



A Comparative Study of Knowledge and Attitude of Medical and Non-Medical Students of Iranshahr about Premarital Counseling and Factors Related to Thalassemia In 2019

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Abstract

Background and Purpose: Students as an educated group can be effective in preventing new cases of thalassemia by providing public education and increasing public awareness. The purpose of this study was to investigate the knowledge and attitude of medical and non-medical students about premarital counseling and factors related to thalassemia.

Research Method: In this descriptive-analytical cross-sectional study, the data about 700 medical and non-medical students of Iranshahr city in Iran in 2019 was collected through Hajian's standard questionnaire. The collected data were analyzed using one-sample t-test, Pearson's correlation test and two-way analysis of variance test in SPSS 22 software. A significance level of 0.05 was considered.

Findings: The findings showed that 69% of students were studying in non-medical universities and 31% were studying in medical sciences universities. The knowledge and attitude of medical and non-medical students of Iranshahr about premarital counseling and factors related to thalassemia

disease was at the optimal level (significance level lower than 0.05). There was a significant relationship between knowledge and attitude in medical and non-medical science students about premarital counseling and factors related to thalassemia disease (the value of "correlation coefficient" in medical science students was between 0.4 and 0.6 and in non-medical students the value was between 0.2 and 0.4). The knowledge and attitude of medical and non-medical science students about premarital counseling and factors related to thalassemia were significantly different (significance level for the field was greater than 0.05).

Conclusion: Considering the low level of awareness of the students of the Ministry of Science compared to the Ministry of Health, students with low parental education, and rural students with insufficient general knowledge, it is suggested that in addition to general education, special education should be designed and be implemented as a compulsory unit of public health for students.

Keywords: Thalassemia, Awareness, Attitude, Student, Premarital Counseling

Research ethics code: IR.IRSHUMS.REC.1398.002

Introduction

Thalassemia is considered as one of the most important health problems (Pakbaz et al., 1998). Thalassemia is a type of chronic hemolytic anemia caused by a defect in the production of one or more hemoglobin chains (Seyam et al., 2010). Thalassemia is a disease with autosomal recessive inheritance (Ghatee et al., 2016). In today's era, hereditary diseases are mentioned as the most common human diseases (Majde et al., 2008). So far, this disease has been reported in 60 countries of the world (Zeynaliyan et al., 2009). Thalassemia syndrome is more common in Mediterranean countries such as Italy, Greece and Iran (Cappellini et al., 2014). It is estimated that there are about 270 million carriers for major hemoglobin defects in the world, and about 300 to 400 thousand babies with various types of anemia are born around the world every year (Mahmoud et al., 2009; Norsalehy et al., 2005). The thalassemia population in Iran consists of more than 20 thousand people (Naderi et al., 2013). Sistan and Baluchistan province with two million and seven hundred thousand people and two thousand patients with thalassemia major has the highest incidence rate among the provinces of Iran (Samavat et al., 2004). An increase in cases with moderate or severe symptoms of thalassemia can lead to a decrease in the economic and human power of societies and impose a considerable cost on the country's economy (Rafeezadeh et al., 2010). Thalassemia, in addition to the social and psychological effects on the family, imposes a large financial burden on the country, so that the cost of blood product bags for 20 thousand patients in the country sums to 40 million dollars (Habibzadeh et al., 1998). The high cost of treatment and the emergence of psycho-social problems caused by the lack of a definitive treatment method for thalassemia have led to this disease being at the top of the list of health system problems in areas with high prevalence of thalassemia (Toosi et al., 2006). In addition, thalassemia patients suffer from many problems of impairment and weakening of the quality of life (Pakbaz et al., 2005). In addition, the

presence of a sick child in the family leads to changes in the behavior of family members and increased needs (Miri-Moghaddam et al., 2011). The World Health Organization has tried several times to prevent genetic diseases, including health education and improving the society's knowledge and attitude towards the control of hereditary genetic diseases (Alam et al., 2006). In countries with a high prevalence of hemoglobinopathy, a premarital screening program is very useful to identify and prevent at-risk marriages. Detection of the carrier couple with premarital screening program is an effective method to control thalassemia major (Hashemzadeh et al., 2013). Many countries around the world have also implemented various types of preventive programs. Iran was also among the countries that implemented this program (Alsaeed et al., 2018). Implementation of newborn screening and premarital screening and genetic counseling programs can provide adequate preventive measures (AK Al-Ali, 1996). One of the most important tasks of health centers is to hold counseling classes before marriage (Motamedi et al., 2004). Counseling and training before marriage is the basis of couples' relationships (Khaleghinejad et al., 2009). Organizing counseling sessions before marriage by efficient people is one of the most important tasks of health centers with the aim of preventing deaths and disabilities in mothers and babies, which are essential to be performed (Full translation of Shadpour, 1981). Therefore, the implementation of the national thalassemia control program, counseling and increasing the level of awareness to encourage couples suffering from thalassemia minor to withdraw from marriage is considered as a main prevention strategy in the country (Jafari et al., 2007). Thalassemia screening in people who want to get married is a good opportunity to prevent and control this disease (Ghatee et al., 2016). Effective educational methods can play an important role in increasing the level of awareness of young people before marriage and thus preventing thalassemia disease (Sarpoushi Robat et al., 2015). In this context, community education can play an effective role in raising awareness and changing attitudes and behavior (Experts from the Department of Family Health, 1997). Conducting screening in order to identify thalassemia carriers and prevent them from marrying each other by giving them education and awareness can prevent the birth of people with thalassemia major, which leads to many economic and social damages for the society and family. Education of the young generation and the students who sooner or later as the fathers and mothers of the future generation will take responsibility for the health of their children should be at the top of the thalassemia prevention programs (Siam et al., 2010). Control and family planning services in married carrier couples should be performed with more perseverance and counseling to prevent the marriage of carrier people with the cooperation of skilled people shall be implemented in order to see less incidence of thalassemia major disease (Chitsaz H. 1998). Therefore, the purpose of this study was to determine the knowledge and attitude of students about premarital counseling and factors related to thalassemia disease, so that by determining the level of knowledge and attitude of students, educational needs are known and through increasing the level of knowledge and changing their attitude, an effective step can be taken to prevent thalassemia.

Materials and Methods

This cross-sectional descriptive-analytical study was conducted on 700 students studying in Iranshahr universities in Iran including: Medical Sciences, Velayat, Islamic Azad University and Payam Noor University in 2019. Sampling was done by proportional classification method among

different fields of these 4 universities in Iranshahr. The sample size was estimated based on the following formula and according to the study of Siam et al. (Siam et al., 2010) and taking into account the error value of 5% and the confidence coefficient of 95%, the knowledge value of 12.7%, as a result 170 people per group was determined, which according to the possible loss of samples 200 people in each university was considered.

$$N = \frac{z^2(1 - \frac{\alpha}{2})pq}{d^2}$$

The students were selected by proportional classification from the class list of each field and after providing the necessary explanations about the purpose of the study and observing the principle of confidentiality and after providing a written consent to participate in the research project. A questionnaire was distributed among the students present in the university over a period of four hours, and intern students in the boys' dormitory were distributed and completed the questionnaires under the project manager, and intern students in the girls' dormitory were distributed and completed the questionnaires under the project partner. The data collection in this study included three demographic information questionnaires, a knowledge survey questionnaire, and a researcher-made questionnaire for studying students' attitudes using Hajian's research (Hajian et al., 2000).

A- Demographic Profile Questionnaire: The demographic profile questionnaire contained 14 questions that included age, gender, field of study, year of entry, number of family members, area of residence, father's education, father's occupation, mother's education, mother's occupation, ethnicity, people with thalassemia in family and relatives, number of older siblings in the family and place of residence.

B- Student Awareness Questionnaire: Hajian's thalassemia awareness questionnaire (Hajian et al., 2000) containing 10 questions with three options was used. Their rating was as follows:

If the person's score in this questionnaire was between 6-10, the person's attitude was considered good, if the total score was between 3-6, the person's attitude was considered average, and if the total score was between 0-3, the person's attitude was considered weak, which "I agree" score was given 2 and "I disagree" score was given 1, and "I have no opinion" was given a score of zero.

C- Questionnaire for Studying Students' Attitudes: The questions of this questionnaire were made by a researcher, which was prepared according to the goals of studying and reviewing the latest scientific sources and articles related to thalassemia, but the items of this questionnaire were taken from Hajian's research (Hajian et al., 2000) which contained 17 questions. It is related to the attitude of Iranshahr university students towards premarital counseling, each of which having 3 options and their rating was as follows:

If the total score of the person was between 10-17, the person's awareness was good, and if it was between 5-10, the person's awareness was average, and if it was between 0-5, the person's awareness of premarital counseling and tests related to thalassemia was weak, with "yes" given score 2, "No" given score 1 and "I have no opinion" given score zero. The validity of the questionnaires was ensured using the opinions of 10 professors and faculty members of this field (in the CVR examination, the minimum score of each item was 0.69 and the maximum score was 1. In addition, in the CVI examination, the minimum score was determined 0.84 and the maximum

score was determined 1 for different items in the criteria of simplicity, clarity and relevance). The reliability of the questionnaires was also measured and verified by the test-retest method. In this study, central tendency and dispersion indices were calculated for the desired variables. The collected data was analyzed by spss 22. In addition, one-sample t-test, Pearson's correlation test and two-way ANOVA were used to evaluate the normal distribution of the data. In statistical calculations, the level of significance was considered 0.05.

Findings

The findings showed that 66% (461 people) of the research population were female and 34% were male. Regarding parents' occupation, it was interesting to note that 33% were unemployed or workers, 24% were self-employed, and only 21% of parents were employed. In terms of parents' education, it was also interesting to know that in this research and in Iranshahr, 78% of parents were high school graduates and under; 67% lived in the city and 33% lived in the village. Finally, 69% were studying in non-medical universities and 31% were studying in the University of Medical Sciences. The one-sample t-test showed that the knowledge and attitude of Iranshahr medical students about premarital counseling and factors related to thalassemia disease was optimal. (Table 1)

Table 1: Examination of knowledge and attitude of medical students

	t-test for equality of means					
	T	Degrees of freedom	The significance level	Average difference	95 % confidence interval of the difference	
					lower	upper
Knowledge of students of medical sciences	-12.899	199	0.000	-3.805	-4.387	-3.223

Studies have also shown that the knowledge of non-medical science students in Iranshahr about premarital counseling and factors related to thalassemia disease was optimal (Table No. 2).

Table 2: Examination of knowledge and attitude of non-medical students

	t- test for equality of means					
	T	Degrees of freedom	The significance level	Average difference	95 % confidence interval of the difference	
					lower	upper

Knowledge of non - medical students	-16.979	499	0.000	-3.448	-3.847	-3.049
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We found that there was a significant relationship between knowledge and attitude of non-medical students about premarital counseling and factors related to thalassemia. Pearson's correlation test showed that there is a correlation between knowledge and attitude in non-medical students. Because the value of "correlation coefficient" was between 0.2 and 0.4, there was a relatively weak relationship. On the other hand, the value of "correlation coefficient" was positive, so there was a direct relationship (Table No. 3).

Table 3: Relationship between knowledge and attitude in non-medical students

		Knowledge	Attitude
Knowledge	Correlation coefficient	1	0.371
	The significance level		0.000
Attitude	Correlation coefficient	0.371	1
	The significance level	0.000	

Further studies showed that there was a significant difference in the knowledge and attitude of medical and non-medical science students about premarital counseling and factors related to thalassemia disease. (Table 4)

Table 4: Examining the knowledge and attitude of medical and non-medical students about premarital counseling

Variable	Sum of squares	Degrees of freedom	Mean squares	F		Partial Eta
Reformed Model	10.725	1	10.725	0.563	0.453	0.001
Intergroup	385780.737	1	385780.737	20242.794	0.000	0.967
Major (medical/non-medical)	10.725	1	10.725	0.563	0.453	0.001
Error	13302.262	698	19.058			
Total	483761	700				
Total Reformed	13312.87	699				

Discussion

The purpose of this research was to evaluate the knowledge and attitude of medical and non-medical university students regarding thalassemia tests, which was conducted on 461 female and

239 male students. These students completed the questionnaires evaluated in terms of validity and reliability and the obtained information was analyzed.

The results of this research showed that the level of knowledge of female students about thalassemia was higher than that of male students, and the gender of the studied students had an effect on their knowledge and attitude about thalassemia disease. The survey has shown that students who live in the city have higher knowledge than rural students. The higher level of awareness of the urban dwellers, which was obtained in the studies of Ismaili, Hajian and Jafari, can be affected by their higher level of education, having more means of mass communication and mass media, as well as other methods of public health education compared to the villagers. The attention of the health policy makers of the country should be drawn to pay more attention to the target and high-risk groups, including the villagers, so that more educational activities can be carried out in the rural areas to improve people's awareness and attitudes (Hajian et al., 2000; Jafari et al., 2006; Mirrashed ey al., 1997; Zahad et al., 1977). In addition, rural students who came from the village to the city have changed their attitude towards the disease and there was no significant difference in the attitude of rural and urban students and our p. value changed. In this study, the higher education of the students' parents, was related to the student's higher awareness and attitude towards diseases and how to maintain their health in the society. Sedkiani and Hajian also achieved similar results in this case in their research, i.e. they observed a significant relationship between awareness and level of education (Hajian et al., 2000; Sadaghiani et al., 2001). Students with thalassemia minor had more knowledge and attitude than other students. In other words, it can be concluded that people with thalassemia receive more education than other people. Health education in all parts of the world has a decisive and fundamental importance in slowing down the spread of this disease (Fathi et al., 1996). According to the obtained results, students of medical sciences had better knowledge and attitude than students of other non-medical sciences universities and there was a significant difference between them. It is suggested that a course unit on various diseases and their prevention, such as hereditary diseases like thalassemia, diabetes, obesity complications, infectious diseases and sexually transmitted diseases, should be included in the headlines of non-medical students' courses, so their awareness and attitude will increase and they will have better health. In addition, there was a significant difference between the age of the studied students about thalassemia and their knowledge and attitude. In a study conducted by Siam regarding the level of knowledge of Gilani students about thalassemia, it was shown that due to the low level of students' knowledge about the disease in question, education for higher knowledge and awareness about thalassemia disease and prevention of this disease was recommended to reduce the incidence (Siam et al., 2010), which is consistent with the present study results. According to these results, it can be said that the results of the studies based on the awareness of thalassemia disease were consistent with some of these items. Therefore, we can conclude from this discussion that the villagers and the less educated people of the society are at greater risk, since their access to health education in the field of how to prevent, complications and deaths caused by thalassemia disease is lower. Therefore, with more activity, health messages will be provided to the villagers faster through mass media. In addition, gaining awareness through mass media and means of mass communication plays a significant role in increasing the awareness and attitude of communities and the public. Healthcare centers should also increase their activities in the field of information and education of diseases, especially hereditary diseases such as thalassemia.

Acknowledgments

The authors of this article would like to express their gratitude to the esteemed presidents of the University of Medical Sciences and non-medical sciences universities and the dear students who cooperated in this research. Our special gratitude also goes to the honorable professors Dr. Hossein Ali Adine and the student research committee of Iranshahr University of Medical Sciences who helped us in achieving this research goals. This research has approved by Committee of Ethics : Research ethics code: IR.IRSHUMS.REC.1398.002.

Limitations

This research had limitations such as time and ensuring the correctness and accuracy of the information, which were solved by talking to the students before participating in the research and conveying the level of importance of the given answers.

Competing interests

No

Reference:

- Alam A. (2006) Perception of female students of king saud university towards premarital screening. *Journal of family & community medicine*, 13(2):83–8.
- AK Al-Ali.(1996) Common G6PD variant from Saudi population and its prevalence. *Ann saudi Medical*, 16(6): 654–656.
- Alsaeed ES, Farhat GN, Assiri AM, Memish Z, Ahmed EM, Saeedi MY, et al. (2018) Distribution of hemoglobinopathy disorders in Saudi Arabia based on data from the premarital screening and genetic counseling program, 2011–2015. *Journal of Epidemiology and Global Health*, 7:S41–7.
- Cappellini M, Cohen A, Eleftheriou A, Piga A, Porter J, Taher A. (2014) *Guidelines for the Clinical Management of Thalassaemia*, p. 31-64.
- Chitsaz H. (1998) Minor thalassemia in prenatal referrals in Bandar Abbas. *Central Library of Hormozgan University of Medical Sciences*, [Persian]
- Experts from the Department of Family Health, Reproductive Health. Ministry of Health and Medical Education. (1997) *Department of Health and Family Medicine*,. First edition, spring. [Persian].
- Fathi Y, Tavakol M.(1996) Knowledge of Hamadan medical students about AIDS. *J Hamadan Univ Med Sci*, (4); 40-6. [Persian]
- Full translation of Shadpour.(1981) *world Health Organization. Health for everyone until 2000 Geneva*, [Persian].
- Ghatee MA, Zoladl M, Sangtarash MH, Avazpour AR, Azizi A, Prysaye Z, et al.(2016) Study of prevalence of Thalassemia and comparison of hematological indices in types of Thalassemia in marriage candidate patients in Kohgiluyeh & Boyer-Ahmad province in 1392. *Armaghane danesh*, 21(1):84–94.
- Habibzadeh F, Yadollahie M, Merat A, Haghshenas M.(1998) Thalassemia in iran , an overview. *Arch Iran Medical Sciences*.1(1): 27-33.

- Hajian kA.(2000) Attitude and Knowledge of cou-ple about Thalassemia at the stage of Marriage in Babol. *Scientific Journal of Guilan University of Medical Sciences*. 33(9): 103-110. [Persian]
- Hashemizadeh H, Noori R. (2013) Premarital Screening of Beta Thalassemia Minor in north-east of Iran. *Iranian journal of pediatric hematology and oncology*. 3(1):210–5.
- Jafari F, Nodeh sharifi A, Zaieari F. (2006) The effect of pre-marriage pro-gramme of thalassaemia inknowledge of couple in Gorgan. *Scientific Journal of Gorgan University of Medical Sciences*. 8(4): 68-72. [Persian]
- Jafari F, Node-Sharifi A, Zayeri F. (2007) Effectiveness of thalassemia prevention program on couples knowledge and carriers and marriage avoidance in Gorgan province-Iran. *Journal of Gorgan University of Medical Sciences*. 8(4):68–72.
- Khaleghinejad K, Abbaspour Z, Afshari P, Attari Y, Rasekh A. (2009) Educational Needs in Premarital Counseling:Viewpoints of Couples Referring to Health Care Centers in Mashhad. *Iranian Journal of Medical Education*. 8(2):247–53.
- Majde Teimoori Z, Sedghi Sabet M, Hasavari F, Rezapuor M. (2008) The study of bodily, mental, social, and economical problems of major thalassemia infected patient that referred to Somesara Imam Khomeini Hospital. *Journal Holistic Nursing Midwifery*. 18(1):31–7.
- Mahmoud L, Zandi KH. (2009) Determine the survival of patients with thalassemia major who referred to Shafa Hospital of Ahwaz in Khuzestan province. *Journal of Medicine*. 9 (1) :92-84. [Persian].
- Mirrashed F, Rahimiea F, Malaki H. (1997) Evaluation knowledge of grade fourth female students in high school about thalassaemia in Rasht. *Iranian Journal of thalassaemia Society*, 12: 47-49. [Persian]
- Miri-Moghaddam E, Fadaiy Raieny M, Izadie SH. (2011) Lack Of Knowledge Of Being Minor Thalassemic Is The Main Cause Of Major Thalassemia Incidence In Zahedan, The South-east Of Iran. *Hakim Health Sys Res*. 14(3): 174-179.
- Motamedi B, Soltan Ahmadi Z, Nikian Y.(2004) Effect of premarriage counseling on girls' knowledge. *KAUMS J (FEYZ)*. 8(1):101–7.
- Norsalehy I, Mjtbayy H, K. front b, Aurangzeb M. Reza, Live A. (2005) Evaluation of transfusion therapy in patients with thalassemia Vthal operation. *Journal Medical Faculty Guilan University of Medical Sciences*. 14 (56) : 66-61. [Persian].
- Naderi M, Sadeghi-Bojd S, Valeshabad AK, Jahantigh A, Alizadeh S, Dorgalaleh A, et al. (2013) A Prospective Study of Tubular Dysfunction in Pediatric Patients with Beta Thalassemia Major Receiving Deferasirox. *Pediatric Hematology and Oncology*. 30(8):748–654.
- Pakbaz Z, Treadwell M, Yamashita R, Quirolo K, Foote D, Quill L, et al. (2005) Quality of Life in Patients with Thalassemia Intermedia Compared to Thalassemia Major. *Annals of the New York Academy of Sciences*. 1054(1):457–61.
- Pakbaz Z, Korsdari Gh, Emary A. (1998) The results of the study of 8500 high school students in 19 educational districts of Tehran. *Iran Thalassemia Festival Magazine*. 12: 55-53. [Persian].
- Rafeezadeh A, Rahmati B, Karimi Mah L, Bolanraftar AA, Yunes Mohammad A, Alambin S. (2010) Study The Pre-University And High School Students' Level Of Knowledge On Thalassemia In Guilan. *Journal Of Holistic Nursing And Midwifery*. 20: P 34 - 9.
- Sadaghiani S, Farshidfar GR.(2001) Knowledge, attitude and practice of couples about to marry about thalassemia in Bandar Abbas. *Hormozgan Med Journal*.3:30-4. [Persian]

- Samavat A, Modell B. (2004) Iranian national thalassaemia screening programme. Primary care. *Bmj*. 329: 1134
- Sarpoushi Robat D, Sadeghi H, Hosseini SH, Sarpoushi Robat H, Rajabzadeh R, Moghaddam Karimi S. (2015) The impact of educational films and pamphlets on the knowledge and attitude of high schools students about thalassemia. *Scientific Journal of Iranian Blood Transfusion Organization*. 11(4): 352-361.
- Seyam SH, Assemi A.(2010) Study Of The Knowledge In Guilan university Students About Thalassemia.;8(3):150–5.
- Siam S, Asemi A.(2010) The degree of awareness of students in Guilan University about thalassemia. *Urmia Faculty of Nursing Midwifery*. 8(3): 150-5
- Toosi A.(2006) A report of Iranian children and young adults afflicted with beta thalassemia major. *Iranian Society of Thalassemia*.11:24-6.
- Zahad L, Bou-Dames J.(1977) Acceptance of first-Trimester prenatal diagnosis for the heamoglobinopathies in lebanon. *Prenat Diagn*. 17(5): 423-8.
- Zeynaliyan M, samawat A.(2009) detection B Thalassemia disease control and prevention program of Thalssemia major in the city affiliated to Isfahan university of medical sciences. *Isfahan university of medical sciences journal*. 6(4): 238-247.[Persian].