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Original Research Article

Health related quality of life and related factors among children with transfusion dependent thalassemia: a cross-sectional study in Chattogram, Bangladesh

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ABSTRACT

Background: Transfusion-dependent thalassemia (TDT) is a chronic inherited disorder requiring lifelong transfusions and iron chelation. Despite improved survival, complications and treatment burden reduce health-related quality of life (HRQoL). Evidence from Bangladesh using disease-specific tools is limited. This study assessed HRQoL and its associated factors among children with TDT in Chattogram.
Methods: A cross-sectional study was conducted among 400 children (6–18 years) at two tertiary hospitals in Chattogram. HRQoL was measured using the Bangla-translated TranQol questionnaire (physical, emotional, family and school/career domains). Sociodemographic and clinical data were collected via interviews and records. Data were analyzed using non-parametric tests, correlation and hierarchical multiple linear regression in SPSS v27, with $p<0.05$ considered significant.
Results: Most participants were aged 10–15 years (58.0%) and male (68.5%), with HbE thalassemia as the predominant type (70.0%). Mean serum ferritin was high (2082.6±1353.7 ng/ml) and 54.5% received iron chelation therapy. Physical health had the lowest HRQoL score (6.07/24), followed by family (11.32/36), emotional (14.13/36) and school/career (9.45/16). Sociodemographic and family factors explained 31.8%, 26.1%, 16.6% and 24.6% of variance across domains, respectively (all $p<0.001$). Age at diagnosis and residence were consistent significant predictors.
Conclusions: Children with TDT in Bangladesh experience substantial multidimensional impairment in HRQoL. Early age at diagnosis, iron overload and socioeconomic constraints significantly influence outcomes. Integrating routine HRQoL assessment and strengthening psychosocial and financial support mechanisms are essential to improve holistic thalassemia care.

Keywords: Bangladesh, Health-related quality of life, Hierarchical multiple regression, Iron overload, Pediatric thalassemia, Psychosocial burden, Transfusion-dependent thalassemia, TranQol

INTRODUCTION

TDT represents one of the most severe inherited hemoglobin disorders, requiring lifelong blood transfusions and iron chelation therapy for survival. Globally, thalassemia remains a major public health concern, particularly in South-East Asia, where carrier rates are high and healthcare resources are limited.[1] In

Bangladesh, HbE β-thalassemia and β-thalassemia major are the most prevalent forms of TDT, contributing to a growing population of chronically transfused children.[2] Advances in transfusion safety and chelation therapy have markedly improved survival among patients with TDT, transforming the disease from a fatal childhood condition into a chronic disorder.[3,4] However, prolonged treatment exposes patients to iron overload, growth impairment, organ dysfunction and psychosocial stress, all of which may adversely affect health-related quality of life (HRQoL).[5] The World Health Organization emphasizes that health extends beyond survival to encompass physical, mental and social well-being, underscoring the relevance of HRQoL assessment in chronic diseases.

HRQoL is increasingly recognized as a critical outcome in thalassemia care and research. Disease-specific instruments such as the Transfusion-dependent Quality of Life questionnaire (TranQol) offer a comprehensive evaluation of patient-perceived well-being across multiple domains.[6,7] International studies consistently report impaired HRQoL among children with TDT, particularly in physical activity and school functioning domains.[8-10]

Despite the substantial burden of TDT in Bangladesh, HRQoL remains a neglected aspect of routine clinical care and evidence using disease-specific tools is limited. This study aimed to assess HRQoL and identify associated sociodemographic, clinical and treatment-related factors among Bangladeshi children with TDT using a Bangla-translated TranQol questionnaire.

METHODS

This cross-sectional study was carried out over a period of one year from January 2025 to December 2025 in the Department of Paediatrics of Chittagong Medical College Hospital (CMCH) and Chattagram Maa-O-Shishu Hospital (CMOSH), which are two major tertiary referral centres in Chattogram, Bangladesh. During the study period, children attending these hospitals for routine thalassemia care and transfusion services were screened for eligibility. Children aged 6–18 years who had a confirmed diagnosis of transfusion-dependent thalassemia (TDT) and were receiving regular blood transfusions were included.

In this study, transfusion dependence was defined in a practical way children were considered transfusion dependent if they had received six or more red blood cell units within the last six months or if they required regular transfusions with a transfusion-free interval of ≤6 weeks over the previous 1–3 years. Children were excluded if they had acute illness, cognitive impairment or mental retardation, if they or their caregivers were unwilling to participate or if they did not have a dependable caregiver who could provide accurate information when needed. A total of 400 children were enrolled using consecutive sampling, meaning every eligible child who attended the study settings during the data collection period was included one by one until the target sample size was reached. Children who had been included once into the study were not included on successive visits.

Data were collected using a structured approach. First, caregivers (and older children when appropriate) were interviewed to record sociodemographic information, including the child's age, sex, religion, residence (urban/rural/hill-tract), parental consanguinity, family type, mother's education, the child's schooling status and socioeconomic category. Second, clinical, detailed blood transfusion history and treatment-related information was obtained by reviewing available medical records and by conducting a brief physical examination. This included age at diagnosis, type of TDT (HbE β-thalassemia or thalassemia major), visible facial changes, growth status and organ enlargement such as hepatomegaly and splenomegaly. Treatment and monitoring details were also recorded, such as age at starting transfusion, duration since first transfusion, transfusion frequency, number of blood bags used per session, cost per transfusion, use of iron chelation therapy, duration and type of chelation, reasons for stopping chelation and cost of chelation. Where available, laboratory indicators such as pre-transfusion hemoglobin and serum ferritin levels were documented.

HRQoL was measured using the Bangla-translated TranQol questionnaire, a thalassemia-specific tool designed to assess how the disease and its treatment affect daily life. Validity and reliability of the Bangla version were established and a user agreement was signed with the Mapi Research Institute, Lyon, France prior to use. The questionnaire was administered in an interviewer-assisted format. The parent proxy version was supplied to parents of children aged 6–12 years and the self-report child version to children aged 12–18 years. It contains 28 items and covers four main domains: physical health, emotional health, family functioning and school/career functioning. Each item was answered using a five-point Likert scale, reflecting how often the child experienced specific problems or feelings. After data collection, raw scores were converted into a 0–100 scale for each domain, where higher scores represent better quality of life.

Ethical approval was obtained from the appropriate institutional review committee before starting data collection. Caregivers provided written informed consent and children provided assent when appropriate. Participants were clearly informed that joining the study was voluntary and that refusal would not affect their treatment. Privacy and confidentiality were maintained by using coded data and restricting access to study information.

For data analysis, the dataset was entered and analyzed using IBM SPSS Statistics version 27.0. Categorical variables were summarized using frequency and percentage, while continuous variables were presented as mean±standard deviation. TranQol domain scores were computed according to scoring instructions. Because

HRQoL scores often do not follow a normal distribution, non-parametric tests were used: the Mann–Whitney U test for two-group comparisons and the Kruskal–Wallis test for comparisons involving more than two groups. Spearman's rank correlation was used to examine relationships between continuous variables such as ferritin level, transfusion duration and HRQoL scores. A p value <0.05 was considered statistically significant for all analyses.

RESULTS

The study included 400 children with transfusion-dependent thalassemia aged 6–18 years. The majority of participants were in the 10–15-year age group (58.0%), followed by those aged 16–18 years (25.0%) and 6–9 years (17.0%). Most children were diagnosed early in life, with nearly two-thirds (60.5%) diagnosed between 2–3 years of age, while 8.0% were diagnosed within the first year. Male participants constituted more than two-thirds of the sample (68.5%). The study population was predominantly Muslim (83.5%), reflecting the regional demographic distribution. More than half of the participants (55.0%) were from rural areas, whereas 44.0% resided in urban settings. Only a small proportion (1.0%) came from hill-tract areas (Table 1).

Among the 400 children with TDT, HbE thalassemia was the most common diagnosis (70.0%), followed by thalassemia major (28.5%). Nearly half of the participants exhibited facial changes (45.5%) and growth retardation (47.0%), indicating chronic disease impact. Hepatomegaly was present in approximately half of the children (50.2%). Splenomegaly was highly prevalent, with moderate to severe enlargement observed in 57.5% of cases. Despite this, only 15.0% had undergone splenectomy (Table 2).

Children with TDT initiated transfusion at a mean age of 5.57 years and had been receiving transfusions for an average of nearly 5 years, with the majority requiring monthly transfusions. The mean pre-transfusion hemoglobin level was markedly low (5.86 g/dl), reflecting persistent severe anemia. Serum ferritin levels were substantially elevated (mean 2082.6 ng/ml), indicating significant iron overload, while less than half of the participants underwent regular ferritin monitoring. Just over half (54.5%) were receiving iron chelation therapy, with deferiprone being the most commonly used agent. Financial constraints and adverse drug effects were the leading reasons for discontinuation of chelation therapy (Table 3).

Almost all caregivers (97.5%) reported awareness of available treatment options for thalassemia. Adjunct therapies were selectively used, with 24.0% receiving thalidomide and 10.5% hydroxyurea. More than half of the participants (57.5%) had not undergone formal screening for complications, indicating gaps in routine surveillance (Table 4). The mean raw TranQol domain scores indicate substantial impairment across multiple dimensions of HRQoL. The physical health domain demonstrated the lowest raw score (4.04±2.7/24), reflecting pronounced fatigue and limitations in physical activity. The emotional health domain score (11.43±4.9/36) suggests a considerable psychological burden. Similarly, the family health domain (10.89±3.9/36) highlights ongoing financial and psychosocial impact on household functioning. The school and career domain showed a comparatively higher raw score (8.46±3.8/16), yet still indicates notable disruption in academic participation (Table 5).

Figure 1 presents a boxplot illustrating the distribution of HRQoL scores across the four TranQol domains. The physical health domain exhibited the lowest scores, while considerable variability was observed across all domains. Outliers indicate extreme values within each domain, emphasizing the multidimensional burden of TDT on children's daily lives.

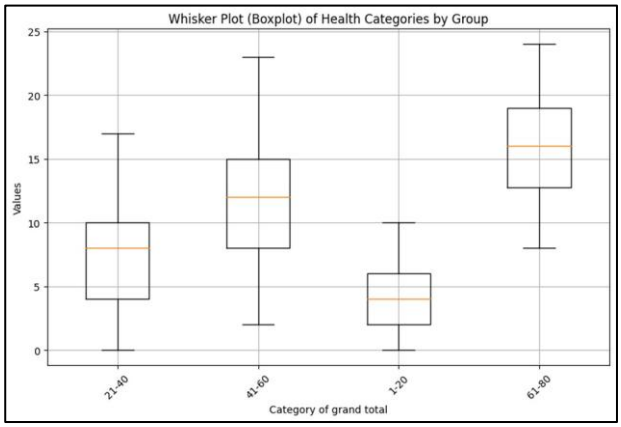

Figure 1: Whisker plot (boxplot) of health-related quality of life domain scores (physical health, emotional health, family health and school/career) among children with transfusion-dependent thalassemia in Chattogram, Bangladesh (n=400). Box represents interquartile range; horizontal line within box indicates median; whiskers denote minimum and maximum values; circles represent outliers.

Hierarchical multiple regression analysis demonstrated that sociodemographic variables explained 29.9% of the variance in physical health domain scores (Adjusted R^2=0.290, p<0.001). After adding family-related variables in Block 2, the model explained an additional 1.9% of variance (ΔR^2=0.019), indicating a modest but significant improvement. Age and residence remained strong positive predictors, whereas age at diagnosis showed a persistent negative association with physical HRQoL. Among family-related variables, only family history demonstrated a significant association (β=0.156, p=0.002) (Table 6).

Hierarchical multiple regression analysis demonstrated that the included predictors explained 26.1% of the variance in emotional health domain scores (Adjusted R^2=0.244, p<0.001). Age and residence were positively associated with emotional HRQoL, whereas age at diagnosis showed a significant negative association.

Consanguinity emerged as a strong positive predictor (β=0.216, p<0.001), while children from joint families demonstrated lower emotional health scores (β=−0.098, p=0.033) (Table 7).

Multiple linear regression analysis indicated that the included predictors explained 16.6% of the variance in family health domain scores (Adjusted R^2=0.147, p<0.001). Age at diagnosis was negatively associated with family HRQoL (β=−0.197, p<0.001), while residence showed a strong positive association (β=0.295, p<0.001). Residence emerged as the strongest predictor of family health outcomes (Table 8).

Multiple linear regression analysis revealed that the predictors explained 24.6% of the variance in school/career domain scores (Adjusted R^2=0.229, p<0.001). Age and residence were positively associated with school-related HRQoL, while age at diagnosis showed a significant negative association (β=−0.263, p<0.001). Family history was also significantly associated with school outcomes (β=0.095, p=0.039) (Table 9).

Table 1: Basic sociodemographic characteristics of the study population (n=400).

Variable	Category	N (%)
Age group (in years)	6–9	68 (17.0)
	10–15	232 (58.0)
	16–18	100 (25.0)
Age at diagnosis (in years)	≤1	32 (8.0)
	2–3	242 (60.5)
	4–7	118 (29.5)
	8–10	8 (2.0)
Gender	Male	274 (68.5)
	Female	126 (31.5)
Religion	Muslim	334 (83.5)
	Hindu	66 (16.5)
Residence	Urban	176 (44.0)
	Rural	220 (55.0)
	Hill-tract	4 (1.0)

Table 2: Disease profile and clinical characteristics (n=400).

Variable	Category	N (%)
Type of transfusion-dependent thalassemia	HbE thalassemia	280 (70.0)
	Thalassemia major	114 (28.5)
	Others	6 (1.5)
Facial changes	Present	182 (45.5)
	Absent	218 (54.5)
Hepatomegaly	Present	201 (50.2)
	Absent	198 (49.5)
Splenomegaly	Mild	128 (32.0)
	Moderate	198 (49.5)
	Severe	32 (8.0)
Growth retardation	Present	188 (47.0)
	Absent	212 (53.0)
Splenectomy	Yes	60 (15.0)
	No	340 (85.0)

Table 3: Transfusion, iron status and chelation profile of children with TDT (n=400).

Variable	Value
Transfusion history	
Age at start of transfusion (in years), mean±SD	5.57±2.07
Duration of transfusion (in years), mean±SD	4.98±3.96
Monthly transfusion	246 (61.5%)
Twice monthly transfusion	118 (29.5%)
1 blood bag per session	258 (64.5%)

Continued.

Variable	Value
≥2 blood bags per session	142 (35.5%)
Cost per transfusion (BDT), mean±SD	988.5±335.9
Iron status	
Pre-transfusion Hb (g/dl), mean±SD (n=130)	5.86±1.99
Serum ferritin (ng/ml), mean±SD (n=352)	2082.6±1353.7
Regular ferritin monitoring	168 (42.1%)
Irregular/none	190 (47.5%)
Iron chelation therapy	
Current ICT	218 (54.5%)
≥2 years ICT duration	168 (42.0%)
Previous ICT	114 (28.5%)
Stopped due to cost	85 (21.3%)
Stopped due to adverse effects	71 (17.8%)
Deferiprone use	150 (37.5%)
Deferasirox use	88 (22.0%)
ICT cost (BDT), mean±SD	2731.4±878.5

Table 4: Treatment awareness, adjunct therapies and complications among children with TDT (n=400).

Variable	Category / Measure	N (%) / Mean±SD
Awareness and adjunct therapy		
Awareness of treatment options	Yes	390 (97.5%)
Thalidomide therapy	Yes	96 (24.0%)
Duration of thalidomide ≥2 years	—	60 (15.0%)
Cost of thalidomide (BDT), mean±SD	—	2454.6±824.2
Hydroxyurea therapy	Yes	42 (10.5%)
Cost of hydroxyurea (BDT), mean±SD	—	1719.1±836.1
Complications		
Any complication (tested)	Present	12 (3.0%)
	None detected	158 (39.5%)
	Not tested	230 (57.5%)
Type of complication	Infectious	6 (1.5%)
	Cardiac	2 (0.5%)
	Endocrine	4 (1.0%)

Table 5: Mean raw TranQol domain scores among children with TDT (n=400).

TranQol domain	Maximum possible score	Mean raw domain score
Physical health	24	4.04±2.7
Emotional health	36	11.43±4.9
Family health	36	10.89±3.9
School and career	16	8.46±3.8

Table 6: Hierarchical multiple linear regression analysis for physical health domain score (n=400).

Predictor	β (Standardized)	B	P value
Block 1: sociodemographic factors			
Age (in years)	0.265	0.258	<0.001
Age at diagnosis	-0.275	-0.268	<0.001
Gender	0.059	0.055	0.210
Religion	-0.107	-0.102	0.022
Residence	0.336	0.329	<0.001
Block 2: Family-related factors			
Consanguinity	—	0.049	0.310
Carrier parent status	—	-0.005	0.890
Family history	—	0.156	0.002

Continued.

Predictor	β (Standardized)	B	P value
Model statistics			
R^2	Block 1: 0.299	Block 2: 0.318	
Adjusted R^2	0.290	0.302	
ΔR^2	—	0.019	p<0.01

Table 7: Hierarchical multiple linear regression analysis for emotional health domain score (n=400).

Predictor	β (Standardized)	B	P value
Age (in years)	0.105	0.168	0.024
Age at diagnosis	-0.214	-0.624	<0.001
Gender	0.047	0.507	0.313
Religion	-0.021	-0.281	0.658
Residence	0.317	3.061	<0.001
Consanguinity	0.216	2.863	<0.001
Carrier parent status	-0.039	-0.251	0.399
Family history	0.055	0.587	0.231
Type of family	-0.098	-1.057	0.033
Model statistics			

R^2=0.261, Adjusted R^2=0.244, F (9, 390) =15.286, p<0.001

Table 8: Hierarchical multiple linear regression analysis for family health domain score (n=400).

Predictor	β (Standardized)	B	P value
Age (years)	0.055	0.069	0.262
Age at diagnosis	-0.197	-0.452	<0.001
Gender	0.003	0.029	0.946
Religion	0.004	0.045	0.933
Residence	0.295	2.239	<0.001
Consanguinity	0.089	0.925	0.066
Carrier parent status	0.033	0.166	0.504
Family history	0.030	0.255	0.533
Type of family	-0.058	-0.487	0.238
Model statistics			

R^2=0.166, Adjusted R^2=0.147, F (9, 390) =8.631, p<0.001

Table 9: Hierarchical multiple linear regression analysis for school/career domain score (n=400).

Predictor	β (Standardized)	B	P value
Age (years)	0.143	0.174	0.002
Age at diagnosis	-0.263	-0.585	<0.001
Gender	0.036	0.290	0.454
Religion	0.016	0.164	0.738
Residence	0.287	2.110	<0.001
Consanguinity	0.048	0.489	0.291
Carrier parent status	-0.057	-0.279	0.223
Family history	0.095	0.782	0.039
Type of family	-0.050	-0.409	0.282
Model statistics			

R^2=0.246, Adjusted R^2=0.229, F (9, 390) =14.167, p<0.001

DISCUSSION

To the best of our knowledge, this is the first study among children with TDT in Bangladesh to have used TranQol for measuring QoL scores. This study provides a comprehensive evaluation of HRQoL among children with TDT using a disease-specific assessment tool. The findings reveal that, despite improved survival, children with TDT continue to experience substantial multidimensional impairment affecting physical functioning, emotional well-being, family life and educational participation. Disease severity emerged as a central determinant of HRQoL. Children who had an early age of onset initiated transfusion at an earlier age. These

severe TDT children have been on transfusion therapy for a long period and demonstrated poorer HRQoL scores, reflecting more aggressive disease phenotypes. Similar associations have been documented across multiple regional and international studies, where early transfusion dependency was linked to increased treatment burden, iron overload and long-term complications.[11-13] Physical manifestations such as growth retardation, hepatomegaly, splenomegaly and facial changes were associated with lower physical domain scores, highlighting the persistent impact of chronic anemia and suboptimal transfusion targets.

Iron overload played a critical role in shaping quality of life outcomes. The markedly elevated serum ferritin levels observed in this cohort, together with irregular monitoring and inconsistent chelation therapy, suggest gaps in long-term disease surveillance. Financial constraints were the predominant reason for non-adherence or discontinuation of chelation therapy, a finding consistent with reports from other low- and middle-income countries.[14,15] Children receiving regular iron chelation, splenectomy or adjunct therapies such as thalidomide and hydroxyurea demonstrated comparatively better HRQoL, likely due to reduced transfusion frequency and improved functional capacity. Emotional health impairment was prominent, with many children reporting sadness, anger and anxiety related to prognosis and long-term treatment. Nonetheless, emotional and social domain scores were relatively higher than physical and school domains, suggesting adaptive coping strategies supported by strong familial and peer networks. Similar resilience has been described in children with thalassemia who develop social acceptance mechanisms despite chronic illness.[16,17]

The school and career domain was among the most severely affected, reflecting frequent absenteeism, fatigue and economic barriers to education. Regular hospital visits, travel requirements and treatment-related costs significantly disrupted schooling, a pattern observed consistently across Asian and Middle Eastern cohorts.[18] Although cognitive ability remains intact, parental concerns regarding educational continuity and future productivity may further limit academic engagement. The present study demonstrated that older age and urban residence were associated with better physical HRQoL, whereas early age at diagnosis significantly predicted poorer physical outcomes. Early diagnosis may produce cumulative disease burden and long-term complications, thereby affecting physical functioning.[19] Similar findings have been reported in thalassemia cohorts where delayed clinical intervention was linked to increased morbidity and reduced quality of life.[20] The strong effect of residence may reflect disparities in healthcare access and transfusion support between geographic settings.[21] Emotional HRQoL was significantly influenced by age, age at diagnosis, residence and consanguinity. The negative association with early diagnosis suggests prolonged duration of disease may contribute to psychological distress, consistent with previous reports linking disease severity to emotional burden in thalassemia.[13] Residence-related differences may reflect variation in social support systems and stigma experiences.[22,23] The role of consanguinity could be mediated through family awareness and coping mechanisms in genetically affected households.[24]

Family health outcomes were primarily associated with residence and age at diagnosis, indicating that systemic and environmental factors influence family functioning in chronic illness. Previous literature suggests that chronic transfusion dependency imposes financial and psychosocial strain on families, particularly in resource-limited settings.[25] Early diagnosis may intensify caregiver burden due to progressive complications.[21] However, the relatively lower explained variance suggests that unmeasured psychosocial variables may play a substantial role in family dynamics. School-related HRQoL was significantly associated with age, age at diagnosis, residence and family history. Delayed age at diagnosis appears protective against academic disruption, possibly due to less severe presentation, better disease stabilization and fewer school absences.[13] Residence-related disparities may reflect differences in educational support and healthcare accessibility.[19] The modest effect of family history suggests that awareness and prior exposure to the disease within families may influence coping strategies and school adaptation.[23]

This study's major strength lies in its large, multicentric sample and the use of a disease-specific, Bangla-translated TranQol instrument, enabling a culturally relevant and comprehensive assessment of HRQoL. The inclusion of detailed sociodemographic, clinical and treatment-related variables allowed identification of multiple factors influencing quality of life. However, the cross-sectional design limits causal inference between determinants and HRQoL outcomes. Additionally, reliance on caregiver-reported data and incomplete investigation of complications may have led to reporting bias and underestimation of disease-related morbidity.

Limitations

Cross-sectional design limits causal inference between predictors and HRQoL outcomes. Reliance on caregiver-reported data may introduce reporting bias. Incomplete assessment of complications could underestimate disease burden. Overall, these findings indicate that current thalassemia care in Bangladesh prioritizes survival but inadequately addresses quality of life. Integrating structured HRQoL assessment, psychosocial support and financial protection mechanisms into routine care is essential to improve long-term outcomes for children with TDT.

CONCLUSION

Children with transfusion-dependent thalassemia in Bangladesh experience significant impairment in health-related quality of life across physical, emotional, family

and educational domains. Disease severity, iron overload, treatment burden and financial constraints are key determinants of poorer outcomes. Routine HRQoL assessment should be integrated into thalassemia care. Holistic management strategies are essential to improve both survival and well-being.

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REFERENCES

1. Tuo Y. Global, regional and national burden of thalassemia, 1990–2021: a systematic analysis for the global burden of disease study 2021. E Clin Med. 2024;72:102619.
2. Mitro A, Hossain D, Rahman MM, Dam B, Hosen MJ. β-Thalassemia in Bangladesh: Current status and future perspectives. Thalassemia Reports. 2024;14(3):49-59.
3. Cappellini MD. Quality of life in patients with beta-thalassemia: a prospective study of transfusion-dependent and non-transfusion-dependent patients in Greece, Italy, Lebanon and Thailand. Am J Hematol. 2019;94(10):261-4.
4. Forni GL, Grazzini G, Boudreaux J, Agostini V, Omert L. Global burden and unmet needs in the treatment of transfusion-dependent β-thalassemia. Front Hematol. 2023;2:1187681.
5. Azarkeivan A, Hajibeigi B, Alavian SM, Lankarani MM, Assari S. Associates of poor physical and mental health-related quality of life in beta thalassemia-major/intermedia. J Res Med Sci. 2009;14(6):349-55.
6. Klaassen RJ. Introducing the TranQol: a new disease-specific quality of life measure for children and adults with thalassemia major. J Blood Disord Transfus. 2013;4(4):784
7. Klaassen RJ. Validation and reliability of a disease-specific quality of life measure (the TranQol) in adults and children with thalassaemia major. Br J Haematol. 2014;164(3):431-7.
8. Mettananda S. Health related quality of life among children with transfusion dependent β-thalassaemia major and haemoglobin E β-thalassaemia in Sri Lanka: a case control study. Health Qual Life Outcomes. 2019;17:1-13.
9. Shafie AA. Health-related quality of life among children with transfusion-dependent thalassemia: a cross-sectional study in Malaysia. Health Qual Life Outcomes. 2020;18:1-11.
10. Alshamsi S, Hamidi S, Narci HO. Health-related quality of life and associated factors of children with transfusion-dependent thalassemia in Dubai, United Arab Emirates. Global J Health Sci. 2021;13(7):18-31.
11. Karimi M. Quality of life in beta-thalassemia major. Arch Iranian Med. 2007;10(3):372-7.
12. Thavorncharoensap M. Factors affecting health-related quality of life in Thai children with thalassemia. BMC Ped. 2010;10:1.
13. Hakeem GLA, Mousa SO, Moustafa AN, Mahgoob MH, Hassan EE. Health-related quality of life in pediatric and adolescent patients with transfusion-dependent β-thalassemia in upper Egypt (single center study). Health Qual Life Outcomes. 2018;16(1):59.
14. Musallam KM. Iron overload and morbidity in transfusion-dependent thalassemia. Blood. 2011;118(4):884-93.
15. Sobota A. Self-reported quality of life in thalassemia. Am J Hematol. 2011;86(1):92-8.
16. Koutelekos I. Quality of life in children with thalassemia. Health Sci J. 2013;7(2):148-59.
17. Ansari SH. Quality of life in patients with thalassemia major. Indian J Pediatr. 2014;81(4):345-50.
18. Ismail A. Health-related quality of life among thalassemia patients. Asian J Transfus Sci. 2013;7(2):95-100.
19. Musallam KM, Cappellini MD, Taher AT. Iron overload in beta-thalassemia intermedia. Haematologica. 2012;97(11):1645-52.
20. Ismail A, Campbell MJ, Ibrahim HM, Jones GL. Health related quality of life in Malaysian children with thalassaemia. Health Qual Life Outcomes. 2006;4:39.
21. Taher AT, Cappellini MD. Management of non-transfusion-dependent thalassemia: a practical guide. Drugs. 2014;74(15):1719-29.
22. Ayoub MD, Radi SA, Azab AM. Quality of life among children with beta-thalassemia major treated in Western Saudi Arabia. Saudi Med J. 2013;34(12):1281-6.
23. Ababneh S, Siyam AA, Alzoubi MM, Al-Sawalha NA, Al Sukhni FF, Al Rahbeni T, Al-Mugheed K, Farghaly Abdelaliem SM. Assessment of health-related quality of life in transfusion dependent beta thalassemia. Scientific Reports. 2025;15(1):32267.
24. Weatherall DJ, Clegg JB. The thalassaemia syndromes. 4th ed. Oxford: Blackwell Science; 2001.
25. Khurana A, Katyal M, Marwaha RK. Psychosocial burden in thalassemia. Indian J Pediatr. 2006;73(10):877-80.

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