

# Prevalence of Depression Among Patients With Thalassemia in Southern of Iran

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## Abstract

**Background:** Major thalassemia is known as the most prevalent genetic disorder in Iran. Patients with major thalassemia suffer mostly from psychological problems particularly depression, which can decrease their efficiency in life. Therefore, the present study aimed to explore the prevalence of depression among these patients. **Materials and Methods:** The present descriptive, cross-sectional research was conducted during summer, 2014 in Abu Raihan Special Disease Center of Bandar Abbas. A sample of 275 patients was selected through the convenient sampling method. The inclusion criterion was afflicted with major thalassemia while the exclusion criterion was an unwillingness to participate or incomplete questionnaires. A demographic information inquiry was made of the subjects followed by Beck Depression Inventory. The elicited data entered SPSS ver.19 for the required statistical analyses. T-test, mean and standard deviation were used to analyze the data, and the significance level was set at <0.05. **Result:** The results revealed that 41.5% of the sample suffered from a high depression rate. Significant correlations were found between depression and loss of close relatives, history of depression, family rows, and the history of psychological diseases in the family. **Conclusion:** Considering the prevalence of depression in Iran (41.5%), these patients need more support and attention especially to their psychological state. **Keywords:** Depression, Major Thalassemia, Bandar Abbas.

## Introduction

As the most prevalent genetic disorder in Iran, major thalassemia results from the deficient synthesis of one or more polypeptide globin chains. It is followed by severe anemia and physical implications such as poor growth and notable changes in the facial bones and facial distortion (1, 2). The majority of those with major thalassemia are aged 16 to 24 years and die due to iron overload resulting from blood transfusion, which is the main treatment (3). Thalassemia prevails among all races. Those afflicted comprise 3-4% of the whole national population (4). The prevalence is increased in the northern and southern coastal areas (5). In fact, 10% of the residents in these areas carry the gene for the disease (5). Moreover, it is unfortunate that annually about 1000-1500 infants with thalassemia are identified and added to the whole thalassemia population of the country (4). Some research findings in Bandar Abbas

Special Disease Center revealed that 12.7% of 300 couples in the area used no contraceptives at the time of research. The same study reported that 71.3% of couple participants were afflicted with minor thalassemia and had not received any proper sexual education (6). Some evidence indicates that 80% of those with major thalassemia suffer from at least one psychological disorder, which depression is only one. Depression is not often observed only in these patients but also among the family members (2). Their depression might be rooted in a lack of self-confidence, frequent absence at school, blood transfusion, frequent hospitalization and admitting to the fact that their disease will never be without a symptom (7). Loss of confidence can be accompanied by progress in disease and the emergence of such side effects as facial distortion and a negative physical impression of self (8). The World Health Organization has estimated that depression will be the second most prevalent disabling

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disease in 2020 among all physical and mental diseases (9). A stable and highly resisting symptom of depression, which may take days, weeks and months is the change of a mood (10). Moreover, a patient might feel sorry, valueless, heartless and unconfident. They might avoid social relations and suffer from sleep disorders, malnutrition and even psychosomatic disorders in introversion or extroversion. The implications will be the unwillingness to continue life, taking no pleasure in life, obsessions, suicide, feeling incapable or inefficient in social encounters (11, 12). Among the other health outcomes are reduced activity, inefficiency and lack of self-care (10). All these implications make one incompetent in social life. Due to the prevalence of depression and its great many side effects and the high prevalence of the disease in the region, the present research was conducted to focus on patients with major thalassemia who visited at Abu Raihan Center during summer 2014.

### Materials and methods

The present research was cross-sectional research. A sample of 275 subjects was selected according to the convenient sampling method by Cochran formula with confidence 5%. The inclusion criterion was afflicted with major thalassemia. Those entering the study first informed of the purpose of the study and then, upon their consent, received the questionnaires. Patients who reluctant to fill out the questionnaires, a chronic illness other than thalassemias, such as hepatic failure, renal failure, heart disease, addiction, incomplete questionnaires, and those prohibited from providing some information from a family member or so were excluded. The subjects were initially supposed to fill out their demographic information including age, sex, socio-economic level, marital status, history of depression, recent experience of loss of a close relative and family rows. Then, they received Beck's Depression Inventory includes scales such as emotion, cognition, apparent behavior, physical signs, and interpersonal semiotics. Data were analyzed by SPSS ver.19 using T-test was, and mean and standard deviation was used for descriptive data. Frequencies and chi-squared tests were used to analyze the qualitative data. The significance level was set at  $P < 0.05$ .

### Result

Once the questionnaires were distributed among all the subjects, 264 were returned in full. The others were excluded due to incomplete content. The return rate of this research was (96%). One hundred thirty-three of these cases were female (50.4%), and 131 were male (49.6%). As their education was concerned, the majority of subjects had a diploma (48.2%); were uneducated (5.1%); had an elementary school degree (8.8%); had a junior high school degree (29.9%); had a bachelor's degree

(6.9%) and held a higher academic degree (1.1%). All the participants aged between 8 and 42 years and their average age were 20.93 years. The age group 24-42 years (31.6%) was the most frequent age range while the age group 21-24 years (19.5%) comprised the least frequent age group. Economically speaking, the majority of patients (60.9%) enjoyed an average-level economic state. As for occupation, 50.5% of the subjects left this item unanswered. Others, however, reported a 13.1% of working freelance, 5.5% of unemployment, 6.2% of housewifery, 20% of student life, 3.3% of university student life, 0.7% of worker's job and 0.7% of the official job. Regarding marital status, 9.8% of the sample were married while 88.3% were single. Of them, 1.9% were of divorced parents. The results indicated that 58 subjects had a history of depression while the other 214 subjects stated no prior experience of depression. Also, 28% of the sample experienced a loss of close relatives. In addition, 14.3% of the population acknowledge having family rows. No history of psychological diseases was reported in 84.4% of cases while 15.6% of subjects reported some (table-1).

Chi-squared test results revealed statistically significant correlations between the current state of depression and experience of a relative loss ( $P < 0.03$ ), history of depression ( $P < 0.001$ ), family rows ( $P < .001$ ) and history of the psychological disease in family ( $P < .001$ ). No statistically significant correlations were found between the current state of depression and subjects' sex ( $P > .11$ ), education ( $P > .27$ ), economic status ( $P > .56$ ), occupation ( $P > .27$ ) and age ( $P > .34$ ). Figure-1 illustrates the current state of depression in the research sample.

### Discussion

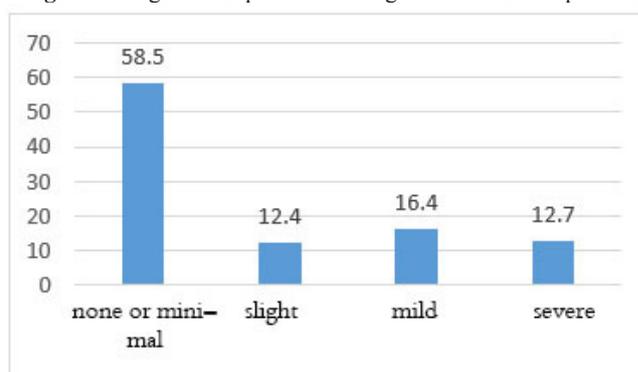
In a body of research in Iran, the prevalence of depression in patients staying in Shahid Rahnamoon Hospital of Yazd was 70% in the internal and external ward, 30% among those with myocardial infarction, 51% in cardiac care unit (CCU) and 63% in post-cardiac disease section (13). In some other research in Sari, the prevalence of depression among patients with thalassemia was 14% (14). As described before, 80% of patients with major thalassemia suffer from at least one psychological disorder. Depression is the most common disorder of this type (2) and is followed by a change of mood, feeling sorry, worthless and gloomy (10). Once added to the problems a patient already has in life, these implications can further make life hard. The present study explored the prevalence of depression among patients with major thalassemia in Abu Raihan Center of Special Diseases in Bandar Abbas. The findings revealed that 41.5% of the patients suffered from certain degrees of depression. In a similar attempt, Aziznejad et al. showed the rate of depression among adolescents with major thalassemia and compared it to non-thalassemia peers. They indicated 38.5% of the former group had a certain degree

**Table 1.** Frequency and percentage of responding to questions

Variable	Level	Frequency	Percent
Sex	Female	133	50.4
	Male	131	49.6
Education level	Academic education	22	8
	High school	132	48.2
	Under high school	120	43.8
Economic status	Very weak	20	7.5
	Weak	79	29.7
	Medium	162	60.9
	Rich	5	1.9
Occupation status	Employed	40	14.5
	Unemployed	32	11.7
	Student	64	23.3
	Unanswered	139	50.5
Marital status	Married	26	10
	Single	234	90
Relative loss	Yes	74	28
	No	190	72
Family rows	Yes	36	14.3
	No	216	85.7
History of depression	Yes	58	21.3
	No	213	78.3
History of the psychological disease in the family	Yes	40	15.6
	No	215	84.6

of depression (15). A body of related research revealed that the rate of depression is higher among girls with certain diseases such as asthma and epilepsy. The same rate showed to be higher among boys with such other diseases as cancer (16). In similar research in Hormozgan, no statistically significant correlation was found between the current state of depression and sex. However, the rate of depression was estimated at 40.6% among girls and 44.3% among boys. The higher rate of depression among boys can be a function of economic problems as the Iranian culture; men are supposedly breadwinners. Patients with major thalassemia are faced with limitations on work as they have attendance problems and physical restrictions. Aziznejad et al. (15)

**Figure 1.** Degree of depression among the Thalassemic patients



and Parviniannasab et al. (17) reported no significant correlation between sex and depression. However, Saravi et al. who investigated the accompaniment of thalassemia with depression, reported a significantly higher score of depression among girls (16). Research findings on the correlation of depression and age have been contradictory as some reported a positive some negative and yet some others showed no correlation between the two variables (16). No statistically significant correlation was found in the present research between depression and age. This was in line with the findings reported by Nazemian et al. (18) and Parvinian et al. (17). However, they were not in agreement with Taziki et al. that observed among diabetic patients. Nor was it similar to the results obtained by Sharghi et al. about depression in mothers whose children suffered from thalassemia or other blood malignancies (19, 20). These divergences in findings can result from differing research populations. In the present research as well as Parvinian et al., the research population was comprised of patients with major thalassemia, which differed from the other two studies. The present findings yielded no statistically significant correlation between patients' depression and education level. However, it needs to be reminded that the highest rate of depression was observed among the uneducated and those with an elementary school degree. Low education level and the required skills for learning is followed by social, physical and economic damages, which can be why depression prevails among the less educated. In two investigations carried out by Sharghi et al. (20) and Nazemian et al. (18) concerning depression among hemodialytic patients, the two variables showed no correlated significantly. The same variables showed significant correlation in Parviniannasab et al. as well as Aziznejad et al. studies (15, 17). The present research revealed no statistically significant correlation between the current state of depression and marital status. However, the percentage of depression among the single (42.7%) showed to be higher than the married (34.6%). This can be explained by the fact that marriage brings with it a wider range of support of which the single is deprived. Similar results were reported by Vakili et al. that explored the rate of depression, and its correlates in

truck drivers in Yazd in 1999 (21) as well as the findings reported by Nazemian et al. (18). In their exploration of depression among university students, Jalilian et al. (22) looked into the role of general self-efficacy and perceived support. Hosseini et al. investigated depression and its cofactors among university students (23). The two studies just mentioned observed a statistically significant correlation between these variables and found depression more severe among the single than the married. The reason why 50.5% of the subjects left the occupation item unanswered can be a design error. Nevertheless, the analysis of the responses to this item revealed no statistically significant correlation between occupation and depression. On the contrary, these two showed to be significantly correlated in Nazemian et al. research. This difference can be due to the divergences in research design as in Nazemian's investigation the mere occupation variable was explored while in the present study the type of occupation mattered. Patients' depression and socio-economic status showed no statistically significant correlation in the present study. Yet, the highest percentage of depression was observed in the low-status group (50.7%). The prevalence of depression showed to be equal for the very poor and wealthy groups (40%). Those of a low socio-economic status might be deprived of proper nutrition and healthcare education. They might even be unable to pay for health-related costs. Inability to pay for medical costs adds to the life pressures patients with major thalassemia tolerate. Contrary to the present research, the two variables showed to be significantly correlated by Aziznejad et al. (15). Statistical analyses revealed a significant correlation between experience of the loss of a close relative and the current state of depression which was consistent with the results reported by Sharghi et al. (20). Family rows and the current state of depression showed to be significantly correlated in the present study, which was similar to Sharghi et al. finding (20). In their investigation of social support and depression symptoms in patients with major thalassemia in Bushehr, Akaberian et al. found a negative correlation between depression and social support in terms of family support and not friends (24). Another variable explored in this study was the history of a psychological disease in one's family and the current state of depression. These two showed to be significantly correlated, which agreed with Sharghi et al. study (20).

## Conclusion

The present research revealed high degrees of depression among those with major thalassemia visited at Abu Raihan Center of Special Diseases in Bandar Abbas, and high rate of depression in comparison to the same study in Sari, but in comparison to CCU and post cardiac disease section, thalassemic patients had lower depression rate (10, 16). In Lauren et al. study 11% of the

thalassemic patient showed symptoms of depression, 8% with mild depression, 2% moderate symptoms and 1% severe symptoms of depression (25). In comparison to Lauren et al. study rate of depression in this study is higher. This feeling of depression can be influenced by a history of depression, experience of the loss of a close relative, family rows, history of psychological disorders in one's family and so on. The effect of the other factors was not confirmed in the present research and, therefore, requires further research. It is suggested that bigger research populations and samples be adopted to compare depression among patients with or without thalassemia. More variables can be investigated. Furthermore, the present research suffers from certain temporal and special limitations. In other words, the same research if conducted somewhere else might yield different findings.

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## Conflict of Interest

The authors declare that there is no conflict of interest.

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