RESEARCH ARTICLE

# MOOD DISORDER IN GREEK SCHOOL-AGE CHILDREN WITH THALASSAEMIA MAJOR: CONTRIBUTING FACTORS

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**Abstract**

**Introduction:** TChildren with certain factors, such as poor social integration, experience a higher rate of depression symptoms. School-age children with thalassemia major (SCTMs) are thought to have a high depression rate. **Aim:** The aim of the present brief research was to explore the impact of Greek SCTMs' demographic characteristics, family relations, social integration and relationships with health professionals on their level of depression. **Material-methods:** Thirty-one Greek SCTMs, aged 7-12 years (median age:10 years), were invited to self-complete the Children's Depression Inventory (CDI) and an ad hoc questionnaire on their demographic characteristics (e.g. gender), health condition (e.g. additional underlying health conditions), poor social integration (e.g. school absenteeism) and relationships with healthcare workers (e.g. doctors). Regarding CDI scoring, the cut-off points of >15 was taken as threshold. Prevalence ratios (PR) and 95% confidence intervals (95%CI) were computed. A p-value<0.05 was referred as statistically significant. **Results:** The 33/36(92%) Greek SCTMs fully completed the questionnaires. The 18/33(55%) were girls. Their median age stood at 10 years. The 8/33(24%) Greek SCTMs experienced mood disorder. Demographic characteristics had no impact on Greek SCTM level of depression. Greek SCTMs reporting that they have additional underlying health conditions were nearly 15 times as likely as those not reporting to experience mood disorder [2/3(67%) vs.6/30(20%), PR=14.0(95%CI:1.23- 168), p=0.034]. Greek SCTMs reporting that they were often absent from school were seven times as likely as those not reporting to experience mood disorder [4/7(57%) vs.4/26(15%), PR=7.33(95%CI:1.17-46.1), p=0.034]. Greek SCTMs reporting that they had difficulties in communicating with their doctor were more than 10 times as likely as those not reporting to experience mood disorder [7/17(41%)vs.1/16(6%), PR=10.5(95%CI:1.11-98.9), p=0.040]. **Conclusions:** Health professionals need to recognize and manage the impact of additional underlying medical conditions on Greek SCTMs emotional state. Emotional empowerment in Greek SCTMs at school may improve their attendance. Effective doctor-SCTM patient communication would be a central clinical function in alleviating emotional stress and building a therapeutic doctor-SCTM patient relationship.

**Keywords:** Thalassemia,Contributing Factors

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## Introduction

Thalassemia is an inherited hematological disorder prevalent in regions such as the Mediterranean, Middle East, and Southeast Asia. [1,2,3] Approximately 80–90 million people are carriers of β-thalassemia, representing about 1.5% of the world population. Globally, it is estimated that 300,000–400,000 children are born each year with significant inherited hemoglobin disorders.[1]

This chronic disease is characterized by severe anemia requiring frequent blood transfusions and ongoing treatment to manage complications like iron overload. Thalassemia patients also face serious medical complications such as cardiac and liver disease. [2,3] Children affected by thalassemia major typically exhibit symptoms such as pallor, poor growth, recurrent infections, and enlargement of the liver and spleen, with diagnosis usually occurring between six months and two years of age. Without timely diagnosis and treatment, over 90% of these children do not survive past three to four years of age. [4,5]

However, life expectancy improves with prompt treatment and psychosocial challenges become increasingly significant, ranging from emotional and behavioral problems in children to social and reproductive difficulties in adults. Children with β-thalassemia major often experience feelings of difference and develop negative thoughts about their lives, including guilt, anxiety, and low self-esteem. Although their overall behavioral profile may resemble that of their healthy peers, the chronic nature of the disease and the painful chelation therapy can trigger significant psychosocial problems. Within families, the stress related to the child's future can strain relationships and increase feelings of isolation and marginalization.[,6-11]

The aim of the present brief research was to explore the impact of Greek SCTMs' demographic characteristics, family relations, social integration and relationships with health professionals on their level of depression.

## Material-methods

Thirty-one Greek SCTMs, aged 7-12 years (median age:10 years), were invited to self-complete the Children's Depression Inventory (CDI) and an ad hoc questionnaire on their demographic characteristics (e.g. gender), health condition (e.g. additional underlying health conditions), poor social integration (e.g. school absenteeism) and relationships with health professionals (e.g. doctors).

Regarding CDI scoring, the cut-off point of >15 was taken as threshold.[12,13]

Prevalence ratios (PR) and 95% confidence intervals (95%CI) were computed. A p-value<0.05 was referred as statistically significant.

## Results

The 33/36(92%) Greek SCTMs fully completed the questionnaires.

The 18/33(55%) were girls. Their median age stood at 10 years. The 8/33(24%) Greek SCTMs experienced mood disorder. Demographic characteristics had no impact on Greek SCTM level of depression.

Greek SCTMs reporting that they have additional underlying health conditions were nearly 15 times as likely as those not reporting to experience mood disorder [2/3(67%)vs.6/30(20%), PR=14.0(95%CI:1.23- 168), p=0.034].

Greek SCTMs reporting that they were often absent from school were seven times as likely as those not reporting to experience mood disorder [4/7(57%)vs.4/26(15%), PR=7.33(95%CI:1.17-46.1), p=0.034].

Greek SCTMs reporting that they had difficulties in communicating with their doctor were more than 10 times as likely as those not reporting to experience mood disorder [7/17(41%)vs.1/16(6%), PR=10.5(95%CI:1.11-98.9), p=0.040].

**Discussion**

According to the results, Greek SCTMs reporting that they have additional underlying health conditions were nearly 15 times as likely to experience mood disorder as those not reporting. The presence of multiple or chronic health conditions often imposes a substantial and persistent stress burden, which can dysregulate physiological stress-response systems and increase susceptibility to emotional disturbance. Additionally, many comorbid conditions are associated with inflammatory processes, hormonal imbalances, or metabolic disturbances that can adversely affect neurotransmitter pathways involved in mood regulation. A recent study conducted by Surapolchai et al.,[7] among 605 patients, 267 thalassemia-related complications were documented in 231 pediatric, adolescent, and young adult individuals (38.2%). The most frequently observed complications were infections, followed by cholelithiasis and growth failure. Splenectomy and elevated pre-transfusion hemoglobin levels were identified as significant risk factors for infections. Additionally, older age and male sex were significantly associated with an increased risk of endocrinopathies.

Greek SCTMs reporting that they were often absent from school were seven times more likely to experience mood disorder. Interestingly, frequent hospitalization due to various complications and the need for transfusions every 3-4 weeks, may lead to missed school days and diminished contact with peer group. Moreover, school performance is severely affected by limited physical functioning attributed to several factors such as chronic anemia, and hypoxia. Furthermore, physical symptoms limit social engagement, academic performance, and daily activities, leading to feelings of isolation and loss of control. Additive to this complexity, physical manifestations such as deformities, growth delays, and delayed puberty further undermine patients' self-image, resulting in reduced self-esteem.[6,7] Body image, particularly self-concept, plays a vital role in shaping behavior. In the context of chronic illness, the physical changes experienced during childhood, combined with an individual's personal perception of these changes, directly influence the social adjustment of affected children. Chronic conditions, disrupt the normal development of self-image across emotional, intellectual, and social domains.[14,15]

Greek SCTMs reporting that they had difficulties in communicating with their doctor were more than 10 times likely to experience mood disorder compared to those who did not. A possible contributor to this finding is that mental health issues may interfere with their ability to clearly express concerns or participate in decision-making. An alternative explanation is that SCTMs face challenges in communicating with healthcare providers due to limited understanding of their condition. Moreover, frequent treatments and hospital visits can cause fear and withdrawal. Additionally, the lack of age-appropriate communication where adults speak for the child further hinder effective dialogue.

Nassim et al.,[16] (2022) is highlighting significant deficiencies in understanding key aspects of the disease and its management. The study revealed that many patients and caregivers lacked adequate information about critical components such as iron chelation therapy, disease complications, and transfusion protocols. The authors emphasized that insufficient patient education, limited consultation time, and resource constraints in healthcare settings contribute to these gaps. Therefore, tailored communication strategies are essential to improve interactions between these patients and medical professionals in order to enhance disease awareness, promote adherence, and ultimately improve clinical outcomes.[16]

Last but not least, the 8/33(24%) Greek SCTMs experienced mood disorder. SCTMs exhibit a higher prevalence of depressive symptoms compared to healthy peers. It is estimated that up to 80% of children with thalassemia suffer psychological disorders, including anxiety, depression.[2] A recent study by Rikos et al.,[17] suggests a slight increase in depression, highlighting the persistent psychosocial challenges that might influence how patients communicate with their care teams.

## Conclusions

Although clinical management of thalassemia has improved, addressing the psychosocial burden of patients remains essential. Psychological support is crucial to alleviate the emotional burden on both the children and their families. Counseling, caregiver education, and holistic nursing interventions can improve emotional well-being, treatment adherence, and coping.

## References


1. Yousuf R, Akter S, Wasek SM, Sinha S, Ahmad R, Haque M. Thalassemia: A Review of the Challenges to the Families and Caregivers. Cureus. 2022;14(12):e32491.
2. Behdani F, Badiee Z, Hebrani P, Moharreri F, Badiee AH, Hajivosugh N, Rostami Z, Akhavanrezayat A. Psychological Aspects in Children and Adolescents With Major Thalassemia: A Case-Control Study. Iran J Pediatr. 2015;25(3):e322.
3. Mazzone L, Battaglia L, Andreozzi F, Romeo MA, Mazzone D. Emotional impact in beta-thalassaemia major children following cognitive-behavioural family therapy and quality of life of caregiving mothers. Clin Pract Epidemiol Ment Health. 2009;5:5.
4. Sahu S, Agrawal A, Shrivastava J, Tonk S. Psychiatric disorders and caregiver burden in children with transfusion dependent β-thalassaemia and their caregivers. World J Clin Pediatr. 2023;12(3):125-132.
5. Koutelekos I, Haliasos N. Thalassaemia. Perioperative Nursing (GORNA). 2013; 2(3):101- 112.
6. Adam S, Afifi H, Thomas M, Magdy P, El-Kamah G. Quality of Life Outcomes in a Pediatric Thalassemia Population in Egypt. Hemoglobin. 2017;41(1):16-20.
7. Surapolchai P, Songdej D, Hantaweepant C, Tantiworawit A, Charoenkwan P, Lauhasurayotin S, Torcharus K, Sripornsawan P, Sutcharitchan P, Konwilaisak P, Saengboon S, Pongtanakul B, Teawtrakul N; Red Blood Cell Disorders Study

Group. Thalassemia-related complications in pediatric, adolescent, and young adult patients with transfusion-dependent thalassemia: A multicenter study in Thailand. Pediatr Blood Cancer. 2023;70(10):e30599.

8. Koutelekos J, Haliasos N. Depression and Thalassemia in children, adolescents and adults. Health Science Journal. 2013; 7(3):239- 246.
9. Koutelekos J, Haliasos N. Psychosocial disorders in childhood, adolescence and young adult life of patients with thalassaemia. Hellenic Journal of Nursing. 2016; 55(2): 132–138.
10. Koutelekos, I. Thalassemia major in children. Perioperative nursing (GORNA).2021; 10(4): 325–327.
11. Koutelekos, I. Thalassemia major in adolescence. Perioperative nursing (GORNA).2021;10(3): 213–215.
12. Kovacs M. Children's Depression Inventory (CDI) Technical Manual. North Tonawanda, NY: Multi-Health Systems, 1992.
13. Kovacs M. The Children's Depression, Inventory (CDI). Psychopharmacology Bulletin 1985; 21 (4): 995-998.
14. Kyritsi H, Mantziou V, Papadatou D, Evagellou E, Koutelekos J, Polikandrioti M. Self-concept of children and adolescentswith cancer. Health science Journal. 2007;1(3).
15. Polikandrioti M, Koutelekos I. Patients' needs. Perioperative Nursing (GORNA). 2013;2(2):73-83.
16. Nassim MS, Mahmoud MA, Abu Shady H, Mohammed EAR. Assessment of disease knowledge gaps among beta thalassemia major patients and their caregivers. *Egypt Pediatric Assoc Gaz*. 2022;70:49.
17. Rikos N, Tzagkaraki M, Linardaki A, Moloudaki M, Linardakis M. Temporal Changes in Quality of Life and Psychological Burden of Patients with Thalassemia: A Comparative Data Analysis from 2018 to 2025. *Thalassemia Reports*. 2025;15(4):11