

# Personal social factors influential on the self-efficacy of the patients with thalassemia: A qualitative study

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## Abstract

**Context:** Self-efficacy is one of the important determinants of the behaviors that influence the physical and psychological health among patients with chronic medical conditions.

**Aims:** This study was aimed to investigate the factors that influence the self-efficacy of patients with thalassemia.

**Setting and Design:** This was a qualitative study using a directed content analysis design. The research population consisted of the patients with thalassemia major who referred to the thalassemia ward of the medical training centers in Iran for blood transfusion. The research sample included 16 patients with thalassemia major who were selected using the purposeful sampling method with maximum variation.

**Materials and Methods:** Data were collected from 16 patients with thalassemia major, using a semi-structured interview in 2018–2019.

**Statistical Analysis Used:** Data were analyzed using the Elo and Kyngäs method and MAXQDA10 software (Berlin, Germany).

**Results:** The analysis of the data resulted in 70 initial codes and the emergence of five generic categories including: (1) the performance accomplishments, (2) the vicarious experience, (3) the verbal persuasion, (4) the physiological states, (5) the self-persuasion.

**Conclusions:** Factors influential on the creation and promotion of the self-efficacy of the patients with thalassemia include the performance accomplishments, the vicarious experience, the verbal persuasion, the physiological states, and the self-persuasion. Self-efficacy affects the onset and persistence of behavior. Therefore, designing practical programs containing factors affecting the self-efficacy of the patients with thalassemia seems necessary to improve quality of life and physical and mental health of these patients.

**Keywords:** Beta-thalassemia, Content analysis, Influential factors, Qualitative study, Self-efficacy

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## INTRODUCTION

Thalassemia is a genetic and congenital disease of the blood, and according to global statistics, 5% of people in the Mediterranean and Southeast Asian countries carry its gene. Thalassemia as a chronic illness has serious physical, socio psychological, and economic impacts on patients and their families.<sup>[1]</sup> Physical problems and repetitive and long-term unpleasant treatments can greatly influence the quality of life of patients.<sup>[2,3]</sup>

Thalassemia is not only a health problem for patients and their families but also it is too expensive for the public health system including costs for regular blood transfusions, excess iron excretion from the body, and frequent admissions to hospital.<sup>[4]</sup> The concept of self-efficacy in the patient with thalassemia is also important, and it is related to the capability to achieve some important goals together with their psychological well-being.<sup>[5]</sup>

Self-efficacy has been defined as the judgment of the individuals on their abilities to engage in behaviors that they believe will lead to the specific desired outcomes.<sup>[6]</sup> The concept of the self-efficacy in chronic diseases reflects one's beliefs, ability, and motivation to integrate his/her behavioral, social, psychological, and cognitive skills to deal more effectively with the disease and to tolerate its complications.<sup>[7]</sup> Self-efficacy is an effective factor in improving the quality of life<sup>[8]</sup> and the self-management of chronic disease<sup>[9]</sup> including thalassemia.

Research has supported Bandura's proposal that self-efficacy beliefs are influenced by four main sources of information: performance accomplishments, the vicarious experience, the verbal persuasion, and physiological and emotional arousal.<sup>[10]</sup>

Higher self-efficacy among diabetic patients attending a training class as well as those who did the insulin injection themselves indicates the influence of the performance accomplishment and the vicarious experience on the development of self-efficacy. Diabetic patients suffering from pain, anxiety, and discomfort due to the complications of diabetes have lower levels of self-efficacy which could be proposed as the physiological and psychological arousal influencing self-efficacy.<sup>[11]</sup>

In a study by Ott *et al.*, social persuasion was defined as parental support and encouragement for the adherence to the treatment. The results of this study indicated that self-efficacy could act as a mediating variable in the relationship among parental nonsupportive behaviors and the adherence to one of the components of the

insulin-dependent diabetes mellitus treatment and the blood sugar control. Although the parental nonsupportive behaviors are not seriously a type of social persuasion, these behaviors could be conceptualized as the negative social feedback that undermines self-efficacy.<sup>[12]</sup>

Some studies have shown that the self-efficacy of patients with thalassemia is low.<sup>[13]</sup> Improving self-efficacy is not possible without identifying the factors influencing it. Due to the shortage of studies on the factors influential on the self-efficacy of the patients with thalassemia major, this study was conducted with the aim of identifying the factors influential on the self-efficacy of the thalassemia patients.

## MATERIALS AND METHODS

In this qualitative study, the directed content analysis was used. The directed content analysis is used when the structure of the analysis is based on prior knowledge.<sup>[14]</sup> This type of content analysis is used to validate, refine, or extend a theory or theoretical framework in a new context, and often, it is conducted on a substantial amount of textual data.<sup>[15]</sup> The research population consisted of the patients with thalassemia major who referred to the thalassemia ward of the medical training centers of Shahid Ghazi (in Tabriz) and Bu Ali Sina (in Sari) for blood transfusion. This study consisted of 16 patients with thalassemia major who were selected using purposeful sampling method from these two educational and therapeutic centers in 2018–2019, while observing the maximum variation. The sampling continued until the data were saturated, i.e., there was no new code and all the conceptual levels had been completed. As far as the researcher knows, the data were saturated after the 13<sup>th</sup> interview and the other three interviews were conducted to ensure that no new data were available. The demographic characteristics of the participants are presented in Table 1. The location of the individual face-to-face interview was determined by the participants and they were interviewed in private locations between 30 and 65 min.

To data collection, semi-structured interviews were conducted using open-ended questions based on the purpose of the study and the guided questions on the generic categories extracted from Bandura's social learning theory, and the previous research. The interview questions are shown in Table 2. All the interviews were audio recorded.

## Rigor

To ensure the rigor and the reliability of the data, the criteria used by Lincoln and Guba were used in this study.<sup>[16]</sup> To validate the data, the extracted original codes

were returned to the participants, so that the correctness of the researchers' interpretation of what they said could be confirmed. It was also attempted to validate the data by considering the maximum variation in the sampling. Methods of determining the credibility in this study included the prolonged engagement of the researcher with the data, the peer debriefing, and member checking. Transferability of the findings was established through presenting the quotes of the participants in the same way as they were stated, as well as providing the demographic characteristics of the participants in detail so that the reader could decide on the use of the results of the study. Moreover, the conformability of the data was assessed through the external check, i.e., parts of the interview transcript along with the relevant codes and the emerged categories were examined by two examiners familiar with the qualitative research and one other examiner who was a specialist in the field of the self-efficacy. To construct the audit trail of the research, the researcher accurately recorded and reported the research process and procedures, so that the others could follow the research.

### Ethical considerations

This study was approved by the ethics committee of Tabriz University of Medical Sciences with the ethical code

**Table 1: The demographic characteristics of the participants**

Sex	Age	Education	Marital status	Job
Male	18	High school	Single	Unemployed
Female	17	High school	Single	Unemployed
Male	26	BA	Single	Web designing
Female	35	Diploma	Married	The board of directors of NGO
Male	34	Primary school	Married	Worker
Female	37	BA	Married	Government employee
Male	37	Guidance School	Married	Freelance job
Female	21	Diploma	Married	Housewife
Female	36	Diploma	Divorced	Freelance job
Female	27	Diploma	Single	Freelance job
Male	30	BA	Single	Private center employee
Female	38	BA	Single	Private center employee
Female	27	MA	Married	Student
Male	22	Diploma	Single	Freelance job
Female	18	High school	Single	Student
Female	22	BA	Single	Unemployed

NGO: Nongovernmental organization

**Table 2: Interview questions**

Generic category	Related questions
Performance accomplishments: Previous mastery experiences form doing the different tasks	What is the effect of success in dealing with the previous works on the beliefs in your ability in dealing with the works?
Vicarious experience: Seeing the others during the successful performance in the different tasks	What is the effect of the others' success on the beliefs in your ability to do the tasks?
Verbal persuasion (and the other types of the social influence): Saying this point to the related individual that he has the prerequisite abilities to achieve what he wants to achieve	Which sentences made you believe that you have the ability to deal with various tasks?
Physiological-emotional arousal: The level of the arousal while on a special duty	What is the effect of your physical and psychological condition on your belief in your ability to deal with activities?
Open-ended question	In your viewpoint, what was the reason behind your belief that you could do the works related to the treatment, sport, chores, and educational activities?

of IR.TBZMED.REC.1397.616. After a brief and clear explanation about the research, the written consent was completed and signed by the participants to ensure that they have informed participation. To record the participants' statements, their permission was obtained and they were assured that their statements would be kept confidential.

### RESULTS

Data were analyzed using the directed qualitative content analysis suggested by Elo and Kyngäs.<sup>[14]</sup> After the interviews were recorded and transcribed verbatim, the researcher studied the text carefully to identify, based on the data in the text, concepts, and patterns. The content analysis was started with selecting the unit of analysis containing the whole interview. Before starting the coding, the whole text was read several times, so that the researcher fully understood the data, was immersed in the data and got a comprehensive sense of the whole. Then, the data were broken down into semantic units. The semantic units were reviewed several times and then, the appropriate codes for each semantic unit were written. In this type of content analysis, the initial coding begins with a theory or findings of similar researches.<sup>[17]</sup>

In the next step, the codes were categorized in terms of semantic and conceptual similarity and they became as small and compressed as possible. The second stage involves the development of the analysis matrix. The unlimited matrices were used for the categorization of the themes so that the other items that the participants mentioned could be coded within the interviews' transcripts.

In this study, after the initial coding using the predetermined codes based on Bandura's social learning theory, the analysis of the data resulted in 70 initial codes and the emergence of 4 predetermined generic categories including "the performance accomplishments," "the vicarious experience," "the verbal persuasion" and "the physiological states" based on the mentioned theory and one new generic category, i.e., "the self-persuasion."

The subcategories, the generic categories, and the main category extracted in this study are presented in Table 3. These categories would be described and explained in what follows.

**Performance accomplishments**

Performance accomplishment in the patients with thalassemia major included the success in doing the daily activities, education, sport, job, medical treatment, and marriage, which could influence their belief in doing the activities to achieve a specific goal.

*Success in the previous performance*

The patients with thalassemia major get the confidence to do the activities through the success in the previous activities. If they succeeded in their previous tasks, they would be more confident in their future activities. These patients increase their efficacy based on their mastery experiences. The strong efficacy expectations achieved through the success could be generalized to the other situations, and the patients may demonstrate the efficacy in doing the other tasks.

“In addition to myself, I can handle the problems of the other children. Reducing the children’s problems, makes me feel like I can do the things” (P: 4).

“My spouse who has thalassemia, I handle his/her heart problems, it gives me a sense of power” (P: 4).

*Failure in the previous performance*

If the patients with thalassemia major failed in their previous activities, the belief in the efficacy would not be developed among them. The amount of their belief in success diminishes with the failure in the previous tasks, so the individual thinks that he does not have the required efficacy in doing the responsibilities.

“I went to exercise with my friends two or three times but I failed, I believe that I can’t exercise” (P: 15).

“Because I didn’t continue my education, I hold a diploma. This is my job. I didn’t have any progress in the family; I feel I can’t do the works” (P: 10).

**Vicarious experience**

Observing the performance of another patient who performs a certain behavior can influence the patient with thalassemia’s belief in the efficacy because he directly observes the success of a patient in the similar situations.

*Mastery experiences of the peer*

Observing a model by a patient with thalassemia will be more effective than advising the patient what to do and he would be capable to do it. Through expressing what the individual should do, his knowledge will be improved, but the opportunity to observe a model at the same condition could lead to a better result in the patient’s efficacy.

In line with the role of the vicarious experience of the peer in developing the self-efficacy, a participant stated: “When the problems become acute, you talk to a peer, you see he had this problem previously and he could pass it. This could make you energetic. When I had heart problem, he could help me a lot to come to term with the fact that I can live again. I can overcome the illness” (P: 9).

*Mastery experiences of the patient’s family members*

The social model will work more effectively if it becomes closer to the observer’s condition. The model could be a patient’s peer or another member of his family with this illness. The mentioned family member is closer to the patient with thalassemia than the peer because their family statuses are also similar. Hence, one participant who had difficulty communicating with others said:

“The most influential person was my brother. That I think I can communicate more with him than the others” (P: 2). Another participant said in this regard: “I believe I can do my father’s office works. My sister was very agile, very

**Table 3: The subcategories, generic categories, and the main category**

Sub-category	Generic category	Main category
Success in the previous performance	The performance accomplishments	Personal and social Factors influential on the self-efficacy
Failure in the previous performance		
The successful experiences of the peer	The vicarious experience	
The successful experiences of the family members of the patient		
The verbal persuasion of the family	The verbal persuasion	
Obtaining the community’s incentives		
The peer’s verbal persuasion		
The treatment staff’s verbal persuasion	The physiological states	
Physical problems		
Psychological problems	The self-persuasion	
Accepting the reality		
Accepting the God’s will		



active. I learned from her these things and I was influenced by her. She helped me a lot” (P: 16).

### **The verbal persuasion**

The function of the social persuasion is the social encouragement and support of the patient with thalassemia to achieve the goal.

#### *The family's verbal encouragement*

The family's verbal encouragement could have an effective role in developing their children's self-efficacy. Here is an example of the parents' encouraging statement that the participant described it as a factor which develops the self-efficacy: “Maybe I think my parents grew me up in this way from the beginning, and they encouraged me in my works. They brought me to a point of understanding where I would never ever think about my own disease, and I would believe that I could do my works” (P: 6).

#### *Obtaining the community's incentives*

Compliment or its lack from the individuals whom the patient with thalassemia major interacts at the community, school, and workplace can influence his/herself-efficacy to achieve their goals. About the incentives obtained in the community, a participant indicated: “Our teacher said you are clever, you will be successful in your studies. I feel I can study, and I read my lessons” (P: 15).

#### *The verbal persuasion of the peer*

The peer's encouragement and persuasion can help a patient with thalassemia to develop the belief in himself that he has the ability to cope with the problems, obstacles, and difficulties when confronted with them. Furthermore, he could develop the feeling that he can resolve the problems.

In this regard, a participant said: “When I had heart problem, I was terribly bad. My friend said my brother was like you, somebody else was like you, and they all defeated the illness... He could help me to come to term with the illness, yeah I could... I could defeat the disease... that it became better” (P: 9).

#### *The encouragement of the treatment staff*

The encouragement and persuasion by the treatment staff are effective in increasing the adherence of the patients with thalassemia to the treatment. They encourage the patients to believe that they can handle their treatment activities. About the encouragement of a nurse in the thalassemia ward, a participant said: “the nurses help us to have the working morale. They always tell us you can do your chores and follow-up your treatment” (P: 8).

### **The physiological states**

Because of the physical and psychological problems that the patients with thalassemia major suffer from them, their success in their performances is diminished. Repeating these failures following the specific physical and psychological conditions can reduce their self-efficacy and belief in their ability to perform their duties correctly and completely.

#### *The physical problems*

Patients with thalassemia major are experiencing physical problems, including the heart, the glands and the bone diseases and fatigue due to the increased ferritin. Heart disease makes them unable to perform the physical activities, leading to a low belief in their future activities. A participant who suffers from the complications of the increase in the ferritin said, “High ferritin leads in many complications for us, all of these make you feel that you could not work, you cannot exercise” (P: 1).

#### *The psychological problems*

The rate of depression is high among the patients with thalassemia major. The facial change and the growth disorders are the main reason of depression in these patients. The depression can reduce the individual's self-efficacy.

In this regard, a participant said: “if he becomes depressed, the problems are accumulated and piled up; there is also the illness, it will be harder; it influences one's belief” (P: 13).

### **Self-persuasion**

Through persuading themselves, patients with thalassemia major try to convince themselves that their physical conditions are an inevitable part of their life, that they must continue their life, plan for life, and do activities and duties. They try to manage their lives under these conditions, and to this end, they reinforce their belief about doing the activities and consider themselves efficacious.

#### *Accepting the reality*

The patients accept that they are sick and this illness brought about some problems for them. They have to deal with these problems to survive. In their viewpoint, dealing with the disease means that they should be able to do their activities with this physical ability, despite all the problems. By comparing themselves to the healthy people, they find out (accept) that the disease has not created the conditions that make them much more incapable of doing things than the healthy people, rather by accepting their present potential they believe in doing the works ahead.

About the influence of accepting the disease on the belief in the self-efficacy, one of the participants commented: “We have to accept that we have this illness. Hence, we have to understand it, that this is a disease, there are some ways, some methods for coping with it. I feel I can do some work because I understand it” (P: 11).

#### *Accepting the God's will*

They take the power of doing the activities from their spiritual beliefs. They are confident that God helps them in doing the activities and achieving the goals. They consider their disease as a kind of the divine experiment, that they should be proud of it, and God helps them to pass it. This belief makes them believe that they can be powerful in their affairs with the help of God. On the influence of his religious beliefs in self-efficacy, a participant said: “I believe I can do my works, and I created this feeling in myself, because it was God's will, God wanted to test me this way” (P: 4). And another participant said: “what made me feel I can do my works is God's favor, as I always say” (P: 9).

## DISCUSSION

In the present study, the factors influencing the self-efficacy of these patients were investigated. The success and failure in the previous performance, the mastery experiences of the patient's peer and the family members, the family encouragement, obtaining the community incentives, the peer's encouragement, the verbal persuasion of the treatment staff, the physical and psychological problems, acceptance of the reality and God's will were of the most important factors which these patients identified as the most influential factors on the self-efficacy. They are named as “the performance accomplishments,” “the vicarious experience,” “the verbal persuasion,” “the physiological states” and “the self-persuasion.”

Bandura noted that people's self-efficacy leads to the beginning and the continuation of the activities.<sup>[18]</sup> He also presents performance accomplishment as the most influential factor on the self-efficacy.<sup>[10]</sup> The results of a study by Moghadam *et al.* showed that the home-care training program improves the self-efficacy of thalassemia patients. In this study, it seems that improving self-efficacy is the result of the successful performance of patients in the skills learned in the home-care training program.<sup>[19]</sup> Our study also showed that the skillful and successful performance of behavior by the patients would increase their self-efficacy, and the performance accomplishment acts as a strong and effective factor on the self-efficacy. The cross-cultural investigation of the teachers'

self-efficacy in Finland and Japan showed that mastery experiences could play an important role in the teachers' self-efficacy in both countries.<sup>[20]</sup> The results of the present study are align with the results of Yada *et al.*, With the difference that in the mentioned study, the sources of teacher self-efficacy were examined, but in the present study, the sources of self-efficacy of thalassemia major patients were explored.

The second source of information is social modeling. Observing those who are successful in doing the activities is effective on one's self-efficacy as a vicarious experience. Clark and Zimmerman referred to an asthma patient who could overcome his fear by observing another asthma patient who succeeds in basketball. Overcoming the fear of this patient is based on the vicarious experience.<sup>[21]</sup> In our study, patients also acknowledged that the success of the peer either from the family members or from the patients who were the nonfamily members makes them believe that they can overcome their problems and obtain the belief in being powerful to do the works. The same as our study, the findings of Clark and Zimmerman showed that vicarious experience is one of the factors affecting self-efficacy. In the present study, the belief in performing therapeutic activities of thalassemia patients was affected by the social model and in the Clark and Zimmerman study, the belief in performing sports activities was influenced by the social model.

Sawtelle *et al.* used self-efficacy to predict the women's success in basic physics. Its results indicated that the vicarious experiences variable predicts the female students' success in basic physics. The students with more vicarious experiences could pass the course than the students with less vicarious experiences.<sup>[22]</sup> In Zhang and Ardasheva study, the vicarious experience was able to predict the self-efficacy of Chinese adults in English public speaking.<sup>[23]</sup> Participants in both studies and the present study cited the vicarious experiences are effective in one's efficacy. However, the participants of the two studies expressed the social model affecting their academic self-efficacy and in the present study, patients pointed to the social model role in their self-efficacy.

The results of a study by Lau *et al.* showed that social persuasion has a stronger predictive role than the other three sources of self-efficacy in Elementary Student's mathematics and perceived responsibility for learning self-efficacy.<sup>[24]</sup> Zheng *et al.* examined the role of the self-efficacy resources including the social persuasion on the students' self-efficacy. The results of the study of Zheng *et al.* also showed that social persuasion has

played the most important role in predicting the students' academic self-efficacy.<sup>[25]</sup> The difference between these two studies and the present study is related to The area of self-efficacy of the participants, but in all three studies, the role of social persuasion is mentioned.

In the study of Ortega and Wang, it was shown that the mean heart rate and heart rate variability of athletes have a positive relationship with their self-efficacy. Heart rate variability is higher in athletes with high self-efficacy.<sup>[26]</sup> These results verified Bandura's claim that physiological status is an important source of self-efficacy.

Alipour *et al.* studied the effect of the relaxation techniques on pregnant women's depression, anxiety, and stress, based on the theory of self-efficacy. The results indicated the increase in the self-efficacy, pointing out the effect of reducing depression, anxiety, and stress on developing and improving the self-efficacy.<sup>[27]</sup> This is the issue that the participants of our study mentioned about the effectiveness of the physiological conditions on developing the self-efficacy. The result of the study of Alipour *et al.* studies and the results of the present study confirm the Bandura's hypothesis on the impact of the physiological and emotional states such as anxiety, stress, arousal, and depression on the self-efficacy.<sup>[28]</sup>

One of the factors that the patients with thalassemia mentioned as a factor influential on developing the self-efficacy was the self-persuasion. Through accepting their disease and the God's will, they convince themselves that they must return to their normal life activities and they must continue. According to the patients' statements, they believed that this is their physical condition and they get to the belief that they could handle their affairs and they could do their works, considering their religious teachings. Based on these teachings, the disease is part of the divine experiment that they should come up with it through patience and God does not leave them alone in their problems. Furthermore, they believe that God gives them the necessary power to continue life and work alongside their efforts. Aghayousefi *et al.* were to investigate the effectiveness of the self-encouragement training on the cognitive emotion regulation strategies among household-headed females. The results showed that the self-encouragement or in other words, self-persuasion could lead to the psychological empowerment of the household-headed females.<sup>[29]</sup> Safarinya and Mehmannaavazan also found that the self-encouragement training led to the improvement of the psychological abilities such as the self-efficacy and assertiveness of the household-headed females.<sup>[30]</sup> The comments of the present study's participants about the

influence of the self-persuasion on developing self-efficacy confirmed the results of Aghayousefi *et al.*, and Safarinya and Mehmannaavazan.

The limitation of this study was the lack of ethnic diversity of the participants. We suggest that the participants with more ethnic diversity to be selected in future studies. The aim of this study was to explore the factors affecting the self-efficacy of patients with thalassemia major, which based on the participants' statements, personal factors such as performance accomplishments, the physiological states and the self-persuasion and social factors such as the vicarious experience and the verbal persuasion are effective on their self-efficacy.

## CONCLUSIONS

Factors influential on the creation and promotion of the self-efficacy of the patients with thalassemia include the performance accomplishments, the vicarious experience, the verbal persuasion, the physiological states, and the self-persuasion.

Self-efficacy affects the onset and persistence of behavior. Factors influential on the self-efficacy mentioned by Bandura should be considered, along with the self-persuasion factor found in this study to improve the quality of life and the self-management of the patients with thalassemia.

Therefore, we suggest using these factors in designing of quantitative studies interventions to improve self-efficacy, quality of life, and physical and mental health of patients with thalassemia major these patients.

## Conflicts of interest

There are no conflicts of interest.

## Authors' contribution

Leila Valizadehand SoghraHassaniNarenjbaghi conceived the idea the project. All authors designed the project. SoghraHassaniNarenjbaghi collected the data. All authors participated in the data analysis, interpretation of the results and critically reviewed the manuscript. All authors read and approved the final manuscript.

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