

THE EFFECTIVENESS OF HOPE THERAPY ON QUALITY OF LIFE AND HORIZONTAL TIME ZONE ON MULTIPLE SCLEROSIS PATINTS IN TEHRAN CITY

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ABSTRACT

As one of the most important diseases of this century, M.S. or Multiple Sclerosis mostly affects the younger population especially young girls and women. This chronic inflammatory disease of the central nervous system has no known cure yet. Patients who suffer from multiple sclerosis experience some physical and psychological conditions which tend to lower their quality of life and horizontal time zone. The present research study attempted to assess the effectiveness of hope therapy in increasing the quality of life and horizontal time zone of M.S. patients. This quasi-experimental study had a pre-test, post-test design with a delayed post-test. Participants were 76 M.S. patients chosen through convenience sampling from the population of the study which were all members of the M.S. Society of Iran. Participants, then, filled out the WHO Quality of Life and Wilde's horizontal time zone questionnaires. 36 patients with low levels of quality of life and horizontal time zone were selected and randomly assigned to experimental and control groups. Both experimental and control group participants filled out the quality of life and horizontal time zone questionnaires prior to and immediately after the intervention with the experimental group filling out the questionnaires once again as a delayed post-test. Snyder's Hope Therapy (2000) was used as the intervention in this research study which took the form of 8, 90-minute sessions in the M.S. Society of Iran. Data was analyzed through analysis of covariance and analysis of variance. Findings revealed that after the therapeutic intervention the quality of life and horizontal time zone increased significantly in the experimental group patients and there was a meaningful difference between their quality of life and horizontal time zone levels and those of the control group patients. The delayed post-test also proved the intervention to have constructive long-term effects. Conclusion: Hope therapy can be utilized as an effective interventional method in order to increase quality of life and horizontal time zone in M.S. patients

KEY WORDS: Multiple Sclerosis, hope therapy, quality of life, horizontal time zone

INTRODUCTION

Psychologists, in their studies and surveys of behavioral disorders and social problems in the recent decades, have concluded that many of such disorders and problems are rooted in wrong analyses and conception of personal issues, feeling lack of control and competency to face hard situations, and no preparation to deal with life problems and hardships. The recently introduced school of positive psychology focuses on increasing optimism and happiness and on improving quality of life. The founder of this school, Seligman M.E.P argued that positive emotions, engagement, and meaning are of the factors in having a healthy life and overcoming mental disorders. Instead of focusing on shortages and limitations or detecting and removing psychological trauma, Seligman's approach focuses on boosting happiness and health and the effective factors in happiness. Positive psychology is not limited to pathology but rather is more focused on powers, capabilities, and merits of the individual (Seligman, 2002). Introduction of the theory of hope by Snyder, Irving and Anderson (1991) and a scale to measure hope triggered several studies on the relationship between different variables of psychological and physical health. Psychotherapy researchers have piled up evidences in the recent decades indicating that hope is common feature of many treatment techniques. This model of hope is entailed with the belief that "their problems can be solved and their future surely becomes better and better." Hope is one of the structures emphasized by positivist psychologists. Snyder elaborated on the concepts of this structure, which is very close to optimism, and held that there is a significant relationship between optimism and hope (Snyder and Peterson, 2000). According to Snyder et al. optimistic and hopeful individuals enjoy healthier life and they are better in following the physician's prescription when they become ill. Adults who are highly hopeful experience failures in their life not less than others, however, they are equipped with beliefs that help them dealing with challenges and hardships. They keep repeating phases such as "I can handle it" and "I won't give up" with themselves. They experience less intense

negative emotions when they encounter obstacles in their way and flexibly choose reasonable achievable goals (Snyder, 2000). Less hopeful people encounter irremovable obstacles and their emotions are almost a predictable sequence from hope to anger, from anger to no feeling. On the other hand, hopeful people tend to experience small, clear, and comprehensible issues when they face with issues during adulthood (Snyder, 2000). Chronic disorders refer to a wide concept of incapable terms that cover different types of disorders for which no effective treatment exists and all can be done is to control and prevent them from expansion. The fact that there are different definitions for chronic diseases indicates the complicated nature of them. WHO reports that “long-term quest to control and manage diseases” is the main feature of chronic disorders’ effect on quality of patients’ life.

Regarding the concept of chronic diseases, the main treatment approach is rehabilitation. The term “rehabilitation” comes for Greek and means “once again.” The International Council of Rehabilitation defined rehabilitation in 1994 as “complete recovery of physical, psychological, social, professional, and economic potential powers by one who suffers injuries and to have a fruitful life.” Rehabilitation services focus on quality of life of the patients and changes different aspects of quality of life. Multiple Sclerosis is one of most common central nervous system, which is classified as a neurologic disorder in which the insulating cover of nerve cells in brain and spinal cord are damaged (Burks, J.S. 1999). The myelin insulating cover enables fast and easy transfer of nervous signals. When myelin is damaged, the nervous signal transfer is halted. The disease is more common between 20 and 40 years old and its rate among women is 1.3-1.4 times of that of men. It is a chronic and relapse disease (builds up over time).

Based on the available evidences, MS probably is a multi-pathogenic disease so that by being imposed to one or several environmental factors, people with vulnerable genes sustain demyelination and axon damage. The damage is done by body’s immunity system (Cook, 2006). The phenomenon of demyelination is destruction of myelin cover of nervous cell. The myelin damage at central and peripheral nervous system is a progressive and invasive process. MS is a chronic disease featured with inflammation and damage of axons of specific nervous paths, demyelination, and irrecoverable atrophy pathologic changes of central nervous systems. Since, damages to myelin cover is caused by immunity system of the patients, MS is an immunity system disease. Psychological disorders, especially nervous pressure, anxiety, and depression are of the factors effective in development of the disease. In addition to biological factors, being diagnosed with MS as a chronic and debilitating disease following by family, professional, educational, and social outcomes all add to the psychological problems of the disease. Psychological problems play critical role in intensification of the symptoms and attacks of the disease. In addition, physical and psychological symptoms of MS patients influence their quality of life and add to severity of the patient’s condition.

MS is an autoimmune and confusing disease of central nervous system. Pathological symptoms of inflammation and demyelination (damage to myelin cover of nerve cells) blocks nervous pulses in the brain and spinal cord. The demyelination mechanism of MS is not clear. Modulating immune system is also effective in delaying progress of the disease, while there is no definite cure of the disease (Lavi and Constantinescu, 2005). MS is the disease of the century and large population of young girls and boys develop the disease. The causes of the disease are not known and different theories have been proposed by researchers. In addition, there is no definite cure for the disease. It is a viral disease known as autoimmune with different symptoms with consequence. Motor limitations, stress, psychological-mental and neural disorders, depression, decrease of abilities, and debilitation are some of the main consequences of the disease with dire effects on personal and social life of the patient. So that, many MS patients follow secluded and isolated life.

MS is the main non-traumatic cause of nervous disability among the youth and middle age adults so that more than 2 million in the world suffer from the disease (Grossman and Yousem., 2003). Among the different causes of MS are psychological and mental pressures. Psychological factors are effective in development of the disease and number of attacks. The patient experiences several psychological problems after developing MS and there are several factors in emergence of such problems including:

MS can have deep effects on social activities of the patient. Performance changes such as motor limitation, early fatigue, and loss of control on bladder and intestine functions problematize many social and professional functions and consequently influence the patient’s relationships with close and intimate friends (Halper, 2007).

The mere fact of being diagnosed with MS induces great deal of anxiety and depression and decreases quality of life. The patient’s conditions after being diagnosed are unpredictable and the patient has to cope with uncertainties in their life. The MS patient finds out that many of self-concept aspects are fading away so that before creating a new self-

concept, the patient experiences a mourning period (Larocca, 2004). Severity of disease also is related to different psychological conditions of the patient such as hopelessness, anxiety, depression, and bewilderment.

Pain is a common experience among MS patients and recent studies have shown that pain plays an important role in quality of life and psychological health of the patient (Archibald *et al.*, 2007). That is, higher severity of pain leads to poorer performance such as degradation of general health, vitality, psychological health and social performance (Forbes *et al.*, 2006).

Even when the symptoms fade away and the disease goes into remission period, the patient experiences anxiety and uncertainty about the unclear future with the disease. This situation leads the patients toward chronic anger, sadness, and fear. Hope therapy is based on Snyder's hope theory and the thought rooted in behavioral-cognitive treatment, solution-based and narrative therapy (Snyder, 2000). Snyder maintained that hope therapy is a proactive process, which is aimed mainly to teach the patient to diagnose their problems proactively and keep trying to solve their problems by setting goals. He believed that all people have the capacity for hopeful thoughts and can improve their capacities in this regard.

Research results have relatively highlighted effectiveness of hope therapy on quality of life; however, there are no results that specifically indicate effectiveness of hope therapy on the MS patient's horizontal time zone. In light of this, the authors have tried to answer "if group hope therapy intervention is effective on quality of life and horizontal time zone of MS patient?"

MATERIALS AND METHODS

Research questions

1. Is hope therapy effective on quality of life of MS patients?
2. Is hope therapy effective on quality of life of MS patients during remission period?
3. Is hope therapy effective on horizontal time zone of MS patients?
4. Is hope therapy effective on horizontal time zone of MS patients during remission period?

Hypotheses

1. Hope therapy is effective on quality of life of MS patients.
2. Hope therapy has long standing effect on quality of life of MS patients during remission period.
3. Hope therapy is effective on horizontal time zone of MS patients.
4. Hope therapy has long standing effect on horizontal time zone of MS patients during remission period.

Methodology

The study is an applied work conducted through quasi-experimental method with pretest, posttest, and follow up design and experiment and control groups. After sampling, the participants were randomly grouped in the experiment and control groups. Similarity of the both groups regarding age, education, and term of disease was surveyed. In addition, the participant's points of WHO's quality of life test and Wilde's horizontal time zone were obtained. The experiment group received hope therapy intervention and the control group received no intervention. The participants of the both groups underwent the posttest immediately after completion of the interventions. One month afterward, the experiment group participants were tested to measure stability of the effects of treatment.

Study population, sample group, and sampling

Study population was comprised of all the MS patients referred to Iran Association of MS in Tehran (n= 18000). The participants were selected through convenience method. MS patients in the association who expressed their desire to participate in the study and met the criteria of participation took the quality of life and horizontal time zone tests and then 76 participants with highest results were selected and randomly classified in experiment and control groups.

Participation criteria

1. Diagnosed with MS and membership of Iran MS association;
2. No symptom of acute psychological disorders;
3. No record of drug addiction;
4. Holder of junior high school diploma at least;
5. Not a member of Psychological Health Field's treatment and educational courses; and
6. Expressing desire to participate in the study.

Research tools

WHO quality of life (WHOQOL) test to assess quality of life

WHOQOL was introduced in 1991 aimed to create an international and culture-independent tool to evaluate quality of life. The tool (questionnaire) measures the individual's perceptions of value and cultural systems, personal goals, standards, and worries. WHOQOL is used widely in the world for survey and experimental purposes (WHO).

Short WHOQOL is comprised of 26 items based on the longer version with 100 items. The questionnaire covers four wide areas including physical health, psychological health, social relations, and the environment. In addition, the questionnaire measures general health. The items are designed based on five-point scale and higher points indicate high quality of life. Surveys of the short version of WHOQOL have shown that the obtained points in the four key areas are highly identical to those of long version of WHOQOL. As with statistical features of short version of WHOQOL, content and differential validity, internal reliability (Cronbach's alpha: physical health = 0.80; psychological health = 0.76; social relations = 0.66; environment: 0.80) and replication reliability were acceptable.

Wilde horizontal time zone

conducted a study on students of Karaj Islamic Azad University to survey applicability, validity, reliability, norm extraction features of horizontal time zone questionnaire. The participants were selected through multi-stage random cluster method. The questionnaire was filled out by 600 students and its reliability based on Cronbach's alpha was obtained 0.718. In addition, retest reliability was 0.87. To test structure validity of the questionnaire, main element analyses method was used. Quality of sampling was obtained 0.846 and significance of Bartlett's test indicated suitability of questionnaire for factor analysis. Through factory analysis with Promax cycle, 4 factors (present value, planning for future, time pressure, and future value) were extracted, which totally explained 36.5% of the variance. Therefore, validity and reliability of the horizontal time zone to measure hope for life was confirmed (Wild, 2000).

RESULTS AND DISCUSSION

Means and standard deviation of quality of life and horizontal time zone are listed in Table 1 & 2.

Table 1- Mean and SD of quality of life of the sample group

Elements	Experimental group (n =12)						Control group (n = 12)					
	Pretest		Posttest		Follow up		Pretest		Posttest		Follow up	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Physical	37.54	7.70	39.55	6.06	38.59	5.88	35.98	4.42	36.82	3.74	35.87	3.78
Psychological	36.46	5.43	41.46	6.61	40.98	5.90	35.82	6.96	36.64	6.71	35.98	6.13
Social relations	28.72	4.10	30.12	4.50	29.55	4.11	27.75	4.89	28.91	5.92	27.91	4.52
Environmental	17.42	3.44	20.42	3.26	18.39	3.07	16.82	4.04	18.18	1.89	16.88	2.86

As listed in the table above, pretest, posttest, and follow up mean points of physical health for the experiment group are 37.54, 39.55, and 38.59 respectively. These figures for the control group are 35.98, 36.82, and 35.87 respectively.

As with psychological health, pretest, posttest, and follow up mean points for the experimental group are 36.46, 41.46, and 40.98 respectively. These figures for the control group are 35.82, 35.64, and 35.98 respectively. Concerning social relations health, pretest, posttest, and follow up mean points for the experimental group are 28.72, 30.12, and 29.55 respectively. These figures for the control group are 27.75, 28.91, and 27.91 respectively. As with environmental health, pretest, posttest, and follow up mean points for the experimental group are 17.42, 20.42 and 18.39 respectively. These figures for the control group are 16.82, 18.18, and 16.88 respectively.

As listed in the table above, pretest, posttest, and follow up mean points of future value for the experimental group are 41.18, 45.72, and 4.42 respectively. These figures for the control group are 37.17, 36.07 and 4.42 respectively.

As with represent value, pretest, posttest, and follow up mean points for the experimental group are 30.18, 27.03 and 25.76 respectively. These figures for the control group are 38.93, 37.12, and 39.37 respectively.

Table 2- Mean and SD of horizontal time zone of the sample group

Elements	Experimental group (n =12)						Control group (n = 12)					
	Posttest		Follow up		Posttest		Follow up		Posttest		Follow up	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Future value	41.18	4.83	45.72	5.08	44.85	4.79	37.17	6.05	36.07	4.32	37.01	4.42
Present value	30.18	5.53	27.03	8.11	25.76	8.11	38.93	7.22	37.12	7.63	35.37	7.29
Planning for future	33.64	6.41	41.81	4.73	41.32	4.59	32.98	4.65	33.02	6.2	33.09	4.12
Time pressure	31.09	6.11	31.01	8.96	32	9.27	33.59	4.33	32.31	4.61	32.69	4.39

Concerning planning for future, pretest, posttest, and follow up mean points for the experimental group are 33.64, 41.81, and 41.32 respectively. These figures for the control group are 32.98, 33.02 and 33.09 respectively. As with time pressure, pretest, posttest, and follow up mean points for the experimental group are 31.09, 31.01 and 32.00 respectively. These figures for the control group are 33.59, 32.31, and 32.69 respectively.

Hypothesis one: Hope therapy is effective on quality of life of MS patients. To test the hypothesis, one-way one-variable covariance analysis was used

Table 3- one-way one-variable covariance analysis

Cause of Variance	SS	df	MS	F	Eta squared
Pretest	4774.26	1	4774.261		
Posttest	2860.34	1	2860.342	17.88**	0.485
Error	3039.19	22	159.958		
Total	10541.8	23			

< 0/01 P^{**}

Covariance analysis results indicate that there is a significant relationship between quality of life posttest point between the experiment and control groups after controlling quality of life pretest point ($F(1,22)=17.88$, $p<0.01$). F value indicates that hypothesis of similarity of mean point of the control and experimental group is not supported. In other words, there is a significant difference between the experiment and control groups after controlling the effect of pretest variable. Eta squared indicates that the 0.48% of the variation of the dependent variables is explained based on the experiment group.

Hypothesis two: Hope therapy has long standing effect on quality of life of MS patients during remission period. The hypothesis was tested using variance analysis with frequent measurements.

Table 4-variance analysis with frequent measurements (quality of life)

Cause of Variance	SS	Df	MS	F	Eta squared
Inter-groups	11987.39	10	1198.739		
Intra-groups	4102.66	24	186.485		
Experiment (pretest, posttest, and follow up)	2735.3	2	1367.667	20.005**	0.667
Remaining	1367.33	22	68.367		
Total	16090.06	32			

< 0/01 P^{**}

Variance analysis results indicate that there is a significant relationship between the mean points of three replication of the experiment ($F(2,22)=20.005$, $p<0.01$). F value indicates that hypothesis of similarity of mean point of the control and experimental group is not supported. In other words, there is a significant difference between the experiment and control groups. Eta squared indicates that the 0.66% of the variation of the dependent variables is explained based on

the experiment group.

Mean points of three replications of the experiment were pair-wise compared using t-test for two dependent groups.

Table 5- t-test for two dependent groups

Experiment a	Experiment	Ave. of differences	Difference SD	Mean SD	t _(df=11)
Pretest	Posttest	-11.41	14.81	4.47	-4.55**
Pretest	Follow up	-7.37	11.15	3.36	-5.19**
posttest	Follow up	4.04	8.16	2.46	1.64

< 0/01 P^{**}

Two dependent groups t-test shows that there is a significant difference between pretest and posttest and between pretest and follow up. However, there is no significant relationship between posttest and follow up.

Hypothesis three: Hope therapy is effective on horizontal time zone of MS patients.

To test the hypothesis, one-way one-variable covariance analysis was used

Table 6- one-way one-variable covariance analysis (horizontal time zone)

Eta squared	F	MS	df	SS	Cause of Variance
		488.882	1	488.882	Pretest
0.427	14.83**	410.926	1	410.926	Posttest
		29.035	20	551.664	Error
			23	1193.455	Total

< 0/01 P^{**}

Covariance analysis results indicate that there is a significant relationship between pretest point of horizontal time zone after controlling pretest point of quality of life ($F(1,22)=14.83$, $p<0.01$). F value indicates that hypothesis of similarity of mean point of the control and experimental group is not supported. In other words, there is a significant different between the experiment and control groups after controlling the effect of pretest variable. Eta squared indicates that the 0.42% of the variation of the dependent variables is explained based on the experiment group.

Hypothesis four: Hope therapy has long standing effect on horizontal time zone of MS patients during remission period.

The hypothesis was tests using variance analysis with frequent measurements.

Table 7-variance analysis with frequent measurements (horizontal time zone)

Cause of Variance	SS	df	MS	F	Eta squared
Inter-groups	1860.909	10	186.091		
Intra-groups	871.333	24	76.634		
Experiment (pretest, posttest, and follow up)	583.697	2	564.733	20.29**	0.67
Remaining	287.636	22	27.829		
Total	2732.242	32			

< 0/01 P^{**}

Variance analysis results indicate that there is a significant relationship between the mean points of three replication of the experiment ($F(2,22)=20.29$, $p<0.01$). F value indicates that hypothesis of similarity of mean point of the control and experimental group is not supported. In other words, there is a significant different between the experiment and control. Eta squared indicates that the 0.67% of the variation of the dependent variables is explained based on the experiment group. Mean points of three replications of the experiment were pair-wise compared using t-test for two dependent groups.

Table 8- t-test for two dependent groups (horizontal time zone)

Experiment a	Experiment	Ave. of differences	Difference SD	Mean SD	t _(df=11)
Pretest	Posttest	-9.47	6.91	2.11	-4.49**
Pretest	Follow up	-7.84	6.11	1.83	-4.28**
posttest	Follow up	1.64	1.31	0.39	1.39

< 0/01 P^{**}

Two dependent groups t-test shows that there is a significant difference between pretest and posttest and between pretest and follow up. However, there is no significant relationship between posttest and follow up.

DISCUSSION AND CONCLUSION

Effectiveness of hope therapy on quality of life and horizontal time zone of M.S patients was surveyed. The study was a quasi-experimental study with posttest, pretest and follow up. Study population was all MS patients living in Tehran City. Two groups (experimental and control groups) were formed randomly by the participants who had been selected by convenience sampling. After pretest, the experiment group received 8 sessions of hope therapy. For data analysis, one-way one variable covariance and variance analysis with frequent measurement was used. Results concerning hypotheses one and two showed that hope therapy was effective on quality of life of MS patients and this effect becomes more profound and stable over time. This result is consistency with who showed that more hopeful patients experienced higher quality of life so that hope was an effective factor in how well a patient copes with their condition, stress, and psychological problems.

Results regarding hypothesis three showed that hope therapy is effective on horizontal time zone and this effect increases and becomes more stable over time. Results of this study regarding stability of the effect are consistent with As with hypothesis three and four, results showed effects of hope therapy on having brighter horizontal time zone and higher perceived value of future among MS patients. This study was done in light of the facts that increase of perceived value of future comparing with present time is effective on reducing risky behaviors such as accidents, smoking, drug addiction, anger, unhealthy behavior and development of healthy safety culture over generations; there is a relationship between hope and future perspective; and increasing seriousness of MS disease in people's life and its effect on life expectancy among the patient. The emphasis of hope therapy is on boosting positive thinking and hope and training MS patients how to do these. In this way, the patients could employ the strategies after training sessions and develop positive habits. Emphasis of hope therapy treatment protocol in a 8-session course in this study was on hope, positive thinking, and its effect on health, changing mental images, working on positive emotions, and accepting negative emotions, determining goals and like that. We tried to create a positive environment and work on positive emotions by motivating the patients to adopt positive attitudes toward life and hope. Through this longer life expectancy, increase of quality of life, assigning more value to future by MS patients and consequently more chance to adopt behaviors and social relations toward better situation were expected. Conducting similar studies with participants of different age groups from different population is recommended. In addition, designing new training packs to motivate the patients is recommended. Shortening intervention session time is also recommended. Finally, given the positive effects of attending intervention courses with the groups of peers on quality of life, the MS Society and other supporting bodies are recommended to hold such courses for peer groups of the patients.

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