

Peer Victimization among Thalassemic Children at Zagazig University Hospital: Comparative Study

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Abstract

Background: Peer victimization is a great social concern among school-aged children and those with chronic illnesses such as thalassemia are at an increased risk. **Aim of the study:** Assess peer victimization among thalassemic children at Zagazig University Hospital. **Subjects and Methods: Research design:** A case-control design was utilized. **Setting:** The study was conducted at Pediatric Hematology outpatient clinics at Zagazig University Hospital, Ahmed Arabi elementary school for both; girls and boys, Gazelle Elche's preparatory and secondary school in Sharkia Governorate, Egypt. **Subjects:** a matching sample of 47 thalassemic children and 47 control, aged 10-16 years. **Tools of data collection:** two tools were used to collect the study data: Tool I: Structured interview questionnaire. **Tool II:** Multidimensional Peer-Victimization Scale (MPVC). **Results:** the study revealed that thalassemic children less victimized than control group children. Also, boys were victimized by their peers more than girls in both control and thalassemic groups respectively; boys (10.41±6.2 and 1.97±5.86) girls (9.89±3.95 and 0.44±1.89) and the results were highly statistically significant (p=0.001). Also it was found that birth order was a highly statistically significant independent negative predictor of peer victimization in thalassemic group (p=0.001), while sibling number was a statistically significant independent positive predictor that affected peer victimization in thalassemic children (p=0.027). **Conclusion:** It could be concluded that children in the control group were more victimized than thalassemic children. **Recommendation:** specific anti-victimization programs that targeted at improving shared knowledge, acceptance, and positive interactions between children and their peers should be implemented to lower the level of victimization.

Keywords

Peer victimization, thalassemia and school-aged children.

Introduction

Peer victimization is commonly described as being the target of an aggressive action either directly or indirectly. In this context, it is crucial to differentiate between the terms bullying and peer victimization which can be frequently and incorrectly used to mean the same thing. Bullying refers to being a target of an aggressive action but differs from peer victimization in that bullying requires the aggressor to have power, in terms of status, physical strength, or psychological power, over the target of aggression. Therefore, all bullying behaviors fall under the term of peer victimization but not the reverse⁽¹⁾. Up to a third of children globally document being victimized by their peers every

year and these results are similar in both western and non-western cultures⁽²⁾.

Differences in appearance or in behavior, especially when children have problems associated with the development of social networks are usual causes of peer victimization. This may lead to the hypothesis that children with chronic illnesses or disabilities are at a higher risk of peer victimization because of their mannerisms, difficulties with mobility, speech patterns, or special care needs.

Moreover, chronic illness management, such as diet, type of activity and medication use may be stigmatizing for children leading to

further victimization, which may in turn disrupt self-management of their illness⁽³⁾. Thalassaemias are the most common genetic disorders that result from imbalance in the synthesis of globin chains⁽⁴⁾.

β -thalassaemia is an autosomal recessive disorder of hemoglobin production resulting from a range of mutations of the β globin gene which causing reduced or absent production of β globin. Reduced β globin production, leads to excess free α globin chains resulting in ineffective erythropoiesis, severe anemia and bone marrow hyperplasia⁽⁵⁾.

β -thalassaemia major leads to an abnormality in appearance known as chipmunk face, along with increased spaces between teeth, overbite, malocclusion and depressed nasal bridge. Painful swelling of salivary glands and a dry mouth may occur, which leads to reduced salivary protection and an increased rate of tooth decay⁽⁶⁾.

Both transfusion-dependent, and non-transfusion-dependent patients, are exposed to iron overload either as a result of regular RBCs transfusion or increased intestinal iron absorption⁽⁷⁾. Iron overload can lead to iron toxicity that may result in hepatic (fibrosis and cirrhosis), endocrine (growth failure, and diabetes mellitus, hypogonadotrophic-hypogonadism, hypothyroidism, and hypoparathyroidism), cardiac (cardiomyopathies and conduction disturbance), and joint toxicities⁽⁸⁾.

Nurses play an important role in preventing and controlling bullying and victimization at schools. It is part of the nursing's role as an area of knowledge and as a profession to contribute with promoting processes of autonomy, health and living with the differences, identifying risk signs, behaviors and modalities of involvement of students in bullying actions, as well as how these actions affect their learning, training, health and quality of life.

Also the nurse may favor the alert to families on the consequences of this phenomenon and guiding them for

intervention, as well as supporting and encouraging schools in the implementation of programs for prevention and reduction of violence⁽⁹⁾.

Significance of the study:

In Egypt, the carrier rate of β -Thalassaemia varies between 5.5% to $\geq 9\%$.⁽¹⁰⁾ β -Thalassaemia has detritus effects on the child that include; physical changes, growth retardation, short stature, delayed puberty and other complication which make thalassaemic children more vulnerable to peer victimization

Aim of the study:

The current study aimed to assess peer victimization among thalassaemic children at Zagazig University Hospitals, Egypt.

Research Questions:

Are thalassaemic children at Zagazig University Hospital subjected to peer victimization?

Subjects and methods:

Research design:

A case-control design was used.

Study setting:

The present study was conducted at:

- Pediatric Hematology Outpatient clinic at Zagazig University Hospital, Egypt.
- Four governmental schools, which were randomly selected from Zagazig city. These schools were Ahmed Arabi elementary school for girls, Ahmed Arabi elementary school for boys, Gazelle Elche's preparatory school and Gazelle Elche's secondary school.

Study subjects:

The subjects of the present study composed of matching sample of 47 thalassaemic children and 47 control, aged **10-16** years who and their parents agreed to participate in the study.

Sample size calculation:

Sample size was 47 cases (thalassaemic children) and 47 control (normal children) assuming that the prevalence of peer victimization among the study age group is 31 %⁽³⁾. The power of test is 80% and confidence level is 95% and odd's ratio is 3. Sample size was calculated using Epi-Info version 7 statistical software program.

Tools of data collection:

Two tools were used to collect necessary data. **Tool I: A structured interview questionnaire** was developed by the researchers, which consisted of two parts;

Part (1): Characteristics of studied thalassaemic and normal children (cases & control) which includes demographic information about child's age, sex, residence, number of siblings, birth order, school grade, father/mother consanguinity, father/mother education and occupation

Part (2): Data about thalassaemic children (cases), which consisted of two subparts: (a) medical history of the disease: which consists of time of disease diagnosis, other diseased family members, the type of sport the child play, the most symptom of the disease that causing distress, frequency of blood transfusion per month, iron chelation therapy, age of starting chelation therapy.

(b) Observational checklist of signs and complications that were found in studied thalassaemic children: it contains 13 items. These items are pallor, jaundice, bossing of the skull, head enlargement, depressed nasal bridge, mongoloid eye, maxillary hyperplasia, teeth decay, short stature, delayed puberty, hepatosplenomegaly and abdominal enlargement.

Tool II: Multidimensional Peer-Victimization Scale (MPVC)

This scale is adopted from **Mynard & Joseph⁽¹¹⁾** and consists of 16- items designed to measure aspects of victimization through four

subscales: {(**Physical victimization subscale:** Items 1, 5, 9, and 13), (**Verbal victimization subscale:** Items 3, 7, 11, and 15), (**Social manipulation subscale:** Items 2, 6, 10, and 14) and (**Attacks on property subscale:** Items 4, 8, 12, 16)}.

Each item is rated on a three-point Likert scale, ranging from 0-2 {Not at all (=0), Once (=1) and More than once (=2)}. The overall total score ranges from 0-32; scores on each of the four subscales have a range of 0 to 8. Higher scores reflect more victimization. This scale was translated into Arabic language, validated and reliability test was done (Cronbach's Alpha 0.90 with good consistency).

Content validity & Reliability:

The tools were tested for content validity by five experts (two professors of pediatric nursing, one professor of Pediatric, one professor of psychiatry and one professor of community). The recommended modifications were done and the final form was ready for use. Reliability of tools was done by using Cronbach's Alpha test reliability coefficient to measure the internal consistency for the final scales.

Fieldwork

The aim and the procedures of the study were explained and written informed consent was obtained from thalassaemic children and their parents who accepted to participate in the study then the researcher interviewed thalassaemic children individually to collect necessary data. The process for data collection for each child took about 20-30 minutes.

The researcher attended the Pediatric Hematology Outpatient Clinic for 4 days/week (Saturday, Sunday, Tuesday and Wednesday) for data collection from 9:00 A.M to 2:00 P.M. The data was collected from thalassaemic children (cases) during 3 months, starting from July 2020 to September 2020. After collecting the data, the researcher went to the selected schools and explained to their directors the aim of the study and the

nature of the tools used for data collection, gave them a copy of the tool and approved letters from the Educational Administration.

The researcher decided the number of students (control) to be collected from each school based on correspondence with studied thalassaemic children (cases) then the aim of the study and the nature of the tools were explained to the selected students after that the researcher interviewed control group children individually for 3 days/week (Saturday, Monday and Wednesday) from 9A.M to 1 P.M. Data was collected from selected students within one month, starting from mid October 2020 to the mid November 2020.

Pilot study:

The pilot study was conducted on 10 children (5 thalassaemic and 5 control) representing 10% of calculated total sample size. The aim was to test applicability, feasibility and practicality of the tools. The children involved in the pilot study were included in the study sample since no modifications were done in the tools.

Administrative and ethical considerations:

The study was approved by the Research Ethics Committee (REC) of Faculty of Nursing at Zagazig University. An official permission was obtained by submission of formal letters issued from the dean of faculty of nursing, Zagazig University to the responsible authorities of Pediatric hematology Outpatient Clinic at Zagazig University Hospitals to obtain their permission for data collection. Also the Education Directorate at Zagazig city and they referred the researcher to the director of Educational Administration who directed the researcher to the selected schools with approval letters. Then, Written informed consent of participants and their parents who approved to participate in the study was taken after full explanation of the aim of the study. They were assured

that the information would be used for the research purpose only and total anonymity and confidentiality of subject's data were maintained.

Statistical analysis:

Data entry and statistical analysis were done by the SPSS version 20. Data were presented by frequency tables with percentages for qualitative variables and means and standard deviations for quantitative variables. Chi-square test (X^2) was used to assess if there were statistically significant differences between control and thalassaemic children regarding Peer Victimization. Student t-test (t) was used to determine statistically significant difference between control and thalassaemic children regarding mean values of total scores of Multidimensional Peer Victimization Scale. In order to identify the independent predictors of Peer-victimization, the Stepwise multiple linear regression was used. Statistical significance was considered at p. value < 0.05.

Results:

Table (1) shows socio-demographic characteristics of the studied children. Regarding the age, 38.3% of both control and thalassaemic groups were at the age group from 13 to 16 years with mean age of 13.98 ± 1.8 years. Also, 61.7% of both groups were males. It was also found that 100% of the studied children were from rural areas. The same table reveals that 51.1% of thalassaemic children had two siblings compared to 46.8% in the control group, meanwhile 44.7% and 51.1% of thalassaemic and control group respectively were the 1st child in the family. Preparatory school students represented 31.9% in thalassaemic group and 40.4% of the control group.

Table (2) Demonstrates Socio-Demographic Characteristics of Studied Children's Parents. Regarding mothers' educational level; 44.7% of the control group children mothers finished their university education

compared to 12.8% of the thalassemic children mothers. Housewife mothers constituted 66% and 89.4% of the studied children mothers in control and thalassemic groups respectively. On the other hand, 59.6% of control group children fathers finished their university education compared to 17% of thalassemic children fathers. As regards to father occupation, 31.9% of thalassemic children fathers were employees compared to 83% of control group. The same table reveals that 51.1% of thalassemic children had positive mother-father consanguinity, in which 95.8% were fourth degree relatives compared to 4.3% in the control group, in which 100% were fourth degree.

Table (3) reveals Medical history and observed physical signs and complications among the studied thalassemic children. Concerning time of disease diagnosis, 46.8% of thalassemic children were diagnosed with thalassemia before one year of age. Regarding to family history of the disease, 51.1% of the studied thalassemic children had positive family history and 75% of them had a thalassemic brother or sister. Also the same table displays that the most common symptoms of thalassemia causing distress or embarrassment among the studied thalassemic children were bone and abdominal pain, headache, fatigue respectively as follows 44.7%, 42.6% and 31.9%. Concerning symptoms and complications, the most common observed signs and complications among the studied thalassemic children were pallor, short stature, depressed nasal bridge, teeth decay and splenomegaly respectively as follows; 97.9%, 66.0%, 53.2%, 27.7% and 27.7%.

Table (4) Distribution of peer victimization among the studied children. As observed from this table, children in the control group were more prone to peer victimization than thalassemic children; this was evidenced by their answers to all items of the multidimensional peer

victimization scale and the results were statistically significant ($p < 0.05$) except for the item (punched me).

Comparison between both control and thalassemic groups regarding mean values of physical, verbal, social victimization, attacks on property and total score of peer victimization was clarified in **table (5)**. It was found that thalassemic children less victimized than control group children. Also, boys were victimized by their peers more than girls in both control and thalassemic groups respectively; boys (10.41 ± 6.2 and 1.97 ± 5.86) girls (9.89 ± 3.95 and 0.44 ± 1.89). The results were highly statistically significant ($p = 0.001$). The same table reveals that in control group; both boys and girls were more prone to verbal victimization respectively as follows (3.37 ± 2.11) and (3.11 ± 1.84). In addition, girls with mean value 3.67 ± 1.97 were more likely to be socially victimized than boys (2.66 ± 1.97); the results were highly statistically significant ($p < 0.001$).

Table (6) revealed that birth order was a highly statistically significant independent negative predictor of peer victimization in thalassemic group; it is noticed that peer victimization increases with decreasing birth order ($p = 0.001$). Conversely, sibling number was a statistically significant independent positive predictor that affected peer victimization in thalassemic children; as peer victimization increases with increasing of sibling number ($p = 0.027$). The model explains 13% of the variation in this score as the value of r-square indicates.

Discussion:

Peer victimization and bullying are at the forefront of public discourse and are a part of the increased attention by both scientists and the public also it is associated with negative psychosocial consequences, Ostrov & Perry⁽¹²⁾. As with other chronic diseases, thalassemia and its treatment are associated with important psychological problems. The inherited nature of the disease, its effect on

appearance during one's life, the possibility of physical changes and the need for continuous treatment regimen can have serious implications on the child's emotional development and relationships with his peers, Behdani, et al. ⁽¹³⁾ In addition, belonging to a peer group might also be more difficult for children and adolescents with a chronic physical condition, as they may feel stigmatized and different from their peers. Also they are more often victims of physical violence and often bullied, Emerson et al. ⁽¹⁴⁾ The present study was conducted on a matching sample of 47 cases (thalassaemic children) and 47 control (normal children), aged 10-16 years with mean age of 13.98 ± 1.8 years in which 61.7% of them were males and children of both groups were from rural areas.

The present study shows that the most significant socio-demographic difference among children with and without thalassaemia was different educational grade between children of the same age as it was found that Preparatory school students represented 31.9% in thalassaemic group and 40.4% in control group. This may be due to regular blood transfusion, treatment regimen, follow up appointments or weakness associated with this chronic illness, beside the negative consequences of chronic anemia and disease complications that affect thalassaemic children school attendance and academic achievement. Moreover, parents usually develop over protection attitude toward ill child, which may hinder the child to go to school when they actually could.

Hakeem et al. ⁽¹⁵⁾ who carried out study to assess health-related quality of life of thalassaemic patients between 8 and 18 years of ages in Upper Egypt agreed with the results of the present study and reported that preparatory school students were 48.4% of thalassaemic children and 78.1% of control group children. Also Yahia et al. ⁽¹⁶⁾ who conducted a study to identify Predictors of anxiety and

depression in Egyptian thalassaemic patients found that 15.1% of thalassaemic children and 17.5% of control group children were in preparatory school.

Zamani et al. ⁽¹⁷⁾ in Iran, Choudhari and Behera, ⁽¹⁸⁾ in India and Al-Kherbash et al, ⁽¹⁹⁾ in Yemen, found that consanguineous marriage was common among thalassaemic children's parents respectively as follow; 73.7%, 26.6%. And (74.2%; the majority of them (64.2%) were fourth-degree relatives). These findings go in the same line with the results of the current study as it was found that more than half (51.1%) of thalassaemic children had positive mother-father consanguinity, in which 95.8% were forth degree relatives compared to 4.3% in the control group, in which 100% of them were forth degree.

These finding could be explained by the fact that consanguineous marriages are encouraged and practiced in rural areas as it was found in the present study that 100% of studied children were from rural area. Also the closer the relation between the parents, the greater the risk that many children might be born with a hereditary disorder such as thalassaemia as the current study revealed that more than half (51.1%) of affected children have another affected family member and 75% of them had a thalassaemic brother or sister

This finding agrees with Yahia et al. ⁽¹⁶⁾ and Adly& Ebeid ⁽²⁰⁾ who carried out study to determine cultural preferences and limited public resources influence the spectrum of thalassaemia in Egypt; both studies reported that more than half of affected children have another affected family member, compared to none of the control group. Also in the same context, Rudra et al. ⁽²¹⁾ who conducted a study to assess awareness among parents of β -thalassaemia major patients regarding prenatal diagnosis and premarital screening in Bangladesh and Baraz et al. ⁽²²⁾ in Iran who carried out a study to

compare quality of life between the adolescents with beta-thalassemia major and their peers; reported that 40.8% and 43.1% of patients had positive family history of thalassemia respectively.

Aboeela et al. ⁽²³⁾ who conducted a study to evaluate the effect of multidimensional intervention on improving adherence of thalassaemic children to iron chelation therapy in the same sitting of the study reported the following complications; delayed puberty (31%), cardiac complications (28.6%), bone complications (21.4%) and hepatic complications(11.9%) mean while changes in physical appearance were more prominent in thalassaemic children in the current study as follow pallor(97.9%), short stature(66.0%), depressed nasal bridge(53.2%), teeth decay(27.7%) and splenomegaly (27.7%).

The current study showed that thalassaemic children less victimized than control group children and the difference was highly statistically significant. This may be due to empathy and over protection from their peers, also thalassaemic children may deny what they really suffer from their peers in order to feel better about themselves and sound better to others.

In contrast, Pinquart ⁽²⁴⁾ in Marburg , Germany who carried out systematic review to compare bullying involvement of children with and without chronic physical illness and/or physical/sensory disability; found that children and adolescents with chronic physical illness or disability were more likely to be victims of bullying than normal children (odds ratio [OR] = 1.65). Additionally, Sentenac et al. ⁽²⁵⁾ who investigate peer victimization and subjective health among students reporting disability or chronic illness in 11 Western countries showed that 13.5% of the students reported being bullied at least two or three times a month. Also children with disability and chronic illness were more victimized than normal children in all the studied

countries. This difference from the results of the current study may be due to cross-cultural differences.

The results of the present study found that boys were victimized by their peers more than girls in both control and thalassaemic groups respectively; boys (10.41±6.2 and 1.97±5.86) girls (9.89±3.95 and 0.44±1.89). Possible explanation of this result is that boys usually deal with each other in an aggressive way while girls are more shy to tell the truth about what they are exposed regarding peer victimization. This finding goes in the line with Due et al. ⁽²⁶⁾, in their international survey in 35 countries, found that boys were more victimized than girls in 30 countries, but gender differences were minor in most of these countries.

On contrary, Zosuls et al. ⁽²⁷⁾ who conducted a study about developmental changes in the link between gender typicality and peer victimization and exclusion in USA reported that the number of boys and girls being victimized is about the same and there was no significant difference.

Verbal victimization was found to be the most common peer victimization among boys and girls in the control group in the current study respectively as follow 3.37±2.11 and 3.11±1.84. Also girls with mean value 3.67±1.97 were more likely to be socially victimized than boys (2.66±1.97). These results might be attributed to that boys and girls in this specific age group use insults such as (name-calling) as normal mechanisms of interaction between peers also girls usually use means as ignorance, social isolation and exclusion as indirect expression of violence against others which more consistent with traditional stereotypes of femininity. while García & Ochotorena ⁽²⁸⁾ who investigate the Lifetime victimization among Spanish adolescents as it was found that female students would be more at risk of verbal and social victimization than boys respectively as follow; (females;17.2% & 51.5%) and

(males:9.4% &44.9%). In addition, Bartolomé Gutiérrez& Díaz Herráiz ⁽²⁹⁾ in Spain who carried out a study to assess social support and self-perception in bullying roles; reported that the girls scored significantly higher on social victimization ($t(674.01)$).

Also Veiskarami et al. ⁽³⁰⁾ in Iran who conducted a study to compare verbal victimization among male and female high school students and Fung et al. ⁽³¹⁾ in Hong Kong who conduct a recent study to determine the age and gender effect on four forms of peer victimization among children and adolescents; revealed that boys were more verbally victimized than girls with mean value as follow;(1.667& 1.571) and (2.62& 2.23) respectively.

In contrast, Casper& Card ⁽³²⁾ who carried out a meta-analytic review to identify the overlap and associations of physical and social victimization with social-psychological adjustment at University of Alabama and Fung et al. ⁽³¹⁾; reported that physical victimization was higher in boys than in girls and no significant difference between the boys and girls with regard to social victimization.

The present study found that birth order was a highly statistically significant independent negative predictor of peer victimization in thalassemic group ($p=0.001$). Conversely, sibling number was a statistically significant independent positive predictor that affected peer victimization in the same group ($p=0.027$)

On contrast, Darwish et al. ⁽³³⁾ reported that differences related to birth order and sibling number were not statistically significant as regard to peer victimization.

Conclusion:

In the light of the present study, it was concluded that thalassemic children were less victimized by their peers than control group children. Also, birth order was a highly statistically significant independent negative predictor of peer victimization in thalassemic group, while sibling number was a statistically significant independent positive predictor that affected peer victimization in the same group.

Recommendations:

In view of the study findings, the following recommendations are proposed:

- Implement specific anti-victimization programs that targeted at improving shared knowledge, acceptance, and positive interactions between children and their peers to lower the level of victimization.
- Encourage school nurse to work with students, the school and community to implement a multi-strategy approach to prevent peer victimization.
- Encourage parents to engage in educational activities that promote connections with their children, foster communication, problem solving, limit setting, and monitoring of children.
- **Further studies are needed to:**
- Assess peer victimization and its effect on psychosocial health among children with chronic illnesses rather than thalassemia especially that have overt effect on appearance and require special health care needs.
- Design and develop counseling programs that involve social and self-development skills that serve both the bullies and victims.

Table (1): Socio-Demographic Characteristics of the Studied Children (n=94).

Child characteristics	Groups			
	Control (n=47)		Thalassemic (n=47)	
	No	%	No	%
Age (years)				
11-	14	29.8	14	29.8
13-	18	38.3	18	38.3
13-16	15	31.9	15	31.9
Mean \pm SD	13.98 \pm 1.8			
Gender				
Male	29	61.7	29	61.7
Female	18	38.3	18	38.3
Residence				
Rural	47	100.0	47	100.0
Urban	0	0.0	0	0.0
Number of siblings				
one	10	21.3	4	8.5
two	22	46.8	24	51.1
three	13	27.7	16	34.0
four	2	4.3	3	6.4
Birth order				
The first	24	51.1	21	44.7
The second	16	34.0	14	29.8
The third	6	12.8	10	21.3
More	1	2.1	2	4.3
Educational status				
Student	47	100.0	47	100.0
Educational grade				
Primary	15	31.9	18	38.3
Preparatory	19	40.4	15	31.9
Secondary	13	27.7	14	29.8

Table (2): Socio-Demographic Characteristics of Studied Children's Parents (n=94)

Parent characteristics	Groups			
	Control (n=47)		Thalassemic (n=47)	
	No	%	No	%
Mother educational level				
Illiterate, read and write	4	8.5	20	42.6
Primary education	1	2.1	2	4.3
Secondary education	21	44.7	19	40.4
University education	21	44.7	6	12.8
Mother occupation				
Working	16	34.0	5	10.6
Housewife	31	66.0	42	89.4
Father educational level				
Illiterate, read and write	5	6	19	40.4
Primary education	1	2.1	6	12.8
Secondary education	13	27.7	14	29.8
University education	28	59.6	8	17.0
Father occupation				
Employee	39	83.0	15	31.9
Workers	8	17.0	12	25.5
Craftsman	0	0.0	12	25.5
Occupational man	0	0.0	1	2.1
Farmer	0	0.0	7	14.9
Consanguinity of parents				
Yes	2	4.3	24	51.1
No	45	95.7	23	48.9
If the answer was yes, what is the degree of consanguinity?				
Forth degree	2	100	23	95.8
Fifth degree	0	0.0	1	4.2

Table (3): Medical History and Observed Physical Signs and Complications among the Studied Thalassemic Children (n=47)

Medical history	No.	Percent (%)
Time of disease diagnosis		
Before one year	22	46.8
At one year	10	21.3
After one year	15	31.9
Positive family history of the disease		
Yes	24	51.1
No	23	48.9
If the answer was yes, what is the degree of consanguinity? (n=24)		
Brothers or sisters	18	75.0
Cousin	6	25.0
Feeling constantly tired and exhausted		
Yes	23	48.9
No	24	51.1
The most common symptoms of thalassemia causing distress or embarrassment*		
Bone and abdominal pain	21	44.7
Headache	20	42.6
Dizziness	6	12.8
Fever	1	2.1
Fatigue	15	31.9
Short stature	2	4.3
Delayed puberty	1	2.1
Iron overload symptoms	1	2.1
Splenomegaly	2	4.3
Symptoms and complication[®]		
Pallor	46	97.9
Frontal and parental bossing of skull	8	17.0
Head enlargement	12	25.5
Depressed nasal bridge	25	53.2
Mongoloid eye	6	12.8
Maxillary hyperplasia	8	17.0
Teeth decay	13	27.7
Long bone deformities	1	2.1
Short stature	31	66.0
Delayed puberty	11	23.4
Hepatomegaly	0	0.0
splenomegaly	13	27.7
Abdominal enlargement	5	10

*: more than one answer

☺: More than one sign

Table (4): Distribution of Peer Victimization among the Studied Children (n=94).

Peer Victimization		Control (n=47)		Thalassemic (n=47)		χ^2 (p-value)
		No.	%	No.	%	
1. Punched me	Not at all	42	89.4	45	95.7	1.437 (0.488 NS)
	once	2	4.3	1	2.1	
	More than one	3	6.4	1	2.1	
2. Tried to get me into trouble with my friends	Not at all	11	23.4	44	93.6	48.514 (<0.001**)
	once	18	38.3	3	6.4	
	More than one	18	38.3	0	0.0	
3. Called me names	Not at all	14	29.8	43	91.5	38.802 (<0.001**)
	once	16	34.0	0	0.0	
	More than one	17	36.2	4	8.5	
4. Took something of mine without permission	Not at all	22	46.8	46	97.9	30.778 (<0.001**)
	once	13	27.7	0	0.0	
	More than one	12	25.5	1	2.1	
5. Kicked me	Not at all	32	68.1	44	93.6	9.921 (0.007**)
	once	9	19.1	2	4.3	
	More than one	6	12.8	1	2.1	
6. Tried to make my friends turn against me	Not at all	15	31.9	46	97.9	44.914 (<0.001**)
	once	24	51.1	1	2.1	
	More than one	8	17.0	0	0.0	
7. Made fun of me because of my appearance	Not at all	27	57.4	44	93.6	17.840 (<0.001**)
	once	10	21.3	0	0.0	
	More than one	10	21.3	3	6.4	
8. Tried to break something of mine	Not at all	31	66.0	46	97.9	16.286 (<0.001**)
	once	10	21.3	1	2.1	
	More than one	6	12.8	0	0.0	
9. Hurt me physically in some way	Not at all	35	74.5	44	93.6	6.811 (0.03*)
	once	7	14.9	1	2.1	
	More than one	5	10.6	2	4.3	
10. Refused to talk to me	Not at all	29	61.7	45	95.7	17.459 (<0.001**)
	once	12	25.5	0	0.0	
	More than one	6	12.8	2	4.3	
11. Made fun of me for some reason	Not at all	26	55.3	43	91.5	17.924 (<0.001**)
	once	16	34.0	1	2.1	
	More than one	5	10.6	3	6.4	
12. Stole something from me	Not at all	24	51.1	45	95.7	24.086 (<0.001**)
	once	15	31.9	1	2.1	
	More than one	8	17.0	1	2.1	
13. Beat me up	Not at all	34	72.3	44	93.6	7.782 (0.020*)
	once	6	12.8	2	4.3	
	More than one	7	14.9	1	2.1	

14. Made other people not talk to me	Not at all	30	63.8	46	97.9	17.813 ($<0.001^{**}$)
	once	9	19.1	0	0.0	
	More than one	8	17.0	1	2.1	
15. Swore at me	Not at all	18	38.3	42	89.4	26.746 ($<0.001^{**}$)
	once	10	21.3	1	2.1	
	More than one	19	40.4	4	8.5	
16. Deliberately damaged some property of mine	Not at all	28	59.6	45	95.7	17.737($<0.001^{**}$)
	once	11	23.4	1	2.1	
	More than one	8	17.0	1	2.1	

*: statistically significant ($p<0.05$)

** : statistically highly significant ($p<0.01$)

NS: statistically non-significant ($p>0.05$)

Table (5): Comparison between Both Control and Thalassemic Groups Regarding Mean Values of Physical, Verbal, Social Victimization, Attacks on Property and Total Score of Peer Victimization.

Peer victimization	Groups		t	p-value
	Control (n=47)	Thalassemic (n=47)		
	Mean \pm SD	Mean \pm SD		
Physical victimization				
Boys	1.68 \pm 1.97	0.55 \pm 1.76	2.320	0.001**
Girls	0.94 \pm 1.16	0.00 \pm 0.00	3.449	0.001**
Verbal victimization				
Boys	3.37 \pm 2.11	0.76 \pm 2.18	4.648	0.001**
Girls	3.11 \pm 1.84	0.44 \pm 1.89	4.290	0.001**
Social victimization				
Boys	2.66 \pm 1.97	0.34 \pm 1.23	5.356	0.001**
Girls	3.67 \pm 1.97	0.00 \pm 0.00	7.895	0.001**
Attacks on property				
Boys	2.69 \pm 2.12	0.31 \pm 1.23	5.224	0.001**
Girls	2.17 \pm 2.28	0.00 \pm 0.00	4.029	0.001**
Total score of Peer Victimization				
Boys	10.41 \pm 6.21	1.97 \pm 5.86	5.327	$<0.001^{**}$
Girls	9.89 \pm 3.95	0.44 \pm 1.89	9.147	$<0.001^{**}$

** : statistically highly significant ($p<0.01$)

Table (6): Stepwise Multiple Linear Regressions for Predicting Factors which Affect Peer Victimization in the Thalassemic Group.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	-1.005	1.834		-.548	0.586	-4.704	2.693
Birth order	1.628	.579	-.310	2.811	0.01**	2.797	0.460
Sibling number	1.718	.750	.266	2.290	0.027*	.205	3.231

*: significant (p<0.05)

**: highly significant (p<0.01)

R-square=0.13, ANOVA: F=6.971, P<0.01

Variables entered and excluded: Child age, sex, child educational grade, consanguinity of parent, father education, father occupation, mother education, mother job, total depression score, anxiety score, global self-worth score, social score and total self-perception.

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