



Examining the effect of cognitive-behavioral family therapy on social stigma in family with children suffering from sickle cells in Manujan in 2016

Masoumeh Zarei¹, Hamidreza Roohafza²

ABSTRACT

Background and Purpose: Given the ruinous impact of physical ailments, such as sickle cells and absence of psychological care, instructing cognitive-behavioral mediations is vital for enhancing family functioning to diminish social stigma perceived by these families. Most of the research conducted has focused on various recommendations for the probable betterment in the status of children with sickle cells and less on the families affected. Thus, this study conducted to determine the effectiveness of cognitive-behavioral family therapy (CBFT) in social stigma of these families.

Method: The study was quasi-experimental and the needed information collected by Family Measurement Tool and Social Stigma questionnaires. The sample was 20 families with children suffering from sickle cells (SC) covered by two clinics in Manujan, selected through convenient sampling in 2016. First, the families were divided into two groups of 10 (intervention group and control group), and after measuring the aspects of family evaluation and social stigma in them, the intervention group underwent cognitive-behavioral intervention for 8 weeks. SPSS 22, descriptive, and inferential statistics were used to analyze the results.

Results: The results indicated that cognitive-behavioral intervention in the intervention group, contrasted to the control group, had a significant relationship with the general function of family in problem solving (Control 1.97; Intervention, 2.26), emotional responsiveness (Control 2.16; Intervention, 2.21), behavioral control (Control 2.36; Intervention, 2.35), and the social stigma of patients with SC ($P < 0.05$).

Conclusion: CBFT method enhances general function of the family and reduces perceived social stigma, and this significance shows that health systems and centers should use psychostigmaherapists for more cognitive and behavioral interventions to reduce social stigma in families of patients with SC or other chronic illnesses.

Keywords: SC, family function, CBFP, social stigma

INTRODUCTION

Sickle cell or sickle cell anemia is an autosomal recessive genetic disorder (1). Some of the patients suffer from thalassemia β because of having one parent with mild thalassemia and another parent with SC (2). SC patients are prone to suffer serious infections like sepsis and meningitis induced by capsular microorganisms. Thus, infection is a crucial element in mortality and hospitalization of the patient (3, 4). SC is a blood disease that causes decline in the quality of life of suffering patients and their lack of independence in the future (5).

SC is a qualitative hemoglobinopathy, in which hemoglobin production is normal. In this illness, glutamic acid is replaced by valine in the sixth position of the beta chain. Hemoglobin S changes without oxygen and progresses toward becoming sickle-formed, and the hardness of the red cell is the reason for hemolysis and many reactions of the ailment (6).

SC is a hereditary disease created by a genetic mutation. A mutation in these genes creates SC disease. A child who inherits a mutation from one of the parents will form a sickle cell trait and can transmit it to the next generation children (7). The most common symptom of SC disease is anemia. The life of the red blood cells is 10 to 12 days and the

¹ MSN, Nursing and Midwifery Faculty, Isfahan (Khorasgan) Branch, Islamic Azad University, Isfahan, Iran.

² Cardiac Rehabilitation Research Center, Cardiovascular Research Institute, Isfahan University of Medical Sciences, Isfahan, Iran.

Correspondence: Hamidreza Roohafza

Cardiac Rehabilitation Research Center, Cardiovascular Research Institute, Isfahan University of Medical Sciences, Isfahan, Iran.

E-mail: roohafza@crc.mui.ac.ir

Received: 7 Jan 2018, Accepted: 22 Feb 2018

hemoglobin level of them is 7-10 grams per deciliter. In this disease, the red blood cells are produced in shape of sickle, but they lose the ability to carry oxygen because of their deformity. Thus, the body loses its water and suffers fever (7).

Among the main components of behavioral family therapy are obtained by behavior change of accelerating the positive behavior. By reducing negative behavior (8). In the family therapy, the therapist identifies the problem, examines the relationships between members of a family and the role and family members' duties, and ultimately changes family structure by using existing and specialized techniques (9, 10). So many cognitive-behavioral strategies are utilized in family therapy according to cognitive-behavioral approach. Cognitive-therapy has extended because of convenience, intelligibility for individuals, speed and exactness, and having a positive part in psychostigmaherapy. Cognitive therapies, such as behavioral therapies, are systematic, planned, and organized. Cognitive-behavioral interventions in families can help reduce the burden of chronic illness, such as SC that; otherwise, would cause psychological and communication problems among family members. If this situation continues, it will cause a social stigma feeling in the families (11, 12).

Social stigma means a tag or label considered as a social role associated with negative stereotypes, so creating a sense of discrimination in the person with social stigma (13). Since people with chronic illnesses, such as Chronic Obstructive Pulmonary Disease (COPD) face a social stigma related to health issues, they may feel banished from the healthy world because of other people's encounters and lack of support from the health staff, friends, family, society and workplace (14, 15). Social stigma is a state considered inforivble in society (16).

The family is the smallest, oldest and most enduring social institution where interaction takes form and with verbal skills begins to form emotions in individuals. A family in its narrow sense is a social unit resulting from the marriage of a woman and a man where children born complete it (17). In general, the behavioral family therapists have features such as 1) direct attention and emphasis on visible behavior, such as symptoms, rather than hypothesizing of interpersonal causality and 2) a precise and permanent measurement of the particular and usually obvious behavior supposed to change. Moreover, it includes 3) giving importance to increasing (accelerating) or reducing (decelerating) of target behavior by manipulating external affinities of reinforcement, 4) teaching revising and modifying the affinities of empowerment for the family, and 5) the interest in the empirical assessment of the effects of therapeutic interventions (18).

Research conducted a study entitled "The efficacy of cognitive-behavioral group therapy on improving the family process in families of the addicted people" aimed at enhancing the family process for betterment of the performance of addicted people's families. They selected 30 families of those who referred to Birjand addiction treatment centers by convenient sampling and randomly divided them into two groups of 15 (intervention and control). The study was semi-experimental conducted with pre-test-post-test design with control group. Research tool in the study was family process questionnaire. The results showed a significant difference between the subjects of the two groups and the effectiveness of CBGT in improving the family process in families with addicted people. Furthermore, the results of this study indicated that if quality of family process is improved through the family education program, one could improve the quality of the families and prepare the context for controlling and preventing the tendency towards drug abuse (19).

J. Jafari (16) conducted a descriptive-correlational study entitled "Examining perceived social stigma in adolescent girls and boys with siblings and specific needs and their relationship with their psychological features." He aimed at evaluating the perceived social stigma among boy and girls adolescents with sibling of special needs (mental and physical handicap) and selected 240 people by multi-stage sampling method. Social stigma questionnaire of (20) and SCL-90 questionnaire were used to collect data, and Pearson correlation coefficient, independent t-test and ANOVA analysis were used for statistical analysis. Findings showed no significant relationships between social stigma of adolescents and their demographic characteristics, but there was a significant statistical relationship between social stigma and the psychological features such as depression, anxiety, phobic anxiety and hostility ($P \leq 0.01$), so this relationship can be used to improve their mental health (20).

G.J. Cullbert (17) conducted in a study entitled "The experience and issues related to social stigma in HIV-positive prisoners in Indonesia." Qualitative findings have played a major role in the social stigma for deciding to divulge patients' status to family members, parents, and other prisoners. Moreover, it was suggested that interventions should identify social stigma of AIDS in prisoner with this disease to achieve treatment of AIDS as a preventative goal (199).

The present study helps family members to recognize and reduce psychological problems by CBFT through teaching some skills such as communication skills, problem solving, effective coping, stress relieving, positive thinking, and cognitive reconstruction of family members in family therapy sessions. The study also investigates the effect of CBFT on the social stigma feeling of families with SC children in Manujan.

METHOD

This study was semi-experimental conducted in 2016 using convenience (available) sampling. The study used social stigma questionnaire and family measurement tool. This study used field approach to collect data. The population of this study was 20 families (patient caregiver) who has a child with SC, covered by Hussein Abad and Nodej clinics in Manujan. In this study, given the problems of these families, after receiving the list of families and sending consent letters to them to cooperate in this research, the researcher set 10 families out of 20 families in the intervention group in a completely randomized manner, based on random numbers table, and the other 10 in the control group.

The subjects should have the following conditions to enter this study:

- 1- During the study, the families with children with SC are should be the research samples.
- 2- They should be willing to participate in the study.
- 3- They should have at least one child over 15 with SC.
- 4- They should have the ability to complete the questionnaire or participate in interviews and training sessions.

Exclusion criteria include:

- 1- Request to withdraw from the study by the subject while completing the questionnaire until the information analysis stage.
- 2- Disability to answer the questionnaire questions and attend training sessions.

Social stigma questionnaire and McMaster Family Assessment Device (FAD)

We used a 9-item questionnaire of social stigma to measure the social stigma in the samples. The questions had five responses in a Likert scale rated from never, rarely, sometimes, often, and always, scored from 1 to 5, respectively. Questions with positive meaning (questions 3 and 7) were scored reversely. The average rating of people was calculated from nine questions. Higher scores showed a higher social stigma rate. In classifying the social stigma in individuals, scores from 1 to 2.5 were considered as low social stigma, from 2.5 to 3.5 were considered as moderate social stigma, and from 3.5 to 5 were considered as severe social stigma (22).

McMaster Family Assessment Device (FAD) was developed by Epstein, Baldwin and Bishop (1983) based on the McMaster model. The questionnaire has 60 questions and identifies six aspects of the family function. In this questionnaire, in addition to six sub-scales, there is another scale measuring the general performance of the family. The scoring tool for McMaster's FAD is to give each question a score of 1 to 4.

- Strongly Agree, score 1; Agree, Score 2; Disagree, Score 3; Strongly Disagree, Score 4

Procedure

Regarding the setting of cognitive-behavioral training sessions before any intervention, social stigma, the aspects of family assessment in patients with SC were measured and recorded by the questionnaires in the patient and his caregiver. According to pre-test results, the rate of stigma social was observed in the studied subjects. Then, according to the results, cognitive-behavioral meetings were planned and run. The sessions lasted 8 weeks - the researcher referred to the research area early each week and with the help of clinic staff the needed education was imparted. Educational sessions were prepared and evaluated in order to evaluate the subscales of the questionnaire on the dimensions of FAD and the need of families for improving the social stigma. The intervention program was performed for 90 minutes in a cognitive-behavioral interventional environment every week. In face to face meetings, the individuals stated that the free discussion had caused psychological outburst; and that sharing their problems with other families who had experienced a similar problem, would make it possible to find better and more positive solutions. They even called for holding these meetings after the end of the research and expressed their satisfaction with these meetings. The mental status of the investigated families that was not controllable despite the researchers' efforts was a research constraint.

At the start of the meeting, they asked questions like: Did you think about what was said at the previous meeting? Did you have an opportunity to react to it? How much did the points mentioned in the previous session helped you? How successful did you comply with the content of the previous meeting?

The timing of the interventions was as follows:

Session 1: Initial familiarity with family, establishing the treatment relationship and building trust in the family to maintain patient information, implementing social stigma questionnaire, a family performance measurement tool and mental health

Session 2: Education on disease cycle of SCs, social stigma, and teaching cognitive-behavioral pattern

Session 3: Understanding the concept of self-conscious thoughts about hot social stigma and how to find them

Session 4: Strengthening the ability to find negative self-conscious thoughts about social stigma, familiarizing and identifying some of the common cognitive errors about social hotness (section one), testing the breakdown of activity into small steps

Session 5: Understanding and identifying the common cognitive errors in social stigma (section 2), identifying the types of cognitive errors in negative self-conscious thoughts in the context of hot social, planning activities

Session 6: Strengthening cognitive patterns by emphasizing finding cognitive errors from negative thoughts about social stigma, challenging negative thoughts on social stigma topics, and teaching responses to negative self-reflection thoughts

Session 7: Strengthening and practicing responses to negative thoughts in social stigma context and thought substitution

Session 8: Practicing the skills learned in previous sessions and the need to apply these techniques when dealing with stressful situations to reduce the symptoms of the disease, the implementation of post-test

The mental status of the investigated families, which despite the researchers' efforts to control, was not controlled by the research was among the limitations of the study. Statistical analysis

Statistical analysis was performed at descriptive and inferential levels. At the descriptive level, we used frequency distribution tables, mean, and standard deviation indicators. Since the study was designed to measure the characteristics of the samples in the three stages before, immediately after, and three months after the intervention in the two groups, at the inferential level, the variance analysis with repeated measurements (2×3) was used. This test was used to examine inter-group effect (intervention group) and intra-group effects (time and group and time interaction measurements). The tests were performed at 5% error level using SPSS 22.

RESULTS

According to **Table 1**, 6 (60%) of the control group and 80% of the intervention group were women; 60% of the control and 60% in intervention group had urban settlement. Regarding education, in the control group, 3 (30%) were homemakers, 30% were students, and in the intervention group, 70% were students. Fisher test did not show a significant difference in the ratio of women and men, place of residence, education, and occupation type between the two groups ($p < 0.05$). The two groups were homogeneous in gender distribution.

Table 1: Demographic characteristics of the samples in both intervention and control groups (2016)

Variable	Intervention group		Control group		Statistical tests
	Frequency	N (%)	Frequency	N (%)	
Age	Under 20 years old	(60%) 6	(50%) 5		p-value = 0.129 Test U 0:
	20-30 years	(40%) 4	(30%) 3		
	Older than 30 years	(0%) 0	(20%) 2		
Marital status	Single	(0%) 0	(3/2%) 1		Fisher test p-value=0.139
	Married	(2/93%) 41	(4/81%) 35		
	Widow	(8/6%) 3	(3/16%) 7		
Gender	Male	(20%) 2	(40%) 4		p-value=0.628
	Female	(80%) 8	(60%) 6		
Job status	Worker	(0%) 0	(20%) 2		Fisher test p-value=0.137
	Self-employed	(10%) 1	(0%) 0		
	Housewife	(20%) 2	(30%) 3		
	Unemployed	(0%) 0	(20%) 2		
	Student	(70%) 7	(30%) 3		
Education	Elementary	(10%) 1	(10%) 1		Fisher test p-value=0.324 test U:37.50
	Guidance	(10%) 1	(10%) 1		
	High school	(50%) 5	(30%) 3		
	Student	(30%) 3	(20%) 2		
	Graduated from the university	(0%) 0	(30%) 3		
Residence place	Urban	(60%) 6	(60%) 6		Fisher test p-value=1.00
	Rural	(40%) 4	(40%) 4		
Number of family members	≤4	(20%) 2	(60%) 6		p-value=0.202 test U:33.50
	5-6	(60%) 6	(30%) 3		
	≥7	(20%) 2	(10%) 1		

Table 2: Average social stigma scores in the control and intervention groups

Time	Control			Intervention	
	Mean	SD		Mean	SD
Before	2.44	0.51		2.27	0.37
After	2.40	0.45		1.90	0.18
Follow up	2.40	0.52		1.90	0.15

In terms of age, the results indicated that the highest frequency observed in both groups was for people under 20, so that 50% of the control group and 60% of the intervention group were less than 20. In terms of education, 30% of the control group had high school education and 30% were university graduates. In the intervention group, 50% of the students had high school education; and among the intervention group, 50% had education at high school level. In terms of the number of family members, the highest frequency observed in the control group was from 3 to 4 (60%); and in the intervention group, it was 5 to 6 (60%). The duration of the disease for most of the patients in the control group (50%) and in the intervention group (50%) was 11-20. The results of Mann-Whitney test suggested no significant differences between the two groups regarding age, education level, number of family members and duration of the disease ($p > 0.05$).

According to **Table 2**, in the control group, the mean score for social stigma in the pre-test was 2.44 ± 0.51 , in the post-test 2.40 ± 0.45 ; and three months after the intervention, it was 2.40 ± 0.52 . In the intervention group, mean social score in the pre-test stage was 2.27 ± 0.37 , in the post-test 1.90 ± 0.18 ; and three months after intervention, it was 1.90 ± 0.15 .

According to the results of **Table 3**, there was no significant difference in social stigma scores between the three times of measurement in the control group ($p < 0.05$). However, in the intervention group, mean social stigma scores after intervention and three months after the intervention was significantly less than before intervention ($p < 0.05$). However, there was no significant differences between the mean scores of the families immediately after the intervention and three months after the intervention ($p < 0.05$). Since less score shows less social stigma, it is concluded that in the intervention group, the intervention reduced social stigma immediately after and three months after the intervention, but there was no significant differences between the social stigma values immediately after and three months after the intervention.

Table 3: The results of post hoc test of the interaction between time and group in comparison of mean social stigma scores

Group	First value	Second value	SD	Standard error	P
Control	Before	after	0.044	0.112	1.000
	after	Follow up	0.000	0.042	1.000
	Before	Follow up	0.044	0.114	1.000
Intervention	Before	after	0.376*	0.112	0.013
	after	Follow up	0.000	0.042	1.000
	Before	Follow up	0.367*	0.114	0.014

Table 4: The mean of family performance in problem solving, communication, roles, emotional responsiveness, emotional involvement, behavioral control and general family function in the control and intervention groups

Variable	Group	First value	Second value	SD	SE	P
Problems solving	Control	Before	after	0.033	0.037	1.000
		after	Follow up	-0.025	0.024	0.937
		Before	Follow up	0.008	0.032	1.000
	Intervention	Before	after	0.167	0.037	0.001
		after	Follow up	0.008	0.024	1.000
		Before	Follow up	0.175	0.032	<0.001
Emotional responsiveness	Control	Before	after	0.021	0.052	1.000
		after	Follow up	-0.021	0.024	1.000
		Before	Follow up	0.0000	0.051	1.000
	Intervention	Before	after	0.171*	0.052	0.012
		after	Follow up	0.000	0.024	1.000
		Before	Follow up	0.171*	0.051	0.011
Behavioral control	Control	Before	after	0.044	0.023	0.198
		after	Follow up	-0.039	0.018	0.128
		Before	Follow up	0.006	0.023	1.000
	Intervention	Before	after	0.087*	0.023	0.0009
		after	Follow up	0.033	0.018	0.233
		Before	Follow up	0.111*	0.023	0.000
General family function	Control	Before	after	0.062	0.35	0.291
		after	Follow up	-0.046	0.018	0.056
		Before	Follow up	0.015	0.042	1.000
	Intervention	Before	after	0.173*	0.035	0.000
		after	Follow up	-0.007	0.018	1.000
		Before	Follow up	0.167*	0.042	0.003

According to **Table 5**, there was no significant difference between the scores of the problem-solving, responsiveness, emotional-behavioral control, and general performance of the family in the control group ($p > 0.05$). However, in the intervention group, the mean score of problem solving, emotional responsiveness, behavioral control, and general performance of the family after intervention and three months after the intervention were significantly less than before intervention ($p < 0.05$). Nevertheless, there was no significant difference between the mean scores of the families immediately after the intervention and three months after the intervention ($p < 0.05$).

Since fewer score is a better performance of the family, one can conclude that in the intervention group, the intervention improved the performance of the families immediately after and three months after the intervention. Nevertheless, there were no significant differences between family function in the problem-solving, emotional responsiveness, behavioral control, and general performance scores immediately after and three months after the intervention.

Table 5: Results of post hoc test of interaction between time and group in comparison of mean scores of family functioning assessment in problem solving, emotional responsiveness, behavioral control and family function

Variable	Group	Control		Intervention	
	Time	Mean	SD	Mean	SD
Problem Solving	Before	2.00	0.33	2.43	0.16
	After	1.97	0.36	2.26	0.13
	Follow-up	1.99	0.31	2.25	0.10
Communications	Before	2.10	0.22	2.32	0.30
	After	2.08	0.26	2.26	0.31
	Follow-up	2.09	0.22	2.26	0.30/0
Roles	Before	2.45	0.32	2.53	0.20
	After	2.38	0.41	2.51	0.15
	Follow-up	2.45	0.32	2.50	0.13
Emotional responsiveness	Before	2.19	0.45	2.39	0.23
	After	2.16	0.43	2.21	0.15
	Follow-up	2.19	0.45	2.21	0.12
Emotional conflict	Before	2.47	0.54	2.53	0.31
	After	2.44	0.54	2.51	0.23
	Follow-up	2.46	0.54	2.50	0.23
Behavioral control	Before	2.40	0.22	2.43	0.19
	After	2.36	0.26	2.35	0.16
	Follow-up	2.39	0.23	2.32	0.13
General family function	Before	2.23	0.25	2.42	0.22
	After	2.17	0.28	2.25	0.15
	Follow-up	2.21	0.23	2.25	0.17

DISCUSSION AND CONCLUSION

The basic and fundamental belief of family therapy is that problems of man are essentially interpersonal rather than intra-personal. Therefore, the solution to these problems also requires an interventionist approach directly managing and improving relationships between individuals. Families are not only the most important environmental factors affecting the cognitive development of individuals, but also many of the problems of individuals come from family problems (23).

The results of this study suggested that family therapy interventions based on cognitive-behavioral techniques play a great role in reducing the psychological symptoms and social stigma in patients with SC and their families. The findings of this study showed the frequency distribution of gender of children with SC in the studied families. The results showed that women in the intervention group were more than the control group and the two groups were homogeneous in terms of gender distribution ($p < 0.05$). Most of the subjects in both groups were under the age of 20. The result of Mann-Whitney test showed a significant difference between the two groups ($p < 0.05$). According to the results of intervention and control groups, urban settlers was more than the villagers were, and there was no significant difference in the place of residence between the two groups ($p < 0.05$). In the control group, 30% were housewives and 30% were university students; and 70% were students in the intervention group showing no significant differences between the two groups in terms of job ($p < 0.05$). According to the results, most of the educated people were in the intervention group and there were no significant differences between the two groups ($p < 0.05$). Moreover, in the control group, 3-4 member families; in the intervention group 5-6 member families were the most frequent with no significant difference between the two groups ($p < 0.05$). The duration of the disease for most of the patients in the two groups was 11-20 and there was no significant difference between the two groups ($p < 0.05$). Based on the results of ANOVA and post hoc test, in the intervention group social stigma significantly decreased immediately after the intervention and three months after the intervention, compared to the control group ($p < 0.05$).

The findings showed no significant differences between the scores of problem solving in the control group and intervention regarding post hoc test, and in the in the control group no significant differences were observed in the scores of problem solving in the three stages of assessment. However, in the intervention group, the mean of the problem solving scores after the intervention and three months after the intervention was significantly less than before ($p < 0.05$), which is consistent with the study of H. Mohiadini et al. (15) studying the efficacy of cognitive-behavioral group therapy on improving family process (19).

Post hoc test findings show that family function in communication and roles was not significantly different in the control and intervention groups in the three stages ($p > 0.05$).

According to post hoc test, comparison of the mean of family performance measurement in emotional response, behavioral control and general family performance showed that in the intervention group, the intervention improved the performance of the families immediately after and three months after the intervention ($p < 0.05$). The mean of performance and family performance scores in this dimension in three stages of assessment in the two groups showed no significant differences in the change in the score of this dimension in the three assessments between the groups ($p > 0.05$).

The findings of this study indicated that given the significant effect of interaction between the test time and the intervention group, the change in social stigma during three times of measurement between the three intervention groups and the scores of two variables were not significant on the social stigma scores.

As no research has been done on this issue so far, the findings of this study were not compared for consistency with any of the above studies.

The results of this study showed that CBFP was significantly correlated with some aspects of family function assessment including problem solving, emotional responsiveness, behavioral control and general family function in families with children suffering from SC in the intervention group compared with the control group. This means that family function improved with this intervention in these dimensions, but there were no significant relationship with other subscales of family function assessment such as communication, roles, and emotional involvement ($p < 0.05$).

In addition, in the intervention group, cognitive behavioral intervention was correlated with a decrease in social stigma in patients with SC ($p > 0.05$).

According to the results, social stigma is a completely independent category whose effects have remained constant by controlling the effects of general family performance scores. In spite of the effect of CBFT on reducing the amount of social stigma, this intervention is significant without the effect of general variables of family function. The researcher concludes that the presence of appropriate or inappropriate function does not indicate changes in the social stigma of patients and their families, and CBFT, despite the effect on general family function, without the effect of this variable, on has affected social stigma. According to the results, many items affect the general function of the family, but stigma social is separate from these variables.

REFERENCES

1. Hassell KL. Population estimates of sickle cell disease in the U. S. *Am J Prev Med.* 2010;38(4):S512–521. <https://doi.org/10.1016/j.amepre.2009.12.022> PMID:20331952
2. Zandian Kh. Imprisoned First report on the disease in Ahwaz cell cycle. Ahwaz: Azad Publishing; 2004. PMID:15147965
3. Robin K, Bertil G, Georg B. Diseases of the Blood. *Nelson Text Book of Pediatrics.* New York: Saunders; 2004.
4. John W. Anemia and polyeythemia. In: Kasper (editor). *Harrison's Internal Medicine.* New York: Mc Graw–Hill; 2005.
5. Hinckel C, Chivir K. Bruner and Soodfast in the course of internal nursing and hematologic surgery, Asemi translation. *Sociologist Publishing.* 2014;13(7):52-62.
6. Davidson HJB. Hematology, coagulation and blood transfusion medicine. Translation of Mohseni A, Khademi R, Mohammadi, Shahabi A, Sharifi M. First Edition. Tehran: Artin Teb; 2012.
7. Vahedi P. *Encyclopedia Symptoms and Symptoms in Clinical Medicine - Blood Disease.* Tehran: Aijang Publishing; 2008.
8. Karamati H, Moradi A, Kaveh M. Comparison of psychological aspects of family functioning and control children. *J Educational Innovation.* 2006;4:56-75.
9. Link b & Phelan J. *Labeling and stigma.* New York: Rutledge; 2013.
10. Slade SC, Molloy E, Keating JL. Stigma experienced by people with nonspecific chronic low back pain: A qualitative study. *Pain Med.* 2009;10(1):143–154. <https://doi.org/10.1111/j.1526-4637.2008.00540.x> PMID:19222775
11. Halting AG, Heggdal K, Wahl A. Experiences of self-blame and stigmatisation for self-infliction among individuals living with COPD. *Scand J Caring Sci.* 2010;7(2):426-437. <https://doi.org/10.1111/j.1471-6712.2010.00796.x> PMID: 20534028

12. Corrigan P. How stigma interferes with mental health care. *Am Psychol.* 2004;59(7):614-25. <https://doi.org/10.1037/0003-066X.59.7.614> PMID:15491256
13. Shariati RM. Recognition and treatment of behavioral disorders in children and adolescents. Volume II First Edition. Tehran: Abed; 2006.
14. Goldenberg A, Goldenberg H. Family Therapy, Shahid Browathi translation, Sayyid Q, Arjmand A. Psycho publishing, ninth edition. 2010;5(3):310-315
15. Mohiadini H, Sadeghi Z, Cheragi S, Zare R. The Effectiveness of Cognitive Behavioral Group Therapy on Improving Family Process in Families of Addicted People, Psychological Models and Methods, Third Year. 2013;12:9-1
16. Jafari J. Survey on the degree of socially perceived social sensation in adolescent girls and boys with their particular needs and their relationship with their psychological characteristics [master's thesis]. Marvdasht: Azad University of Marvdasht; 2011.
17. Cullbert GJ, Earnshaw VA, Wegman, MP. Correlates and Experiences of HIV Stigma in Prisoners Living With HIV in Indonesia: A Mixed Method Analysis; *Journal of the Association of Nurses in aids care.* 2015;26(6):743-749. <https://doi.org/10.1016/j.jana.2015.07.006> PMID:26304049 PMCID:PMC4600662
18. Switaj P, Grygiel P, Wciorka J, Humenny G, Anczewska M. The stigma subscale of the consumer experiences of stigma questionnaire. *Comprehensive Psychiatry.* 2013;54:713-719. <https://doi.org/10.1016/j.comppsy.2013.03.001> PMID:23601989
19. Graham C, Maude GH, Serjeant GR. Delayed menarche in homozygous sickle cell disease. *West Indian Med J.* 1986;35(1):18-22. PMID:3716388



<http://www.ejgm.co.uk>