

# Effectiveness of positive thinking skills on Life expectancy and self-concept in patients with multiple sclerosis

Maryam Talebloo (1)

Gholamreza Zakeripour (2)

(1) Department of Psychology, Zanjan Branch, **Islamic Azad University**, Zanjan, Iran.

(2) Department of Research Institute of Police Science and Social Studies NAJA, Tehran, Iran.

## Corresponding Author:

Dr. Gholamreza Zakeripour

Assistant Professor, Health Psychology

Department of Research Institute of Police Science and Social Studies NAJA,

Tehran, Iran

Cell phone: 0098-921- 250- 3607

Tel: 0098-26-325-31731

FAX: 0098-26-325-31731

Email: Zakeripour2016@gmail.com

## Abstract

Studies have shown that the prevalence of MS disease has an ascending trend. These patients due to the illness have a poor self-image and life expectancy. Accordingly, this study was conducted to determine the effectiveness of positive thinking skills on Life expectancy and self-concept in patients with multiple sclerosis. The research method was experimental and was a pretest-posttest design with a control group. The study sample was composed of 30 female patients with multiple sclerosis under the MS Society in Tehran. In a preliminary study, they had gained a weak score in the Miller's life expectancy (1988) and Beck's self concept questionnaire (1990). The samples, by using simple random sampling method, were divided into two experimental and control groups each of 15 participants. The experimental group, at 8 sessions for 90 minutes (2 sessions per week), received training on positive thinking skills and the control group did not receive any education and treatment. One week after the training session, a Post-test was performed in both groups concurrently, but separately. The results of analysis of covariance showed that positive thinking skills training is effective on enhancement of self-concept and life expectancy in the experimental group ( $p < 0.05$ ). Conclusion: According to the results of this method it can be used to increase self-perception and life expectancy ( $p < 0.05$ ).

**Key words:** hope to life, multiple sclerosis, positive thinking skills, self- perception

Please cite this article as: Maryam Talebloo ,Gholamreza Zakeripour. Effectiveness of positive thinking skills on Life expectancy and self-concept in patients with multiple sclerosis *World Family Medicine*. 2017; 15(10):17-22. DOI 10.5742/MEWFM.2017.93131

## Introduction

Multiple sclerosis is a chronic, progressive disease of the central nervous system with complications and debilitating symptoms (Sahebalzamani, Zamiri, Rashvand 2012) and 2.5 million people worldwide are suffering from it (Madan, Pakenham, 2014). This disease has the unpredictability of cognition (Soundy et al, 2012), and its prevalence according to the World Health Organization, in order respectively for Europe, the Eastern Mediterranean, America, Ocean quiet West, South East Asia and Africa is 80, 14.9, 8.3, 5, 2.8 and 0.3 people per hundred thousand population (World Health Organization, 2008). Prevalence of the disease still has an increasing bias so that studies show its prevalence has increased from 1.01 in 2008 to 1.32 deaths per hundred thousand population in 2013 (World Health Organization, 2013). The prevalence of multiple sclerosis in Iran based on data from 12 provinces before the 2011, was reported as 41.81 people per hundred thousand population (Shahbeigi et al, 2012), which represents a high rate in Iran. The disease often occurs between the ages of 20-40 years old (Massoud, Mohammad and Ahmad, 2009) and its prevalence in women is two times more than men (Madani et al, 2008).

Early onset of this disease and higher levels of disability from it, causes the patient to be associated with enormous psychological pressure (Beer et al., 2016) among which can be mentioned the incidence of visual disturbances, pain, urinary incontinence and weakness in these patients (Omran et al., 2012) This affects the person's ability to participate effectively in the family and society (Hamidizadeh et al, 2009).

So it is not surprising that these patients, compared to healthy subjects, experience a higher rate of psychological distress (Madan, Pakenham, 2014). Hope is an essential element in chronic diseases that can help in compliance

with the patient's disease (Ghazavi et al., 2015) and living with MS requires continuous adaptation to cope with the unpredictable symptoms (Anderson, Turner & Clyne, 2016). Hope is an important resource for people with MS to cope with multiple lesions of this disease. Mechanisms that hope, through its impact on health, acts through are direct effects and protective effects of stress. In accordance with the mechanism of direct effect, hope to work independently and in accordance with the patient's place is a protective mechanism against stress, and refers to the protective effect of hope against the adverse effects of extreme stress (Madan, Pakenham, 2014). Ironically, people with chronic diseases, often show a low self-concept (Gerhardt, 1989) which is also evident in MS patients (McCabe 2005; Masoodi et al, 2013; Wright & Kiropoulos, 2016). Self-concept is an individual's perception of identity, social skills, physical attractiveness, ethical issues and the adequacy of their working life (Fitts & Warren, 1996).

Several studies in patients with MS, have confirmed the impact of educational interventions on promoting hope (Finucane, 2004; Bagheri et al, 2012; Ghara Zibaei et al, 2013) and self-concept (Masoodi et al 2010; Masoodi et al, 2013) in these patients. One of the educational practices that seems to have a favorable impact of increased life expectancy and self concept, is positive thinking skills. Positive thinking skills, is a teaching method that eventually creates a good description of the individual and the world in which they live. The result of this favorable impression, is a more consistent and better treatment of the individual (Ebadi et al., 2009).

In reviewing databases a study to evaluate the effectiveness of positive thinking skills training on life expectancy and self concept in patients with multiple sclerosis was not found; but the results of some studies have shown that positive thinking skills training to increase the life expectancy of women without husbands (Ebadi et al., 2009) and mothers with children with special needs (Bolghan, Hassan & asghari, 2012) was impressive.

Also, the training has positive effects on enhancement self-concept of families with children of prisoners (Riyadi, Chusna & Harist, 2015) and self-concept of students with learning disabilities (Short, 2007) However, so far it has not been studied in patients with MS. Accordingly, due to the need for improvement in life expectancy and self-concept in patients with MS, this study was conducted to determine the effectiveness of positive thinking skills on Life expectancy and self-concept in patients with multiple sclerosis.

## Methods

### Research design

This study is in the class of quasi-experimental research. The research design of the study is in the form of two groups (experimental and control groups) and includes two pre-tests and post-test. The independent variable was the positive thinking skills training on Life expectancy and self concept in patients, which was applied only in the experimental group, and its effects were compared

in the field of post-test scores of the experimental group compared to the control group.

### Participants

This study population was comprised of female patients with multiple sclerosis who in 2016 were under the MS Society in Tehran. In this study 34 participants (due to risk of loss in the group of participants) who have a low life expectancy and self concept and who had the other criteria for entry into the study, were selected by using random sampling method and they were divided into two groups: experimental (n = 17) and control (n = 17). Inclusion criteria included female gender, education graduates, observed a weak score in the Miller's life expectancy (1988) and Beck's self concept questionnaire (1990), Lack of other physical ailments (such as cardiovascular diseases, cancer, etc.) and other severe psychological disorders (such as major depression, personality disorders, etc.) and a willingness to cooperate. Exclusion criteria were considered as the occurrence of any physical disorders or serious mental issues during the intervention.

### Measurement

#### 1. Life Expectancy Questionnaire (MHS)

Miller's life expectancy (1988) is a diagnostic test. This test consists of forty-eight aspects of the mode of hope and helplessness and the clauses it contained were selected based on open or hidden protests behavior in people with hope or without hope. In every aspect that was representative of the behavior, Sentences were written as follows; 1 = strongly disagree, 2 = disagree, 3 = neutral, agree = 4 And 5 = strongly agree. Total scores showed hope or the lack of hope. In this test, the scores ranged from 48 to 240.

If a person gained a 48 score, they were considered to be quite helpless. A score of 240 indicated the highest hope. Cut-off point was at the score of 100. The validity of the Iranian version of the Miller's questionnaire is obtained with two methods, test-retest and split-half, 0.89 and 0.9 (Gholami & Soudani, 2009). Also this test has a good criterion validity (Hoseinian, 2007; Hoseini, 2006). In this study, the reliability of this instrument was proved by using Cronbach's alpha (0.78).

#### 2. Beck's self concept questionnaire (BSCT)

This test is a self-report measure of the negative attitude to self and has 25 items. At the end of each question there are 5 options that participants will choose one of and thus will be achieved a score between 1 and 5. Scoring in some questions is direct and reversed in others. Scores are added together in the 25 questions and eventually earn a score between 25 and 75. Interpretation of scores is as follows: A score between 25 and 50: is weak negative attitude to oneself, a score between "50 to 75": is the average negative attitude to oneself, Score higher than 75: is strong negative attitude to oneself. Beck (1990), obtained the reliability of the questionnaire using internal consistency at 0.8 and by using retest 0.88 that shows the excellent reliability of this scale. Also its concurrent validity has been reported as 0.55 (Begay, 2015). Examine

construct validity of the questionnaire was reported in the all indicators revealing a score higher than 0.4 and for this questionnaire and Cronbach's alpha coefficient obtained 0.79 (Mollazamani and Fathi-Ashtiani, 2009). Cronbach's alpha was calculated, in the study and was proved at 0.79.

### Methods

After selecting a sample and random assignment of participants in the experimental and control groups, was completed. Life expectancy and self concept questionnaires were completed by patients participating in the study (experimental and control groups). Then training sessions in the field of positive thinking skills were held for the experimental group. The experimental group participated in 8 sessions (2 sessions per week) of positive thinking skills training; at the same time the control group

did not receive any any training and therapy. During the training sessions 2 participants from the the control group withdrew so training sessions continued at 15 patients. A week after the training of positive thinking skills in the the experimental group, post-test was conducted. In order to attain collaboration of the control group, they were promised similar training sessions. A package of the positive thinking skills training was extracted from optimism and positivism book applications (Barati Sade and Sadeghi, 2011). A summary of positive thinking training sessions, is presented in the Appendix.

### Data analysis

In this study as a result of the pretest - posttest, Data were analyzed using descriptive statistics and inferential statistics (analysis of covariance). SPSS 21 software was used for this purpose.

## Results

Information about the individual characteristics of participants are shown in Table 1. The results showed that there was no statistically significant difference between the level of education variables, marital status, age, and duration of the disease affection in both experimental and control groups.

**Table 1: personal and medical characteristics of participants**

Variable	Control group		p	
	Number (percent)	Number (percent)		
education level	Diploma	2 (0.13)	2 (0.13)	0.56*
	Associate Degree	3 (0.20)	4 (0.27)	
	Masters	10 (0.67)	9 (0.60)	
marital status	Single	9 (0.60)	8 (0.53)	0.66*
	Married	6 (0.40)	7 (0.47)	
Age (year)	mean (SD)	32.3±7.2	30.9±8.3	0.42**
duration of the disease affection (year)	mean (SD)	4.83± 4.6	5.21± 3.8	0.33**

Chi-square test, \*\*independent t-test

The descriptive findings related to pre-test and post-test are shown in Table 2 for the dependent variables in the experimental and control groups and the results in Table 2 revealed that scores of experimental group in the the post-test, increased in both variable life expectancy and self concept from the Pre-test.

**Table 2: Mean and standard deviation of life expectancy and self concept scores in the experimental and control groups**

Variable	Examination group		Control group	
	pre- test	Post-test	pre- test	Post-test
life expectancy	6.73± 8.06	69.46± 11.24	58.86± 5.70	54.46±5.55
self concept	32.53 ±5.23	33.73± 5.99	35.26± 7.11	32.00 ±5.94

According to the results presented in Table 3, both assumptions of analysis of covariance means homogeneity of variances and equal error variance-covariance matrix, is proved ( $p>0.05$ ).

**Table 3: Test of Levine and Box to examine the assumption of multivariate regression analysis**

P	Df <sub>2</sub>	Df <sub>1</sub>	F	Variable	Test
0.092	28	1	3.044	life expectancy	Levine Test
0.188	28	1	1.820	self concept	
0.083	14.11	3	2.224	---	Box's M

In Table 4 the Results Of the multivariate analysis of covariance (Wilks Lambda) with regard to life expectancy and self concept are displayed. Between the experimental and control groups in at least one of the the dependent variables (life expectancy and self concept in patients with MS) there is a significant difference ( $P < 0.01$ ;  $F_{2,25} = 11.662$ ; Wilks Lambda = 0.517)

**Table 4: Multivariate analysis of covariance at control pre-test and post-test scores**

Power test	Effect size	Error df	df	F	Value	
0.987	0.482	25	2	11.662**	0.517	Wilks Lambda

\*\* $p < 0/01$

Table 5 shows the results of univariate analysis of covariance in both control and experimental groups after adjustment for pretest scores, displayed for each of the variables life expectancy and self concept. The results show that by eliminating the effect of pre-test variable, it has been estimated between scores of the Life expectancy ( $p < 0.01$ ) and self concept ( $p < 0.05$ ) there is a significant difference in terms of membership.

**Table 5: univariate analysis of covariance after adjustment for pre-test scores**

Power test	Effect size	F	Mean Square	df	Sum of square	dependent variables
0.994	0.442	21.382**	1446.458	1	1446.458	life expectancy
0.625	0.180	5.945*	96.896	1	96.896	self concept

\* $p < 0/05$ ; \*\* $p < 0/01$

Thus, according to the mean difference in Table 2 and the results reported in Table 5, it can be concluded that positive thinking skills training increased life expectancy and self concept in patients with MS.

## Discussion

The findings showed that positive thinking skills training can significantly enhance the *Life expectancy and self concept* among patients with multiple sclerosis. The same research findings support the results obtained in this study, so that the findings have revealed that *positive thinking skills* in depressed women's life expectancy can be increased (Saman Moghadam, 2015); as there can be a decrease in marital disputes among couples (Ashraf Hafez et al., 2012) and improved life expectancy among women with no spouse (Ebadi et al., 2009) and in accordance with the findings of this study, female patients with MS, learning these skills an increase in life expectancy is effective.

In order to explain the findings of the results obtained in some of the research attention is given *Training optimism* in the people's adherence to self-care behaviors (Jaser,

2014). *Enhancement well-being and decrease depression* (Boiler et al, 2013), *Enhancement optimism* and health behaviors (Terrace, 2013) is impressive. These findings are among the reasons that justify the effect of training on positive thinking to enhance life expectancy in patients with MS.

Contrary to Groopman (2005) where Passive character to hope is considered a placebo, Schneider (1994) argues that hope is an active feature that includes purpose, power planning and determination to achieve the goal, according to the purpose and the ability to overcome their obstacles and as Tracy (2013) has shown it can be influenced by positive-thinking people. These findings suggest that Positive thinking skills in the MS patients and *Positive thinking* can improve their well-being and through increased belief in their ability, promote hope in these patients.

Also the findings of the study, on effectiveness of positive thinking skills was confirmed on the *Imagine yourself* in patients with MS. Although empirical studies have not been conducted directly in the field, the findings of some studies indirectly, from results of this study protect as Tsvilskaya & Artemyeva (2016) And Morea, Friend & Bennett (2008) have shown, optimism of people is among the factors that have a significant impact on the people's self concept.

In other words if people have a positive view of the future, this shows at a higher level as confidence and higher self-esteem (Hannell, 2012) and it is consequently expected that People also have higher self concept which in study was proven. To explain these findings, it can be noted that comments of Bray (2001) in the field of indirect relationship between optimism at self concept the positive consequences of behavior can be shown in the the sense of pride and self-confidence created, while success is attributed to external factors such as chance, luck or help attributed by others and does not lead to a feeling of pride and positive self-concept. According to this, and in accordance with the theoretical foundations it can be expected that patients with MS have a higher amount of positive thinking, and reported higher self-esteem due to *Imagine being controlled by external events* as the results of this study showed leads to higher self concept in these patients.

Also one of limitations of the present study was for members of the control group who had no sessions or replacement therapy. Therefore, there may be active mechanisms associated with the experience of the group (such as acceptance by the group) and the therapist, (such as empathy) or other elements influencing the treatment plan (including the effects from positive expectations from treatment) that are not included in the results. Other limitations of this research, was lack of follow-up period due to time constraints, which is recommended in future research to be used to assess the continuing follow-up from treatment outcomes.

## Conclusion

According to the results of this study, it seems positive thinking skills training has a positive impact in improving life expectancy and self concept in patients in general and patients with multiple sclerosis in particular. So considering that this training, is Non-invasive and is a low-cost intervention, it would be in line with the role of advisers, psychologists and doctors active in MS Society and other independent groups, to be used.

## References

- Begay, Fereshte. (2015). Compare the level of perceived stress and self concept and quality of life in the MS patients and diabetics and healthy individuals. Master's thesis. Islamic Azad University, Science and Research.
- Saman Moghadam. (2015). Effectiveness of positive thinking skills training in the depression and life expectancy of divorced women in welfare in Tehran. Master's thesis. Allameh Tabatabaei University.
- Mollazamani, Ali and Fathi-Ashtiani, Ali. (2009). The effect of instructing role-play on improving self concept of adolescents. *Journal of Behavioral Sciences*, 2 (1): 45-36.
- Barati Sadeh, Fried and true legends. (2011). Practical optimism and positivism. Growth Press, second edition.
- Ashrafi Hafez, Asmaan, Parisa, Mosavi, Moghadam, Sayed Rahmatullah (2012). Effectiveness of positive thinking in the decline in marital disputes in married students. *Journal of Medical Sciences*, 4 (1): 49-53.
- Sahebalzamani M, Zamiri M, Rashvand F. The effects of self-care training on quality of life in patients with multiple sclerosis. *Iranian Journal of Nursing and Midwifery Research* 2012; 17(1): 7-11. 2.
- Ebadi, N., Sodani, M., Faghihi, A., & Hosseinpour, M. (2009). The study of effectiveness of positive thinking training with emphasis on the signs of quran on increasing hope to divorced women's life of Ahvaz city. *Journal of social psychology*, 4(10), 71-84.
- Madan S, Pakenham KI. The stress-buffering effects of hope on adjustment to multiple sclerosis. *International Journal of Behavioral Medicine* 2014; 21(6): 877-90.
- Soundy A, Benson J, Dawes H, Smith B, Collett J, Meaney A. Understanding hope in patients with Multiple Sclerosis. *Physiotherapy* 2012; 98(4): 344- 50.
- World Health Organization. Atlas: Multiple sclerosis resources in the world 2008. Available from: [http://whqlibdoc.who.int/publications/2008/97892415\\_63758\\_eng.pdf](http://whqlibdoc.who.int/publications/2008/97892415_63758_eng.pdf).
- Shahbeigi S, Fereshtenejad SM, Jalilzadeh G, Heydari M. The nationwide prevalence of multiple sclerosis in Iran .*The Official Journal of the American Academy of Neurology* 2012; 78(Meeting Abstracts 1): 1.143.
- Masoudi R, Mohammadi I, Ahmadi F, HasanpourDehkordi A. The effect of self-care program education based on Orem's theory on mental aspect of quality of life in multiple sclerosis patients. *Iran Journal of Nursing* 2009; 22(60): 53-64. [Persian]
- Madani H, Navipour H, Roozbayani P, Mousavinasab N. Effects of self- care program education of patients on complications of multiple sclerosis. *Journal of Birjand University of Medical Sciences* 2008; 15(2): 54-9. [persian]
- Omrani s, Mirzaeian b, Aghabagheri h, Hassanzadeh R, Abedini M. Effectuality of cognitive-behavioral therapy on the life expectancy of patients with multiple sclerosis. *The Journal of Mazandaran University of Medical Sciences* 2012; 22(93): 58-65. [Persian]
- Hamidzadeh S, Masoodi R, Ahmadi F, Mohammadi E. Evaluation of the effect of self- care program based on the Orem framework on the physical quality of life in multiple sclerosis patients. *Journal of Shahid Sadoughi University of Medical Sciences* 2009; 17(2): 153-62. [Persian]
- World Health Organization, Atlas of MS 2013: Mapping Multiple Sclerosis Around the World. London: Multiple Sclerosis International Federation; 2013. Available at: <http://www.msif.org/about-ms/publications-and-resources/>. Accessed October 10, 2013.

- Beer, A., Biberacher, V., Schmidt, P., Righart, R., Buck, D., Berthele, A., & Mühlau, M. (2016). Tissue damage within normal appearing white matter in early multiple sclerosis: assessment by the ratio of T1-and T2-weighted MR image intensity. *Journal of neurology*, 1-8.
- Ghazavi, Z., Khaledi-Sardashti, F., Kajbaf, M. B., & Esmaelzadeh, M. (2015). Effect of hope therapy on the hope of diabetic patients. *Iranian journal of nursing and midwifery research*, 20(1), 75.
- Anderson, J. K., Turner, A., & Clyne, W. (2016). Development and feasibility of the Help to Overcome Problems Effectively (HOPE) self-management intervention for people living with multiple sclerosis. *Disability and Rehabilitation*, 1-8.
- Fitts, W. H., & Warren, W. L. (1996). *Tennessee self-concept scale, TSCS: 2: manual*. (2nd ed.). Los Angeles, CA: Western Psychological Services.
- Gerhardt, U. (1989). *Ideas about illness: An intellectual and political history of medical sociology*. New York, NY: New York University Press.
- Masoodi, R., Khayeri, F., & Safdari, A. (2010). Effect of self-care program based on the Orem frame work on self concept in multiple sclerosis patients. *Journal of Gorgan University of Medical Sciences*, 12(3), 37-44.
- Finucane, C. (2004). Conductive education: offering hope for people with multiple sclerosis? *International Journal of Therapy and Rehabilitation*, 11(2), 48-48.
- Agha-Bagheri H, Mohammad-Khani P, Emrani S, Farahmand V. The efficacy of mindfulness-based cognitive therapy group on the increase of subjective well-being and hope in patients with multiple sclerosis. *Journal of Clinical Psychology* 2012; 4(1): 23-31. [Persian]
- Ghara Zibaei F, Aliakbari Dehkordi M, Alipour A, Mohtashami T. Efficacy of group logo therapy in the perceived stress and life expectancy in MS patients. *Research in Psychological Health* 2013; 6(4): 12-20. [Persian]
- McCabe, M. P. (2005). Mood and self-esteem of persons with multiple sclerosis following an exacerbation. *Journal of Psychosomatic Research*, 59, 161-166. doi:10.1016/j.jpsychores.2005.04.010.
- Masoodi, R., Soleimani, M. A., Alhani, F., Rabiei, L., Bahrami, N., & Esmaeili, S. A. (2013). Effects of family-centered empowerment model on perceived satisfaction and self concept of multiple sclerosis patients care givers. *Koomesh*, 14(2), 240-248.
- Wright, T. M., & Kiropoulos, L. A. (2016). Intimate relationship quality, self-concept and illness acceptance in those with multiple sclerosis. *Psychology, Health & Medicine*, 1-15.
- Bolghan, A. M., Hassan, A. H., & asghari, N. S. M. (2012). Study of the effectiveness of positive couple therapy on hope of mothers with children with special needs. *Journal of social psychology*, 7(21), 113-121.
- Short, S. (2007). *The effects of a positive psychology intervention on the self-concept of students with learning disabilities* (Doctoral dissertation, University of Victoria).
- Riyadi, A., Chusna, F. C. N., & Harist, F. A. (2015). Effectiveness of group therapy: psychodrama in improving positive self-concept towards captive child. In *prosiding seminar fakultas psikologi ump*, 1(1), 19-24.
- LIU, C., & ZHANG, C. (2011). The Revelations on the Training of Adolescence's Self-concept Form Positive Psychology. *The Guide of Science & Education*, 5, 095.
- Gholami M, Soudani M. Therapeutic effectiveness of group education on life expectancy and general health of female patients with thalassemia. *Knowledge and Research in Applied Psychology* 2009; 42: 25-45. [In Persian]
- Hoseinian E. Efficacy of group logotherapy on increasing the life expectancy of Cancer patients in Shafa Hospital. MA Thesis in counseling, Azad University of Ahwaz, Sciences and Researches branch 2007. [In Persian]
- Hoseini M. Relationship between life expectancy and psychological hardiness on female and male students. MA Thesis in Psychology, Azad University of Gachsaran 2006. [In Persian]
- Jaser S. (2014). Development of a Positive Psychology Intervention to Improve Adherence in Adolescents with Type 1 Diabetes. *Journal of Pediatric Health Care*, 28 (6): 478-48.
- Groopman, J. (2005). *The anatomy of hope: How people prevail in the face of illness*. 1st ed. New York: Random House, 45-98.
- Snyder, C.R. (1994). *The psychology of hope: You can get there from here*. 1st ed. New York: Free, 102-104.
- Tracy M. (2013). Effect of future writing and optimism on health. *Behavioral medicine*, 43: 20-37.
- Boiler, L.; Haverman, M.; Westerhof, G.J.; Riper, H.; Smit, F.; Bohlmeijer, E. Positive psychology interventions: A meta-analysis of randomized controlled studies. *BMC Pub. Health* 2013, 13, 1-20.
- Tsviliskaya, E. A., & Artemyeva, T. V. (2016). The study of optimism and positive self-concept of students. *International Journal of Humanities and Cultural Studies (IJHCS)* ISSN 2356-5926, 1(1), 199-205.
- Bray BM. (2001). The influence of academic achievement on a college student's self-esteem. Missouri Western State. University, Saint Joseph, MO.
- Hannell, G. (2012). *Promoting positive thinking: building children's self-esteem, self-confidence and optimism*. Routledge.
- Morea, J. M., Friend, R., & Bennett, R. M. (2008). Conceptualizing and measuring illness self-concept: A comparison with self-esteem and optimism in predicting fibromyalgia adjustment. *Research in nursing & health*, 31(6), 563-575.