

# Effect of Narration and Painting Methods on the Self-concept of Children with Thalassemia Major before and Three Months after Intervention: A Randomised Clinical Trial

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## ABSTRACT

**Introduction:** Children with thalassemia are at risk for mental and behavioural disorders due to their reduced quality of life. Interventions to improve their mental health have shown good outcomes. The narration and painting intervention approaches have a positive effect on self-concept.

**Aim:** To compare the effect of two methods of narration and painting on the self-concept of children with thalassemia.

**Materials and Methods:** This randomised clinical trial with post-test/pretest method was carried out on 35 children with thalassemia major, admitted to hospitals affiliated to Tehran University of Medical Sciences, Iran. Children who met the inclusion criteria were divided into two groups based on the intervention: narration (n=19, six sessions of 90 minutes) and painting (n=16, six sessions of 30 minutes, drawing whatever they wanted). At the end of the first session, and three months later, the Piers-Harris questionnaire was used for self-concept

assessment. To analyse the data Paired t-test and Chi-squared test were used.

**Results:** The mean age in the painting group was 12.4 years, and in the narration group was 12.6 years. Girls constituted 43.9% (n=9) in the painting group, and 31.6% (n=6) in the narration group. The mean score of self-concept in the children belonging to the narration group was 46.46±7.74 before the intervention, which increased to 48.10±9.61 after the intervention (p=0.579). In the painting group, the mean score of self-concept in the preintervention phase was 42.44±6.30, and increased to 48.87±9.41 after the intervention (p=0.033).

**Conclusion:** The implementation of two methods of narration and painting in children with thalassemia major had a favourable effect on their self-concept. Considering that various psychotherapy methods are used to help patients to adapt to complications of their disease, narration and painting therapies as a non invasive, affordable and low-cost methods can also be used in this regard.

**Keywords:** Paediatric patient, Piers-harris questionnaire, Psychotherapy

## INTRODUCTION

The term thalassemia includes all types of hereditary blood disorders that are caused by defects in the production rate of specific globin chains in haemoglobin [1]. This genetic defect leads to the reduction or non production of normal beta-globin chains, which leads to imbalances in the alpha and beta chains and are mainly found in the Mediterranean, Middle Eastern, South Chinese and some African countries [2,3].

Thalassemia is an autosomal recessive disorder that is caused by a microcytic hypochromic anaemia (small red blood cells) due to the congenital defect of the human globin gene, resulting in major or complete loss of corresponding globin chain synthesis, and an imbalance between the chain-linked alpha and beta chain in haemoglobin. Thalassemia is classified into two major types, including  $\alpha$ -thalassemia and  $\beta$ -thalassemia [4]. Most types of thalassemia are inherited and their severity varies significantly. Five percent of the world's population has thalassemia, and most of them are asymptomatic [5].

According to the International Thalassemia Association (ITA), only around 200,000 people worldwide are diagnosed with thalassemia major and receive regular care and treatment [6]. Studies show that people with chronic diseases adapt better with their disease if they have a positive self-concept [7-9].

Self-concept is one of the main components of Roger's humanistic personality theory and includes a set of features that a person perceives as a unique entity. Self-reflection is achieved through social relationships. Rogers believed that, due to the interaction of a person with his or her surrounding, the concept of self, which is

widely based on the evaluations of others, expands. People evaluate their individuality according to what others think, not what they feel themselves. According to Rogers hypothesis, people pay attention to their evaluation by others, not the evaluation by themselves. This strong need makes people to judge themselves and others [10]. Self-concept is described as a set of beliefs and attitudes that people have about themselves. It is also a hierarchical and multidimensional structure [11], which is influenced by several important factors including academic success, economic success, health, emotional success, adaptability, and happiness [12]. Some events and daily situations may change the level of self-concept over time. In other words, man is not born with self-concept, but self-concept is obtained as a result of social interaction with others [13]. Today, different psychotherapy methods are suggested for the treatment of thalassaemic patients [14].

Narrative therapy is one of the methods of psychotherapy, based on reporting events and storytelling in an individual's life. Everyone tends to narrate their life like a story that has a beginning and an end. Narrative therapy was developed by Australian family therapist, Mike White and his New Zealander colleague David Epstein. From the White's perspective, therapeutic narration is the use of a set of methods for understanding the stories of people, breaking the structure and rewriting the stories with the help of a therapist [15]. Narrative therapy is a behavioural status in which, people record their deepest thoughts and emotions about a stressful event [16]. The overall attitude of narrative therapy is based on the concept that, people's identity is formed based on stories that narrate their lives [17]. Research findings show that narration has a range of benefits, including promotion of health, psychological well-being, and psychological and body function [18].

The art of painting was introduced as an approach to psychotherapy by Margaret Nangerbeck, who stated that the articulation of art could be the subject of psychotherapy [19]. From the perspective of psychoanalytic theory, painting is a clinical-projectionist activity. It is through painting that a person can express what is in his unconscious and possibly causes his discomfort and anxiety [20]. Painting and art therapy are used as a mental-physical intervention that uses the power of mind to influence the body in ways that encourage and stimulate health and well-being [21].

Because thalassemia major reduces the quality of life and causes mental disorders, efforts have been made in recent years to improve the patients' quality of life. For example, individual psychotherapy with a focus on self-efficacy [22], positive psychotherapy [23] and positive thinking program [24] have been proposed as approaches to improve the quality of life of thalassemia major patients.

Thus, in this study, the effect of narration and painting methods on the self-concept of children with thalassemia major was investigated and compared. The self-concept score were recorded immediately after the first session of the intervention and compared with scores after three months.

## MATERIALS AND METHODS

The current randomised clinical trial was conducted in thalassemia sections of hospitals affiliated to Tehran University of Medical Sciences, during September 2017-March 2018. The trial was approved by Iranian Registry of Clinical Trials (IRCT) (clinical trial code: IRCT20101013004922N3).

**Sample size calculation:** The sample size was estimated to be 35, based on the following formula:

$$n = \frac{2(Z_{1-\alpha} + Z_{1-\beta})^2}{\Delta^2} + 1$$

$$n = \frac{2(1/96 + 0/84)^2}{(0/7)^2} + 1 = 35$$

$\alpha=0.05 \rightarrow Z=1.96$

$0.84=Z \rightarrow 0.8=$ Statistical power

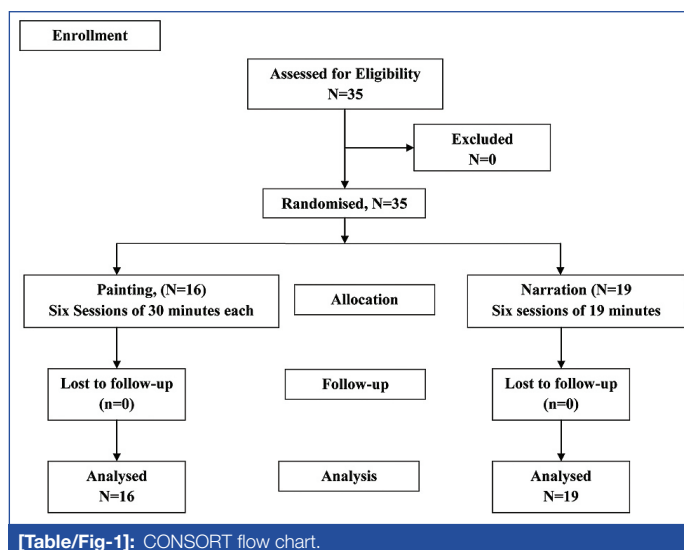
Assumed effect=0.7

**Inclusion criteria:** All 9-16 years old children with thalassemia major, having no psychological disorders such as depression, psychosis, personality disorder, having no autism, having no acute or chronic disease other than major thalassemia, having literacy and reading skills, having no experience of stressful conditions such as parent's death in the past, and willing to participate in the study were included.

**Exclusion criteria:** Children who died during the treatment, not willing to continue with the study, being absent in two successive sessions, and occurrence of any crisis or stress affecting the child's self-concept during the study were excluded.

An informed consent for participation in the research was completed by the parents of subjects, and they were assured that their information would remain confidential. Subsequently, the samples were randomly (lottery method) divided into two groups of narration (19 children), and painting (16 children) [Table/Fig-1].

A demographic questionnaire and Piers-Harris self-concept questionnaire were completed by the research samples before the intervention [25]. At the end of the sessions, the post-tests were carried out. Data were gathered three months since the first session of intervention in both groups and the results were analysed.



[Table/Fig-1]: CONSORT flow chart.

## Narration Method

The narration group took part in six sessions (90 minutes each) [Table/Fig-2]. Thalassemia patients underwent interventions when they went to medical centers to receive blood. They visited the center twice a month, during which time narration and painting interventions were performed. The interventions were performed by the researchers.

Sessions	Procedure
First session	Explain the purpose of narration, the rules and the predictive benefits of this method
Session 2: Describe the problem	The clients were asked to write about their concerns, and at the end of the day, the investigator encouraged them to write the effects of these problems on their life.
Session 3: Name the problem	The summary of previous session was presented and the previous session was reviewed. After encouraging the samples to write their original narrative, the researcher asks them to choose the name or particular names for their problem. The name implies the increased accuracy and focus on problem and enables the person to feel more control over his problem.
Session 4: Problem outsourcing	Summarise the previous session and reviewing the past session assignments. The goal of this naming is difficult to extrapolate, and one could be able to identify his identity with the problem that ha has been experiencing problem in his life. After being able to extract the story of patient's problem, he was asked if he was able to overcome the problem.
Session 5: Problem Breakdown	Review the summaries and assignments of the past sessions. At this meeting, when the child talked about his or her experiences, the researcher put the child in a position to compare his successful experiences with the current problem that occurred in the same circumstances, and finally, made some comments.
Session 6: Rewrite the life story	After summarising the past sessions, the child was asked to write a new story of his/her life.

[Table/Fig-2]: Narration method procedure outline.

## Painting Method

The painting group was provided with the white A4 sheets and various tools (pencil, pen, watercolor, etc.). They were asked to draw whatever they wanted about topics such as best events, worst events, relationships with friends in school, parent-child relationship, a mental image of own self, position of child in school and family, etc. At the end of each session, children were asked to explain their drawings, meanwhile the researcher gave them positive feedback on their drawings after consultation with the research team. There were six sessions that lasted for at least 30 minutes each.

## Measures

1. Demographic information questionnaire included variables such as age, sex, education, place of residence, history of other diseases, frequency of blood transfusion per month, other family history of thalassemia, and a syntax of access to proper care and treatment of thalassemia.

2. Piers-Harris self-concept scale [25] is a questionnaire that contains 80 questions. It was designed as a personal report on how children and young people feel about themselves. The questions of this scale are scored in both positive and negative direction. The high score on this scale reflects positive self-evaluation, and low score indicates a negative self-evaluation. Each questionnaire is a three-part questionnaire with 'yes' or 'no' options. This scale covers 6 aspects; 1) behaviour, 2) school, cognitive and mental status, 3) appearance and physical characteristics, 4) anxiety, 5) popularity, and 6) happiness and satisfaction. The scores indicate positive and negative self-concept and the higher score represents the higher level of self-concept (in the subscale of anxiety in the direction of photo), and zero score indicates the high level of anxiety. The maximum score in the self-concept scale is 78, and the minimum score is 0.

The reliability of the Piers-Harris self-concept scale was found to have a Cronbach's alpha coefficient of 83%, indicating high reliability.

## STATISTICAL ANALYSIS

Statistical Program for Social Sciences (SPSS) software version 22.0 was used for analysis. Paired t-test and chi-squared tests were used to analyse the data. A p-value <0.05 was considered as significant level.

## RESULTS

As shown in [Table/Fig-3], there was no significant difference between the studied demographic variables such as age, gender, level of education, place of residence, access to care information, blood transfusion and family history in the painting and narration groups ( $p>0.05$ ).

Variables		Painting	Narration	p-value (Paired T test)
		n (%)	n (%)	
Age in years	9	1 (6.3)	2 (10.5)	0.501
	10	3 (18.8)	1 (5.3)	
	11	3 (18.8)	3 (15.8)	
	12	1 (6.3)	4 (21.1)	
	13	1 (6.3)	2 (10.5)	
	14	4 (25)	1 (5.3)	
	15	2 (12.5)	5 (26.3)	
	16	1 (6.3)	1 (5.3)	
	Mean age	12.4±2.13	12.6±1.85	0.869
Gender	Girl	9 (43.8)	6 (31.6)	0.142
	Boy	7 (56.2)	13 (68.4)	
Education	Elementary	8 (50)	8 (42.1)	0.640
	Junior	8 (50)	11 (57.9)	
Place of residence	City	16 (100)	18 (94.7)	0.352
	Village	0	1 (5.3)	
Access to healthcare information	Friends	6 (37.5)	6 (31.6)	0.790
	Media	2 (12.5)	4 (21.1)	
	Peer patients	8 (50)	9 (47.4)	
History of any previous disease	Yes	0	1 (5.3)	-
	No	16 (100)	18 (94.7)	
Splenectomy	Yes	0	0	-
	No	16 (100)	19 (100)	
Blood transfusion	Once a month	13 (81.3)	14 (73.7)	0.595
	Twice a month	3 (18.8)	5 (26.3)	
Family history	Positive	2 (12.5)	1 (5.3)	0.443
	Negative	14 (87.5)	18 (94.7)	
Member of Thalassemia association	Yes	16 (100)	18 (94.7)	0.352
	No	0	1 (5.3)	

**[Table/Fig-3]:** Demographic characteristics and information related to children with thalassemia major.

As can be seen in [Table/Fig-4], the mean score of self-concept before and after the narration intervention was not significant ( $p=0.579$ ), however, the mean score of self-concept before and after the painting intervention was significant ( $p=0.033$ ).

Variables	Before	After	p-value
Narration group (A)	46.46±7.74	48.10±9.61	0.579
Painting group (B)	42.44±6.30	48.87±9.41	0.033
p-value	0.254	0.974	

**[Table/Fig-4]:** Self-concept in the children with thalassemia major before and after the interventions.

Therefore, it is concluded that painting methods are effective in enhancing self-concept in children with thalassemia.

## DISCUSSION

The purpose of this study was to investigate the effect of two methods of narration and painting on improving the self-concept of children with thalassemia major and to compare the effect of these two methods on improving the self-concept of these children. The results showed that method of painting can be used as a tool to improve the self-concept of children with thalassemia major.

Thalassemia major is a haematologic and chronic disorder caused by haemoglobinopathy that severely affects the quality of life of affected children [26]. The need for special medications, medical care, and the concern of premature death cause feelings of hopelessness and isolation in this group of patients [27]. Therefore, it is essential that their quality of life be improved with non pharmacological interventions. In these patients, self-concept, which is one of the most important psychological issues facing the child, requires a special program. In the present study, it was shown that painting intervention in children with thalassemia major improves their self-concept scores. Painting is a tool for art therapy and it has been stated that with painting, a child can depict the events of his life and, by combining the creative elements of art and imagery, promote a sense of mastery and power [28]. This intervention can increase visual perception skills and consequently increase learning by strengthening the dorsal part of the right hemisphere of the brain and also activating the two hemispheres [29].

The effect of narration on the improvement of mental disorders such as depression [30], the school behaviour of girls with attention-deficit / hyperactivity symptoms [31], and distress [32] has been shown. However, this approach did not show significant differences in the paired t-test in the present study, which may be due to the lack of integrity of the samples in the pretest completion of the questionnaire caused by the fear and concern of the samples from being labeled by the community. Nevertheless, in the painting group, immediately after the intervention, the drawing method improved self-concept of children with thalassemia major ( $p=0.033$ ). It seems that the method of drawing is a good idea in children suffering from thalassemia major. This has been shown in other studies. For example, Warson E et al., [33] found that art therapy for American Indian cancer survivors was useful in developing the overall workshop format. Also Kim MK and Kang SD [34] showed that painting therapy is useful in patients with post-stroke disabilities, which also consistent with the results of present study. However, the comparison of these two interventions in paediatric patients with thalassemia major has not been done so far and the current study showed that painting intervention is more effective in promoting self-concept than narration.

Considering the fact that the purpose of narration therapy is to focus on wrong beliefs and change the life narrative, the present study participants were able to find a new perspective about themselves, which in turn decreased their negative and unhealthy thoughts and attitudes and finally improved their self-concept. Also, in the painting group, children began to express their feelings and beliefs about themselves and the world around them more clearly through

painting. Moreover, the release of excitement and the correction of self-image with the help of researcher improved the mental image and self-concept of children.

Therefore, the results of this study emphasise the need to use painting approaches by healthcare providers of children with thalassemia major and can help them to use appropriate approaches and increase the effectiveness of treatments.

### Limitation(s)

The use of self-assessment tools is one of the limitations of the present study. Also, in this study, some participants could not finish the discussion due to time liness, so they were excluded from the study. Also, in the current study, the interventions were applied individually.

### CONCLUSION(S)

The results of this study showed that, the implementation of two methods of narration and painting in children with thalassemia major had a favourable effect on their self-concept. Considering that various psychotherapy methods are used to help patients to adapt to complications of their disease, narration and painting therapies as a non invasive, affordable and low-cost methods can also be used in this regard. According to the findings of this study, the medical team, especially the nurses who are in a direct communicating with patients, can consider these psychotherapy methods as the ways to improve the patient's self-concept.

### Acknowledgement

The authors would like to thank the authorities of the hospital where the study was carried out for their cooperation in the study procedures. In addition, the authors appreciate all the participants in the study.

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#### PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: Oct 07, 2021
- Manual Googling: Apr 26, 2022
- iThenticate Software: Apr 28, 2022 (10%)

#### ETYMOLOGY: Author Origin

#### AUTHOR DECLARATION:

- Financial or Other Competing Interests: Funded by Islamic Azad University
- Was Ethics Committee Approval obtained for this study? Yes
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: Oct 02, 2021

Date of Peer Review: Jan 03, 2022

Date of Acceptance: Apr 27, 2022

Date of Publishing: Jun 01, 2022