouraged (Julian et al., 2017). This probably led to positive experiences and improved attitudes of women with MS towards others, enhancing emotional adaptation and reducing their withdrawal. Cognitive strategies for these patients represent a step towards correcting self-cognition, helping them to step out of the "failed individual" role. The selection of inappropriate social goals, such as patient withdrawal, can indicate non-acceptance or being overlooked by loved ones and family (Ryan, 2010).

Additionally, studies conducted in the field of well-being and meaning in life enhancement have shown that both of these concepts are related to individuals' perception of having significant goals in life and satisfactory progress in achieving them, as well as emotional adjustment. For instance, most people place great value on establishing and maintaining close and intimate relationships (Kazemini, 2013), and achieving these interpersonal goals is strongly related to the feeling of well-being in life enhancement. However, not all personal goals contribute equally to fostering good and desirable feelings. For example, progress in goals imposed by others or under the influence of social pressures is less likely to cause a good feeling than goals chosen by the individual themselves (Kazemini, 2013). According to Cox and Klinger (2002), the relationship between goals and cognition, emotions, perceptions, and behaviors are important in counseling interventions. They believe that cognitive, emotional, and

behavioral impairments are closely related to adjustment problems. That is, the more problems and impairments present in the pursuit of a goal, the more cognitive, emotional, and behavioral impairments appear in adjustment (Cox & Klinger, 2002). Whether the problem is depression, anxiety, physical illnesses, etc., effective counseling intervention requires examining and intervening in the goal pursuit process. Individuals' satisfaction in life largely stems from their belief in achieving their desired goals (Kempen et al., 2015). Additionally, an individual's ability to reach their goal may be enhanced or hindered by others. Therefore, support in achieving goals from significant others in an individual's life is an important factor that plays a role in enhancing the quality of life and satisfaction, or conflict in close relationships and emotional adjustment.

5. Limitations and Suggestions

In conclusion, it should be noted that when this approach is employed in a group setting, the advantages of group psychotherapy compared to individual psychotherapy, including member interaction, modeling, etc., are significantly enhanced. Indeed, through interaction with each other and via self-disclosure, receiving support, empathy, and also feeling a shared pain, group members can achieve a broader understanding and insight about themselves and their issues, and cope better with them. This finding should be considered preliminary, and the use of this method in the context of single-subject and experimental designs on a broader scale is essential. Moreover, the conclusions of this research should be interpreted with caution. Although the researcher has endeavored to control conditions as much as possible, control in human subjects research, especially in psychological treatment, is always challenging. Finally, it is suggested that the present research be replicated in experimental designs with other statistical populations. Additionally, it is recommended that other intervention methods proposed in the treatment of patients with MS be operationally developed and tested.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Authors' Contributions

Azizreza Ghasemzadeh contributed to the conceptualization of the research, participant recruitment, data collection, and the drafting and revision of the manuscript. Maryam Saadat played a key role in the design of the study, statistical analysis, and interpretation of the results. Mansoureh Rabbani Zadeh supervised the research, provided guidance on the methodology, and assisted in the interpretation of the findings. All authors reviewed and approved the final manuscript for publication.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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