

# The effectiveness of positive thinking training on perceived stress and happiness in patients with thalassemia major

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## Abstract

**Introduction:** Thalassemia disease is a hereditary chronic hemolytic anemia. Since in chronic diseases complete and perfect healing is out of reach, by the support of psychology we can help these patients to accept that they can change their views and enjoy from their abilities. In addition, this disease cannot ruin their cheerfulness and their family lives.

**Methods:** This semi-experimental type of research had a pre-test, post-test design with a control group. The study sample included 20 girls who are inflicted with thalassemia major. Based on available sampling they were randomly assigned into two groups of 10 (experiment and control) respectively. Positive thinking sessions were held twice a week for 10 sessions with a duration of 60 minutes. In order to gather data, the Perceived Stress Scale (PSS) and Oxford happiness questionnaire were used. Data were analyzed using covariance analysis method. SPSS software version 18 was used for data analysis.

**Results:** Findings showed that positive thinking sessions decreased perceived stress but had an increasing effect on happiness for those with thalassemia major.

**Conclusion:** Thus, holding positive thinking workshops for these patients is recommended.

**Keywords:** Positive thinking, Perceived stress, Happiness, Thalassemia major

## Introduction

Thalassemia disease is a hereditary chronic hemolytic anemia and is common in the Mediterranean regions like Italy, Greece, Cyprus, Lebanon, and Iran. As this disease has different types, thalassemia major is considered as the most common chronic disease in the Mediterranean region (1). This disease is derived from the lack of synthesizing of one or several polypeptide globins reactions that according to genetic laws of Mandle, passes down from generation to generation (2). The average of this disease is estimated to be 5% and more than 15000 people have thalassemia major in Iran (3). Signs and symptoms such as intense anemia, inappropriate growth, over-sized spleen and liver, bone disruptions with changing physiognomy are common in these patients (2). These physical signs can have an impact on other aspects of patients' lives such as their happiness (4). Studies indicate that most adolescent patients with thalassemia major are not happy (5). These patients are more depressed in comparison to other pa-

tients with short-term damages (6). Thalassemia major patients, apart from physical problems and performance limitations, are confronted with other problems like making family, high education and finding suitable jobs. These matters can lead to lots of mental problems like stress for these patients. In this regard, the study of Poormovahed et al indicated that the amount of anxiety in adolescents inflicted with thalassemia major is more than their peers (7). In addition, according to the results of another study, these patients have more psychiatric disruptions specially anxiety. Thus, physical and mental problems in this group of patients can lead to despair and decrease their social performances (8). According to these findings, the necessity of mental support and rehabilitation programs with the aim of increasing the motivation and improvement of mental and physical state in these patients is obvious. To reach this matter, one of the educational programs is positive thinking. Positive thinking means the permission of positive thoughts, contemplations, and imaginations



into mind that guide the growth and success of human beings (9). Research shows that there is a significant positive relationship between optimism and different aspects of health. This plays an important role in preventing the physical and mental disruptions (10,11). The results of Talor et al showed that if human's conceptions are accompanied with a positive thought and an optimistic and hopeful perspective about future, not only this helps the person in his or her routine life, but it also helps him or her in very stressful and threatening incidents of life and it can reduce anxiety (12). Evidence shows that optimism is useful for human's health when a person is under severe stress. By the same token, optimism improves health, reduces fear caused by stress and increases the effect of medicine in severe conditions (13). Also, in a research that was conducted by Victoria Cerezo et al on women inflicted with cancer, results indicated that educating optimism can lead to an increase in happiness. This was evident in experimental group rather than control group (14). A study conducted by Jabbari et al in Iran showed that educating optimism led to a decrease in inefficient attitudes but augmented the level of happiness in experimental group rather than control group (15). Similarly, Jafar Tabatabaee et al highlighted that optimism education led to a decrease in the anxiety and depression in experimental group rather than control group (16). Based on the aforementioned matters, thalassemia major patients confront various physical and mental problems and these factors can increase stress and decrease happiness in these patients (17). In this regard, the necessity of psychological intervention is obvious to help these people to accept that although they are not able to control the infliction, but they can change their attitude and enjoy their life (18). Nowadays, the lifespan of these patients has increased due to the advances in research and treatment. Therefore, this research was conducted to determine the effectiveness of positive thinking training on perceived stress and happiness in patients with thalassemia major.

## Methods

This semi-experimental type of research had a pre-test, post-test design with a control group. All girls in the age range of 17 to 25 who were inflicted with thalassemia major included the study sample. Based on available sampling, the study sample was randomly assigned into two

groups of 10 persons (experiment and control group). In order to enroll subjects into the study, one of the researchers, by the permission of Medical University of Jiroft, paid a visit to the center of special diseases and provided necessary explanations regarding the purpose and the aims of the study. The educational sessions (positive thinking) took place in the center of consultation unit of education in Jiroft. These sessions were held twice a week for experimental group. Both groups took the pre-test as well. Finally at the end of training sessions a test was taken from both groups. After finishing the research, training positive thoughts were presented to the control group. The summary of activities that were presented during each session is shown below (19) (Table 1).

## Research Tools

### *Perceived stress scale*

The perceived stress scale (PSS) (20), is the most widely used tool to measure the perception of stress. This scale includes 14 items and analyzes the amount of thoughts and feelings during previous months. Items are answered on a 5-point Likert type scale ranging from 0 (never) to 4 (always). Items 4, 5, 6, 7, 9, 10, and 13 are graded reversely and include never (0) to most of the time (4).

The minimum score is zero and the maximum score is 56. In a study conducted by Ghorbani et al Cronbach alpha was calculated to be 0.86 in American society but it was reported to be 0.81 in Iranian society (21). For content validity purposes, the questionnaire was approved by 10 experts of Mashhad University of Medical Sciences. The reliability of the Persian version of the questionnaire was calculated by Bastani et al with Cronbach alpha coefficient 0.74 (22).

### *Oxford happiness questionnaire*

This measure was developed by Argyle and Lu includes 29 questions. Every question consists of four items and is graded from 0 to 3. Thus, the score of every participant is fluctuated from 0 to 87. They reported the coefficient of this questionnaire at 0.90 (23). Furthermore, Furnham (1990) and Francis (1998) reported a coefficient of 0.90 and 0.92 for this questionnaire respectively (24). The coefficient of this questionnaire was reported to be at 0.92 by Alipoor and Noorbala in Iran (24).

**Table 1.** The summary of activities during each session

Sessions	Subjects	Objectives
1	Get familiar to thinking	Participants get familiar with the concept of positive and negative thinking
2	Identifying the positive and negative thinking	Participants get familiar with their positive and negative thinking
3	Mood	Participants use their various mood in different situations
4	Communicating the interchanging conceptions and emotions	Participants use their various feelings in different situations
5	Emotion	Participants show their positive emotions and see the consequences in their lives
6	Practicing the positive points	Positive points and aspects are written
7	The definition of optimism	Participants get familiar with the concept of optimism
8	The definition of cheerfulness	Participants get familiar with the concept of essential cheerfulness
9	Creating a positive image in their minds	Identifying the positive and negative images and creating a positive schema for them
10	The education of relaxation	Participants connect their minds and bodies together and relax themselves

## Results

Table 2 depicts the mean and standard deviation of perceived stress and happiness in two groups of experiment and control.

As can be seen from Table 2, there was a difference in the mean of post-test for perceived stress in two groups of experiment and control ( $P=0.001$ ). To analyze the significance of this difference and control the effect of pre-test, the statistical test of covariance was used. The premise of using the covariance test is the convergence of variances that is confirmed due to the results of Levene test ( $P>0.05$ ,  $F=0.0129$ ). The results of covariance analysis are presented in Table 3.

Based on the findings from Table 3, by accepting that the control variable is pre-test scores, we could observe a significant difference between PSSs before education and after that in experiment group ( $P=0.001$ ). The difference was 52% which means 52% of variance of marks in perceived stress is related to group membership. Statistical power of 0.96 indicates that the sample volume was sufficient.

Findings also showed that there was a difference between two groups of experiment and control in terms of happiness scores based on post-test results. To analyze the significance of this difference and control the effect of pre-test, the statistical test of covariance analysis was used. The premise of using the covariance test is the convergence of variances that is confirmed due to the results of Levene test ( $P>0.05$ ,  $F=0.0129$ ). The results of covariance analysis are presented in Table 4.

**Table 2.** The mean and standard deviation (SD) of perceived stress and happiness in two groups of experiment and control

Group	Variable	Test	Mean	SD
Experiment	Perceived stress	Pre-test	35.2	4.87
		Post-test	12.200	3.67
	Happiness	Pre-test	32.6	4.45
		Post-test	33.06	4.37
Control	Perceived stress	Pre-test	46.25	5.36
		Post test	58.4	3.88
	Happiness	Pre test	45.8	6.81
		Post test	45.55	6.93

**Table 3.** The results of the covariance analysis of the difference in the perceived stress test's marks average before and after training according to two groups of test and control

Source	Some of squares	Df	Mean of square	F	P	Eta squared	Observed power
Pre test	176.31	1	176.31	37.91	0.001	0.69	0.88
Group	88.03	1	88.03	18.93	0.001	0.52	0.96
Error	79.18	17	4.65				
Total	942	20					

**Table 4.** The results of the covariance analysis of the difference in the happiness marks before and after training according to 2 groups of test and control

Source	Some of squares	Df	Mean of square	F	P	Eta squared	Observed power
Pre test	996.34	1	996.34	82.47	0.001	0.82	1
Group	1553.86	1	1553.86	128.63	0.001	0.88	1
Error	205.4	17	12.08				
Total	110909	20					

By accepting that the control variable is pre-test scores, we could observe a significant difference between happiness scores before education and after that in experiment group ( $P=0.001$ ). The difference was 88% which means 88% of variance of happiness marks is related to group membership. Statistical power of 1 indicates that the sample volume was sufficient.

## Discussion

This study was conducted to investigate the effect of positive thoughts on perceived stress and happiness in patients inflicted with thalassemia major in Jiroft city. Based on the results, positive thinking classes decreased perceived stress. In addition, an increase was observed in terms of happiness for patients. This result is consistent with the findings of Madani and Zare (9), Taylor et al (12), Victoria Cerezo et al (14), Jabbari et al (15) and Shiri et al (19). We conclude that positive thinking leads to a better recognition of self and positive experiences. We also highlight that self-esteem can be improved by the realization of these experiences. Considering positive points and good experiences in the past is likely to increase more positive concepts about a person and others, and this helps people to accept more responsibility about their own values and reach a fuller understanding of their own. Thus, this leads to an increase in people's happiness (24). Another result of this research was the effect of positive thought on reducing perceived stress. In order to explain this finding, it can be assumed that subjects found more awareness than their thoughts and emotions. Logical interpretation of incidents and cognitive recreation also enabled them to confront harsh conditions of life and this issue can reduce the range of unpleasant events. As a result, it reduces the perceived stress in individuals. Furthermore, according to Fredrickson's falsifying hypothesis creating positive excitement neutralizes the negative feelings and this effect not only has an impact on intellectual level but also it plays a role on physiological level and reduces the negative emotions like stress (25).

## Conclusion

On account of the findings of this study, positive thinking

sessions are recommended for patients with thalassemia disease. We also suggest that this kind of treatment be applied in other groups with similar problems.

### Ethical issues

This study was approved and supported by Neuroscience Research Center, Institute of Neuropharmacology of Kerman University of Medical Sciences.

### Authors' contributions

All authors contributed equally to the writing and revision of this paper.

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### References

1. Angastiniotis M. The adolescent thalassaemic. The complacent rebel. *Minerva Pediatr* 2002; 54(6): 511-5.
2. Kasper D, Fauci AS, Longo DL, Braunwald E, Hauser SL, Jameson JL. *Harrison's Principles of Internal Medicine*. 16th ed. USA: McGraw-Hill; 2005.
3. Comprehensive instructions and instructional texts prevention of thalassemia major country program of the Ministry of Health, Treatment and Medical Education. Tehran: Sound Publishing Center; 2004. [In Persian].
4. Monastero R, Monastero G, Ciaccio C, Padovani A, Camarda R. Cognitive deficits in beta-thalassemia major. *Acta Neurol Scand* 2000; 102(3): 162-8.
5. Yaghobi Y, Jafari Asl M. Survey of emotional status in children with thalassemia in selected hospitals in Rasht. *Holistic Nursing and Midwifery Journal* 2007; 17(2): 40-44. [in Persian].
6. Pakbaz Z, Treadwell M, Yamashita R, Quirolo K, Foote D, Quill L, et al. Quality of life in patients with thalassemia intermedia compared to thalassemia major. *Ann N Y Acad Sci* 2005; 1054: 457-61.
7. Pourmovahed Z, Dehghani KH, Yasini Ardakani SM. valuation of hopelessness and anxiety in young patients with thalassemia major. *Quarterly Journal of Medical Research* 2003; 2(1): 45-52. [In Persian].
8. Hadi N, Karami D, Montazeri A. Health-related quality of life in major thalassaemic patients. *Paysh J* 2009; 8(4): 388-93.
9. Madani S, Zare H. The effect of education positive thinking on values, interpersonal and interpersonal problems [Thesis]. Tehran: PNU Tehran; 2010. [In Persian].
10. Maruta T, Colligan RC, Malinchoc M, Offord KP. Optimism-pessimism assessed in the 1960s and self-reported health status 30 years later. *Mayo Clin Proc* 2002; 77(8): 748-53.
11. Anderson Joona P. Happiness and health. *Journal of Behavioral and Experimental Economics* 2008; 37(1): 213-36.
12. Taylor SE, Kemeny ME, Reed GM, Bower JE, Gruenewald TL. Psychological resources, positive illusions, and health. *Am Psychol* 2000; 55(1): 99-109.
13. Brydon L, Walker C, Wawrzyniak AJ, Chart H, Steptoe A. Dispositional optimism and stress-induced changes in immunity and negative mood. *Brain Behav Immun* 2009; 23(6): 810-6.
14. Victoria Cerezo M, Ortiz-Tallo M, Cardenal V, De La Torre-Luque A. Positive psychology group intervention for breast cancer patients: a randomised trial. *Psychol Rep* 2014; 115(1): 44-64
15. Jabbari M, Shahidi S, Motaby F. Positive intervention effects on decreasing the dysfunctional attitudes and increase happiness in adolescent girls. *Journal of Clinical Psychology* 2014; 6(2): 74-65.
16. Jafar Tabatabaee TS, Ahadi H, Khamesian A. The effect of optimism training on the anxiety and depression of students of psychology at the Azad University of Birjand (2012). *Mod Care J* 2013; 10(1): 34-42. [In Persian].
17. Goldbeck L, Baving A, Kohne E. Psychosocial aspects of beta-thalassemia: Distress, coping and adherence. *Klin Padiatr* 2000; 212(5): 254-9. [In German].
18. Borgna-Pignatti C1, Cappellini MD, De Stefano P, Del Vecchio GC, Forni GL, Gamberini MR, et al. Survival and complications in thalassemia. *Ann N Y Acad Sci* 2005; 1054: 40-7.
19. Shiri Z, Kazemi S, Sohrabi N. The effect of positive thinking on the quality of life of women in Qeshm city. *Journal of Psychological Models and Methods* 2012; 2(6): 57-67. [In Persian].
20. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav* 1983; 24(4): 385-96.
21. Ghorbani N, Bing MN, Watson PJ, Davison HK, Mack DA. Self-reported emotional intelligence: Construct similarity and functional dissimilarity of higher-order processing in Iran and the United States. *Int J Psychol* 2002; 37(5): 297-308.
22. Bastani F, Rahmatnejad L, Jesmi F, Haghani H. Breastfeeding self-efficacy and Perceived Stress. *Iranian Journal of Nursing* 2008; 21(54):9-22. [In Persian].
23. Argyle M, Lu L. The happiness of extroverts. *Personality and Individual Differences* 1995; 11: 1011-7.
24. Alipoor A, Noorbala AA. A preliminary evaluation of the validity and reliability of the Oxford happiness questionnaire in students in the universities of Tehran. *Iranian Journal of Psychiatry and Clinical Psychology*. 1999; 5(1,2): 55-66.
25. Safaei M, Sokri O. Assessing stress in cancer patients: factorial validity of the perceived stress scale in Iran. *Iranian Journal of Psychiatric Nursing* 2014; 2(1): 13-22. [In Persian].