

# Effect of Individual Psychotherapy with a Focus on Self-Efficacy on Quality of Life in Patients with Thalassemia Major: A Clinical Trial

## ARTICLE INFO

### Article Type

Original Research

### Authors

Taheri P.<sup>1</sup> MSc,  
Nooryan Kh.\*<sup>2</sup> PhD,  
Karimi Z.<sup>3</sup> PhD,  
Zoladl M.<sup>4</sup> PhD

### How to cite this article

Taheri P, Nooryan Kh, Karimi Z, Zoladl M. Effect of Individual Psychotherapy with a Focus on Self-Efficacy on Quality of Life in Patients with Thalassemia Major: A Clinical Trial. Journal of Clinical Care and Skills. 2020;1(2):49-54.

<sup>1</sup>Student Research Committee, Yasuj University of Medical Sciences, Yasuj, Iran

<sup>2</sup>Psychiatric Nursing Department, Nursing Faculty, Yasuj University of Medical Sciences, Yasuj, Iran

<sup>3</sup>Operating Room Department, Paramedicine Faculty, Yasuj University of Medical Sciences, Yasuj, Iran

<sup>4</sup>Social Determinants of Health Research Center, Yasuj University of Medical Sciences, Yasuj, Iran

### Correspondence

Address: Psychiatric Nursing Department, Nursing Faculty, Yasuj University of Medical Sciences, Dr. Jalil Street, Yasuj, Iran. Postal Code: 7591994799  
Phone: +98 (74) 33235144  
Fax: +98 (74) 33235144  
khnooryan@gmail.com

### Article History

Received: September 6, 2018  
Accepted: January 10, 2019  
ePublished: June 20, 2020

## ABSTRACT

**Aims** The aim of this study was to investigate the effect of individual psychotherapy with a focus on self-efficacy on quality of life in patients with thalassemia major.

**Materials and Methods** In this randomized clinical trial study in 2016, among patients with thalassemia major referring to Cooley's anemia ward of Shahid Rajaie Hospital in Gachsaran, Iran, 50 eligible patients were selected by convenience sampling method. They were assigned in intervention (n=25) and control (n=25) groups by quadratic block randomization. Each of 50 subjects signed the informed written consent. Demographic questionnaire and 36-Item Short-Form Health Survey (SF-36) were used as the research tool. The data were analyzed by SPSS 21 software, using Chi-square test, independent T-test, and the Mann-Whitney U test.

**Findings** One month after the intervention, the scores of the Physical Component Summary (2461.8±15.7) and the Mental Component Summary (1873.0± 21.6) in the intervention group were significantly higher than the same scores (2283.2±279.8) and (1712.6±270.5) in the control group (p<0.05). At this time, the score of all Health Domain Scales of SF-36 Health Survey in the intervention group were higher than the same scores in the control group. These differences were significant except for the Role-Physical and Bodily Pain (p<0.05).

**Conclusion** Individual psychotherapy with a focus on self-efficacy is effective on increasing quality of life of patients with thalassemia major.

**Keywords** Psychotherapy; Self-Efficacy; Quality of life; Beta-Thalassemia

## CITATION LINKS

- [1] B-Thalassemia children and quality of life: Does the present condition justify children's ... [2] Psychosocial, social and financial problems with coping strategies among families ... [3] Comparison of quality of life of thalassaemic children ... [4] Psychosocial implications of ... [5] Evaluation of quality of life in patients with thalassemia major in the southern margin ... [6] The effect of family-centered empowerment model on the quality of life of school-age B-thalassaemic ... [7] Psychological therapies for sickle cell ... [8] Emotional impact in B-thalassaemia major children following cognitive-behavioural family therapy and quality of life ... [9] Effect of self-management empowering model on the quality of life in adolescents and youths with major ... [10] Effects of storytelling on educational self-efficacy in children with, aged 7-12 Years ... [11] The short form health survey (SF-36): translation and validation study of the Iranian ... [12] The MOS 36-item short-form health ... [13] A cognitive behavioral based group intervention for children with a chronic illness and their parents: A multicentre randomized ... [14] Survey of social, emotional and academic self efficacy in 7- 12 aged children with major thalassemia in ... [15] Effect of self-care training on applying coping strategies ... [16] Spirituality self-efficacy and quality of life among adults with sickle cell ... [17] Psychological Therapies for ... [18] Thalassemia major: How do we improve ... [19] Effectiveness of educational program based on self-management model on depression, anxiety and stress in patients with sickle cell disease ... [20] Association between self-efficacy and quality of life in women with breast cancer undergoing ... [21] The relationship between self-efficacy and quality of life in patients undergoing coronary artery bypass graft surgery in Shahid Chamran Hospital ... [22] Effectiveness of supportive psychotherapy on quality of life in patients with type2 ... [23] The effect of cognitive-behavioral training on improving the quality of life in cardiac ... [24] Effect of cognitive behavioral therapy on MS patients' quality of life: A multi-centre controlled ...

## Introduction

In each community, a number of people suffer from refractory diseases; they are involved with their disease until the end of their lives and need to be treated continuously. Diseases such as thalassemia, hemophilia, chronic renal failure, multiple sclerosis, hepatitis, diabetes, AIDS, epilepsy, Parkinson's disease, autism, tuberculosis, etc. are known as special diseases; at present, many people suffer from these types of disorders [1].

Thalassemia major is the most common hereditary anemia, in which the patients need regular blood transfusion in 20 days to 1 month period due to the severity of the anemia. It is the most common hereditary disorder seen in almost all races [2]. Despite the therapeutic measures for patients with thalassemia major, like any other chronic diseases, its clinical symptoms affect various aspects of life of the individuals and their families, adversely influence the physical and psychological health, quality of life of the patient and his/her family, and encounter the patient, family, and healthcare system with various problems [3]. Thalassemia major, like other diseases, affects the quality of life of the individual, and various studies have shown that children with thalassemia major have lower quality of life than healthy children [4].

There is a reciprocal relationship between disease and quality of life; physical disorders and the existence of physical symptoms have a direct impact on all aspects of quality of life, especially in chronic patients, such as those with thalassemia major, who are involved with several problems in all stages of life [5]. The combination of medical care and psychosocial support from the patient not only increases the patient's longevity, but also makes the patient accept the disease and increases the self-confidence [6]. In sum, it can be said that the goal of psychotherapy is to identify and reconstruct irrational beliefs and schemes related to own, others, and the world that play an essential role in creating emotional disturbances and maladaptive behaviors. In recent studies, such as those conducted by Anie and Green and Mazzone *et al.*, the usage of psychotherapy methods and their impact on quality of life and other issues in patients with chronic diseases, such as thalassemia major, have been discussed. The results show a positive impact of psychotherapy methods [7, 8]. Razzazan *et al.* have examined the self-management empowerment model on quality of life in adolescents and young people with thalassemia major; then, they reported that this treatment has a positive and significant effect on the quality of life of these patients [9]. Tahmasbi *et al.* have emphasized the positive effects of psychotherapy while evaluating the effectiveness of group discussion on the mental image of teenagers with thalassemia major [1]. Conditions of chronic disease for school age children will have

beyond the physical effects. Children with chronic diseases have less interaction with their peers, their evolutionary skills are delayed, and subsequently they feel different from their peers, resulting in the lack of development of self-esteem and constructivism. Self-efficacy will be reduced in the case of increased difficulty of behavior. As one of the main concepts of social-cognitive theory, self-efficacy means the faith one has to him/herself to perform a particular behavior with success and expect its results [10]. Many patients with chronic conditions experience reduction in self-support, autonomy in life, communication skills, and self-efficacy [11].

Due to the high prevalence of psychological disturbances in patients with thalassemia major [7], the importance of individual psychotherapy with an emphasis on self-efficacy in controlling and treating the mental problems of patients, and lack of the use of this therapeutic approach in previous studies, the aim of this study was to investigate the effect of individual psychotherapy with a focus on self-efficacy on quality of life in patients with thalassemia major.

## Materials and Methods

This clinical trial study was performed among patients with thalassemia major referring to Cooley's anemia ward of Shahid Rajaie Hospital in Gachsaran, Iran in 2016. Using convenience sampling method, 62 patients were selected to participate in the study after being explained the aims of the research. Among them, 12 patients were excluded from the research process due to lack of eligibility. Finally, the study was conducted with a sample size of 50 patients. They were assigned in intervention (n=25) and control (n=25) groups by quadratic block randomization.

Inclusion criteria consisted of the incidence of thalassemia major according to the expert diagnosis, absence of severe stressful events (death of first-degree relatives, illness, accident, divorce) during last year, absence of other disabling physical illnesses, disabilities and severe psychosomatic illness based on patient records and physician's diagnosis, having literacy in reading and writing Persian, and being older than 15 years. Exclusion criteria consisted of exposure to severe stressful events during the study, such as disabling physical illnesses, disabilities, or severe psychosomatic illnesses, severe physical injuries such as fractures, unwillingness of the patients or their families to continue with the researcher, exacerbation and death.

Demographic questionnaire for collection the demographic characteristics of patients, including age, gender, marital status, levels of education, employment status, average monthly income of the family, apparent changes, and place of residency,

and 36-Item Short-Form Health Survey (SF-36) were used as the research tools.

**Short form of quality of life questionnaire:** This questionnaire was made by Ware and Sherbourne in 1992 [12]; it has 36 questions to check health in two main physical and mental dimensions, and 8 subscales, including general health, physical functioning, role-emotional, role-physical, social functioning, bodily pain, vitality, and mental health. Each question has a score between 0 (the lowest score), 50 (middle), and 100 (the best and highest score), which is assigned to the individuals based on their response to the questions' options and the score of the individual is obtained, in relation to that subscale, by adding individual scores for questions in each part. A score close to 100, a sign of high quality of life and less than 50, is a quality of life at a low level. In Montazeri *et al.* study Cronbach's alpha coefficient for various subscales was 0.7 to 0.98 in translated form of this tool in Persian language [11]. In this study, the Cronbach's alpha coefficient for each of the eight scales ranged from 0.78 to 0.93, and for the Physical Component Summary (PCS) and the Mental Component Summary (MCS), 0.92 and 0.96, respectively, were calculated.

The intervention group received individual cognitive-behavioral psychotherapy with a focus on self-efficacy and the control group did not receive any intervention. The individual psychotherapy period included 8 weekly sessions and each session took 45 minutes. The times of sessions were determined and in case of changing the session time, individuals were informed by telephone.

Intervention was performed based on the therapeutic protocol of cognitive-behavioral approach (Table 1) [13] in a quiet, comfortable, and soundless room in the Cooley's anemia ward of the Shahid Rajai Hospital in Gachsaran, Iran; whose conditions were almost the same with home. Training sessions were held face-to-face with questions and answers. During these sessions, patients were actively involved in the treatment program. Also, PowerPoint presentations and educational slides were used in therapeutic sessions to motivate more patients. At the end of each session, the patient was requested to explain a summary of the learned new topic; and a summary of the new topic was given to the patient in the form of a pamphlet or a booklet. Also, the patients were contacted by the phone between the intervention intervals. One month after the intervention, quality of life in the control and intervention groups were evaluated using 36-Item Short-Form Health Survey (SF-36).

The data analysis was performed by SPSS 21 software, using Kolmogorov-Smirnov test for the normal distribution examination of data, Chi-square test for comparing the frequency distribution of qualitative variables including gender, marital

status, levels of education, employment status, apparent changes, and place of residency between the intervention and control groups before the intervention, the independent t-test for comparing the mean of the quantitative demographic variables and the dependent variables with normal distribution between the intervention and control groups, the Mann-Whitney U test for comparing the mean and the median of the dependent variables without the normal distribution between the intervention and control groups.

**Table 1)** Description of individual cognitive-behavioral psychotherapy sessions with a focus on self-efficacy for patients with thalassemia major in the intervention group (25 patients)

<b>First session</b>	Description of goals, assessment of quality of life status and self-efficacy, correlation, clinical interview to identify fear, identify specific and normal conditions of patient's fear and anxiety, attention to patient's anxiety reactions
<b>Second session</b>	Self-review training to the patient to identify mental-psychiatric disorders, giving home-based self-review exercises
<b>Third session</b>	Recognition of anxiety with rehabilitated stimuli and patient responses to it, giving home-based anxiety training exercises
<b>Forth session</b>	Training on détente methods, training muscle relaxation and deep breathing for 15 minutes, mental imagination on different phenomena to gain positive energy and double power, and use relaxing audio tapes at home, giving relaxation exercises and home-based imaging
<b>Fifth session</b>	Description of the concept of talking to yourself and how to use it in anxiety situations, giving home-based talking exercises
<b>Sixth session</b>	Training patient to avoid talking to yourself and develop problem solving strategies for managing anxiety, giving home-based anxiety for management training
<b>Seventh session</b>	Training to assess patient anxiety according to training and exercises and trying to manage anxiety, giving self-assessment exercises and self-encouragement at home
<b>Eighth session</b>	Studying skills and using them in a four-step program to cope with anxiety, giving home-based training

All ethical issues were considered in this study; the written informed consent was obtained from the subjects, they were assured that they are free to participate in the research, they were allowed to leave the study at any time if they wish not to continue the research, the confidentiality aspects were considered in data collection, and the drugs intake did not change, or research subjects were not deprived of the standard treatment and care. Also, regarding the positive effect of self-efficacy oriented individual psychotherapy on the quality of life in the intervention group, after the completion of the

study, appropriate interventions were performed for the control group.

**Findings**

The data of 50 patients with thalassemia major including 30 men (60.0%) and 20 women (40.0%) were analyzed. Their mean age in intervention group and control group were 20.4±3.2 y/o and 21.6±8.3 y/o respectively. There was no significant difference between the age of two groups (p>0.05). The qualitative demographic information of the intervention and control groups such as gender, marital status, levels of education, employment status, apparent changes, and place of residence were not significantly different (p>0.05; Table 2).

Also, there were no significant difference between intervention and control groups in the scores of health component summaries and health domain scales, at the beginning of the study (p>0.05; Table 3).

One month after intervention, the scores of health component summaries and health domain scales of intervention group were higher than the same in control group. There were significant differences between two groups in the scores of physical component summary and mental component summary, and some of health domain scales including physical functioning, role-physical, general health, vitality, social functioning and mental health, but there was no significant difference in bodily pain and role-emotional (Table 4).

**Table 2)** Frequencies distribution of qualitative demographic variables between intervention (n=25) and control (n=25) groups in patients with thalassemia major

Variables	Intervention group	Control group	Significance level
<b>Gender</b>			
Man	14 (56.0)	16 (64.0)	0.56
Woman	11 (44.0)	9 (36.0)	
<b>Marital status</b>			
Single	22 (88.0)	20 (80.0)	0.44
Married	3 (12.0)	5 (20.0)	
<b>Place of residency</b>			
City	16 (64.0)	11 (44.0)	0.16
Village	9 (36.0)	14 (56.0)	
<b>Apparent changes</b>			
Yes	14 (56.0)	13 (52.0)	0.78
No	11 (44.0)	12 (48.0)	
<b>Levels of education</b>			
Elementary	2 (8.0)	3 (12.0)	0.07
Middle school	6 (24.0)	13 (52.0)	
High school and above	17 (68.0)	9 (36.0)	
<b>Employment status</b>			
Unemployed	9 (36.0)	7 (28.0)	0.92
Free job	2 (8.0)	3 (12.0)	
Employee	1 (4.0)	1 (4.0)	
Student	13 (52.0)	14 (56.0)	

**Table 3)** Comparison of health component summaries and health domain scales between intervention and control groups at the beginning of the study

Variables	Intervention group	Control group	Significance level
<b>Health Component Summaries</b>			
Physical (PCS)	1853.4±445.2	1721.4±453.7	0.3*
Mental (MCS)	1184.2±365.5	1277.4±304.3	0.33*
<b>Health Domain Scales</b>			
Physical			
Functioning (PF)	876.0±166.5	760.0±250.0	0.06**
Role-Physical (RP)	264.0±146.9	256.0±135.7	0.73**
Bodily Pain (BP)	153.6±50.4	149.2±46.0	0.75*
General Health (GH)	303.0±106.4	285.0±94.7	0.53*
Vitality (VT)	256.8±84.6	271.2±77.9	0.53*
Social			
Functioning (SF)	154.0±43.1	154.0±49.3	0.93**
Role-Emotional (RE)	148.0±115.9	212.0±88.1	0.06**
Mental Health			
(MH)	322.4±120.7	355.2±102.2	0.31*

\* Independent t-test; \*\* Mann-Whitney U test

**Table 4)** Comparison of health component summaries and health domain scales between intervention and control groups one month after intervention

Variables	Intervention Group	Control Group	Significance level
<b>Health Component Summaries</b>			
Physical (PCS)	2461.8±15.7	2283.2±279.8	0.01
Mental (MCS)	1873.0±21.6	1712.6±270.5	0.0001
<b>Health Domain Scales</b>			
Physical			
Functioning (PF)	1000.0±0	926.0±111.0	0.001
Role-Physical (RP)	400.0±0	376.0±66.3	0.04
Bodily Pain (BP)	186.4±9.5	180.0±23.1	0.46
General Health (GH)	477.0±6.9	438.0±65.0	0.0001
Vitality (VT)	398.4±8.0	363.2±62.4	0.002
Social			
Functioning (SF)	200.0±0	185.0±25.0	0.002
Role-Emotional (RE)	300.0±0	280.0±57.7	0.08
Mental Health			
(MH)	497.6±12.0	446.4±96.2	0.005

**Discussion**

The aim of this study was to investigate the effect of individual psychotherapy with a focus on self-efficacy on quality of life in patients with thalassemia major. In many previous studies, self-efficacy and quality of life assessed and the relationship between them has been addressed. The present study has a new innovative aspect due to the

usage of psychotherapy based on self-efficacy compared with the previous studies on the self-efficacy and quality of life without intervention.

The results of present study emphasis on the positive impact of individual psychotherapy based on self-efficacy as interventional method on the quality of life in patients with thalassemia major. The scores of both physical and psychological dimension of quality of life among patients with thalassemia major in the intervention group were significantly higher from than control group in the post-test. Also, there were significant increasing in many scales of quality of life including physical functioning, limitation in role play due to physical reasons, general health, vitality, social functioning and mental health, but other scales such as bodily pain and limitation in role play due to emotional reasons were increased without significant statistical differences.

Patients with thalassemia major may have more limitations and problems than others that affect their life. Also, they see a big difference between themselves and healthy people. These patients often have a low self-confidence; all of these thoughts and self-deficiency can result from a misinterpretation of their abilities and the magnification of the disease. The presence of such cases and relationship between psychological responses (stress, anxiety, and depression) and quality of life leads to a decrease in the level of mental health and, finally, a decrease in the quality of life. When individuals find ways to deal with mental problems and realize their abilities, acquire power and self-confidence can make them determined to do many things and remove many obstacles in life, so their quality of life will improve [7, 14, 15].

The results of previous studies have shown a positive and significant effect of self-efficacy on the quality of life of patients with thalassemia major and a positive effects of cognitive and behavioral therapy on improving the quality of life of children with thalassemia major. These results indicate that the positive impact of cognitive treatments on improving the patient's ability to cope with his/her condition, medical treatment, and self-efficacy, as the factor that leads to the management of chronic diseases and increases the quality of life and the longevity of people with the disease [8, 16, 17]; the results of these studies were consistent with the present study. Also, the results of researches by Dhirar *et al.* [18] and Ahmadi and Poormansouri [19] were in line with the results of the present study.

The results of the current research indicated that individual psychotherapy with a focus on self-efficacy had no significant effect on the scores of bodily pain. This result was consistent with the results of the research studies by Kiaei *et al.* [20] and Shafiee *et al.* [21]. Although Bodily pains due to chronic physical illnesses can be reduced with drug,

but cognitive treatments, as a combination therapy with medication, are more effective than medication only.

Also, the findings of this study showed that individual psychotherapy with a focus on self-efficacy was not effective on limitation in role play due to emotional problems in patients with thalassemia major, the results were inconsistent with results of the results of Khodabakhshi Koolae *et al.* [22] Khayamnekouei *et al.* [23] and Genty *et al.* [24].

One of the strengths of this study was to use psychotherapy based on self-efficacy and its positive effect on quality of life in patients with thalassemia major. One of the limitations of the present research is the non-generalization of the results due to the sample size. Also, as the intervention and control groups may receive training on improving quality of life through virtual media, the results of this study can be biased.

For further research, the effect of individual psychotherapy with a focus on self-efficacy on mental health and stress in patients with thalassemia major is suggested. Thalassemia major may affect many patients, families, and health care system. The condition of chronic disease for patients will have more effects than a physical condition that faces the person with a decrease in quality of life.

Using self-efficacy enhancement a positive as skills step can be taken to improve the quality of life in patients with thalassemia major. In order to improve self-efficacy and subsequently the quality of life of these patients, holding workshops for patients, the presence of psychiatric nurses in the Cooley's anemia ward, and the establishment of treatment facilities are suggested.

## Conclusion

Individual psychotherapy with a focus on self-efficacy is effective on increasing quality of life in patients with thalassemia major.

**Acknowledgements:** This article was extracted from an MSc thesis in psychiatric nursing. We would like to appreciate the Vice-chancellor for Research and Technology of Yasuj University of Medical Sciences, all patients with thalassemia major and their families, the staff of the Cooley's anemia ward of Shahid Rajaie Hospital in Gachsaran, Iran, and all those who helped us in this study.

**Ethical Permissions:** The present study was conducted after approval by the Ethics Committee of Yasuj University of Medical Sciences with the code IR.YUMS.REC.1395.1 and registering in the Iranian clinical trial website with the code IRCT201641627425N1.

**Conflict of Interests:** The authors declare that they have no current or potential conflict of interests.

**Authors' Contribution:** Taheri P. (First author), Introduction author/Original researcher (30%); Nooryan Kh. (Second author), Introduction author/Original researcher/Discussion author (30%), Karimi Z. (Third author), Introduction author/Discussion author (15%); Zoladl M. (Forth author), Introduction author/Methodologist/Statistical analyst (25%)

**Funding:** Deputy of Research and Technology of Yasuj University of Medical Sciences paid all financial costs of current research project.

## References

- 1- Tahmasbi S, Aein F, Heravi Karimuoe F. B-Thalassemia children and quality of life: Does the present condition justify children's quality of life?. *J Holist Nurs Midwifery*. 2007;17(1):23-30. [Persian]
- 2- Yazdi Kh, Sanagoo A, Joybari L. Psychosocial, social and financial problems with coping strategies among families with thalassaemic patients. *J Gorgan Univ Med Sci*. 2007;9(2):71-5. [Persian]
- 3- Pordanjani SH, Zare K, Pedram M, Pakbaz Z. Comparison of quality of life of thalassaemic children with their parents. *Jundishapur Sci Med J*. 2010;8(4):455-62. [Persian]
- 4- Aydinok Y, Eremis S, Bukusoglu N, Yilmaz D, Solak U. Psychosocial implications of thalassemia major. *Pediatr Int*. 2005;47(1):84-9.
- 5- Khani H, Majdi MR, AzadMarz-Abadi E, Montazeri A, Ghorbani A, Ramezani Shir-Khar Kalaei M. Evaluation of quality of life in patients with thalassemia major in the southern margin of the Caspian Sea. *J Behav Sci*. 2008;2(4):325-32. [Persian].
- 6- Allahyari A, Alhani F, Kazemnejad A, Izadyar M. The effect of family-centered empowerment model on the quality of life of school-age B-thalassaemic children. *Iran J Pediatrics*; 2006;16(4):455-61. [Persian]
- 7- Anie KA, Green J. Psychological therapies for sickle cell disease and pain. *Cochrane Database Syst Rev*. 2015; Issue 5. Art. Available from: [http://www.cochrane.org/CD001916/CF\\_psychological-therapies-for-sickle-cell-disease-and-pain](http://www.cochrane.org/CD001916/CF_psychological-therapies-for-sickle-cell-disease-and-pain).
- 8- Mazzone L, Battaglia L, Andreozzi F, Romeo MA, Mazzone D. Emotional impact in B-thalassaemia major children following cognitive-behavioural family therapy and quality of life of caregiving mothers. *Clin Pract Epidemiol Ment Health*. 2009;5:5.
- 9- Razzazan N, Ravanipour M, Gharibi T, Motamed N, Zarei AR. Effect of self-management empowering model on the quality of life in adolescents and youths with major thalassemia. *J Nurs Educ*. 2014;3(2):48-59. [Persian]
- 10- Hekmatipour N, Behnam Vashani H, Vaghee S, Asghari Nekah SM. Effects of storytelling on educational self-efficacy in children with thalassemia, aged 7-12 Years old. *Evid Base Care J*. 2015;5(3):19-28. [Persian]
- 11- Montazeri A, Goshtasbi A, Vahdaninia MS, Gandek B. The short form health survey (SF-36): translation and validation study of the Iranian version. *Qual Life Res*. 2005;14(3):875-82.
- 12- Ware JE, Jr., Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Med care*. 1992;30(6):473-83.
- 13- Scholten L, Willemen AM, Grootenhuis MA, Maurice-Stam H, Schuengel C, Last BF. A cognitive behavioral based group intervention for children with a chronic illness and their parents: A multicentre randomized controlled trial. *Bmc Pediatr*. 2011;11(65):1-8.
- 14- Behnam Vashani H, Hekmati pour N, Vaghee S, Asghari Nekah S. Survey of social, emotional and academic self efficacy in 7- 12 aged children with major thalassemia in mashhad (2013). *J Pediatr Nurs*. 2015;2(2):49-57. [Persian]
- 15- Azizinezhad P, Kashaninia Z. Effect of self-care training on applying coping strategies of adolescents. *Hormozgan Med J*. 2006;10(3):256-72. [Persian]
- 16- Adegbola M. Spirituality self-efficacy and quality of life among adults with sickle cell disease. *South Online J Nurs Res*. 2011;11(1):894-915.
- 17- Anie KA, Massaglia P. Psychological Therapies for Thalassemia. *Cochrane Database Syst Rev*. 2001;3(8):132-68.
- 18- Dhirar N, Khandekar J, Bachani D, Mahto D. Thalassemia major: How do we improve quality of life?. *Springerplus*. 2016;5(1):1895-9.
- 19- Ahmadi M, Poormansouri S. Effectiveness of educational program based on self-management model on depression, anxiety and stress in patients with sickle cell disease (24 weeks follow up). *J Urmia Nurs Midwifery Fac*. 2016;13(12):1039-49. [Persian]
- 20- Kiaei M, Ferdosi M, Moradi R, Chelongar Q, Ahmadzadeh M, Bahmanziari N. Association between self-efficacy and quality of life in women with breast cancer undergoing chemotherapy. *J Qazvin Univ Med Sci*. 2016;20(2):65-58. [Persian]
- 21- Shafiee Z, Babae S, Nazari A. The relationship between self-efficacy and quality of life in patients undergoing coronary artery bypass graft surgery in Shahid Chamran Hospital in Isfahan during 2010-2011. *Iran J Surg*. 2014;22(1):64-72. [Persian]
- 22- Khodabakhshi Koolae A, Navidian A, Baiati Z, Rahmatizadeh M. Effectiveness of supportive psychotherapy on quality of life in patients with type2 diabetes. *J Diabetes Nurs*. 2015;3(3):31-41. [Persian]
- 23- Khayamnekouei Z, Yousefy A, Manshaee Gh. The effect of cognitive-behavioral training on improving the quality of life in cardiac patients. *Iran J Med Educ*. 2010;10(2):148-54. [Persian]
- 24- Genty M, Devy R, Edan G, Lehert P. Effect of cognitive behavioral therapy on MS patients' quality of life: A multi-centre controlled trial. *Ann Phys Rehabil Med*. 2016;59(Suppl):e41-2.