# Study of Health Literacy and its related factors among Students of Torbat Heydarieh of Medical Sciences in 2019

**Fatemeh Mahdizadeh**
Health Sciences Research Center, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran.
Student Research Committee, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran

**Faezeh Mahdizadeh**
Department of Public Health, School of Health, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran.

**Maryam Tatari**
Student Research Committee, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran

**Seyed Mohammad Eshaghzadeh namghi**
Student Research Committee, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran

**Mostafa Sheykhotayefeh**
Department of Health Information Technology, School of Allied Medical Sciences, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran. .(Corresponding author)
Email:heykhotayefeh@thums.ac.ir

**Received: 2019-05-13**
**Accepted: 2019-05-29**
DOI: 10.22038/jhl 019.40673.1061

## ABSTRACT

**Background and Objective:** Health literacy represents cognitive and social skills that determine the motivation and ability of individuals to acquire, access and understand the methods of using the information to maintain and improve their health. Regarding the effect of medical education students' health literacy on improving health literacy and community health promotion, this study aimed to determine the level of health literacy and its related factors in Torbat Heydarieh medical students in 2019.

**Materials and Methods:** This cross-sectional study was conducted with a descriptive-analytic approach in 2019 among 201 students of Torbat-e-Heidarieh University of Medical Sciences who were selected by multi-stage sampling. Data were collected using a two-part questionnaire: demographic information and HELIA (Health Literacy for Iranian Adult). Then the data were analyzed using the SPSS software version 20, using descriptive statistics and multiple regression analysis.

**Results:** In this study, 201 students (87.1%) were girls. The mean age of students was 21.50 ± 1.3 years. In examining the levels of health literacy, 9.5% of the students had low health literacy and 35.8% had inadequate and 42.8% had adequate and 11.9% had high health literacy level. The results of multivariate linear regression show that there is only a statistically significant relationship between the mean score and the term of education with the health literacy scores ($p < 0.05$).

**Conclusion:** Considering a large number of students with inadequate and borderline health literacy, it is recommended that planners and policymakers increase the health literacy of medical students who promote the culture of health literacy in the community by providing a suitable educational environment and content. Also, using social media and new educational methods is recommended in this regard.

**Paper Type:** Research Article
**Keywords:** Health Literacy, Students, HELIA

▶ **Citation:** Mahdizadeh F, Mahdizadeh F, Tatari M, Eshaghzadeh namghi M, Sheykhotayefeh M. Study of Health Literacy and its related factors among Students of Torbat Heydarieh of Medical Sciences in 2019. *Journal of Health Literacy*. Summer 2019; 4(2):44-48.

## Introduction

Health literacy refers to an individual's ability to acquire, interpret and understand the basic information and health services necessary to make appropriate decisions (1). Health literacy includes: understanding prescribed medication guidelines, medical education brochures, consent forms, ability to benefit from the complex medical system, reading and listening ability, analyzing, decision making and ability to apply these skills in situations related to health which is not necessarily related to years of education or public reading ability (2).

The WHO has recently introduced health literacy as one of the greatest determinants of health in the 21st century. It has also advised countries around the world to create a community of all affected to monitor and coordinate strategic activities to promote health literacy in different communities (3) because studies have shown that lower health literacy leads to lower health rates. Increased patient stay, increased morbidity and increased use of emergency services and also less preventive care (4). They also have less ability to self-care and healthy lifestyle behaviors (5, 6). The rates of referral to a physician and the prevalence of chronic illness are higher, and in general, they can be very costly (7, 8).

Studies have shown that inadequate US health literacy rates are 25 percent and borderline health literacy rates are 20 percent (9). According to studies in Iran, the level of health literacy is not adequate (10). For example, in a study conducted by Tehrani et al. in five selected provinces of Iran, they concluded that 56.6% of people had poor health literacy (10). Also, a study by Azimi et al. showed that 44.8% of non-medical students and 26.4% of medical students had inadequate health literacy (11). Also, in a study conducted by Panahi et al. in dormitory students at Shahid Beheshti University of Medical Sciences, 36.8% had inadequate health literacy (12). In a study by Mohammadi Farah et al. among Hamadan students, 31.6% of students had inadequate health literacy which is not desirable given that medical students are as health promotion models (13).

The student population has grown significantly in recent years, so identifying the relevant factors that can influence students' compliance with healthy behaviors and reduce risky behaviors is important because recognizing these factors enables health planners and executives to move more effectively for promoting better health programs and optimal use of services (14-16). Medical students were selected as the target group due to their favorable age and appropriate pattern of healthy lifestyle education (11). This study aimed to determine the level of health literacy and its related factors among Torbat Heydariyeh medical students.

## Methods

This cross-sectional study was conducted with a descriptive-analytic approach in 2019 among 201 students of Torbat-e-Heidarieh University of Medical Sciences who were selected by multi-stage sampling. Bachelor and semester 2 undergraduate students were selected by random sampling according to gender and sex.

The data collection tool consisted of two parts: a) demographic information including age, gender, semester, total average, the field of study; and (b) the main items of the HELLA: Health Literacy For Iranian Adults Questionnaire for 18-65 years old urban population. This standard questionnaire has 33 main items and measures people's ability in various aspects of health literacy including reading (4 items), access (6 items), understanding (7 items), assessment (4 items) and decision making and using health information (12 items). The questionnaire is a 5-point Likert scale. The way to score in this tool is to first obtain the raw

score of each individual in each domain from the sum of the algebraic scores. The raw score difference formula is then used to convert this score to zero to 100. Finally, to calculate the total score, the scores of all the dimensions (based on the zero to 100 range) are summed on the number of dimensions (based on the zero to 100 range) and divided by the number of dimensions (5 numbers). Scores of 0 to 50 are considered as low health literacy, 50/1 to 66 as inadequate health literacy, 66/1 to 84 as adequate health literacy and scores of 84/1 to 100 are regarded as high health literacy. Montazeri et al. have designed and psychometrically evaluated this tool and this questionnaire has acceptable validity and reliability (17). This questionnaire has benefits such as covering different aspects of health literacy separately and using simple and general language statements. The reliability of the questionnaire was confirmed by Cronbach's alpha coefficient of 0.78 in this study.

After receiving an ethical code (IR.THUMS.REC.1398.005) and permission from the University Research Council, students were given explanations about the purpose of their study and their answers confidential. After receiving verbal and informed consent, a standard adult health literacy questionnaire was completed. Also, the persons who did not participate in the study were excluded and others were replaced. Descriptive statistics (mean and standard deviation) and inferential statistics (multivariate linear regression) were used for data analysis by SPSS software version 20 ($p < 0.05$).

## Results

Of the 201 participants, 175 (87.1%) were girls and the rest were boys. Mean and standard deviation age were 21.52 ± 1.30 and 17.11 ± 0.99, respectively. The mean and standard deviation of the students' overall health literacy score was 67.97 ± 12.34. In comparing the dimensions of students' health literacy, the mean and standard deviation of health literacy score was 71.08 ± 16.43 and the highest score was 52.19 ± 12.97 in decision making and behavior respectively (Table 1). 19 (9.5%) students had low health literacy, 72 (35.8%) had inadequate level, 86 (42.8%) had adequate and 24 (11.9%) had high health literacy.

In examining the relationship between health literacy and demographic variables based on multivariate linear regression test, there was only a significant relationship between average and semester with health literacy score ($p < 0.05$). By increasing each score to a student total average, 3 scores are added to their health literacy. At different levels of the semesters, as the semester increases, students' health literacy scores increase (Table 2).

**Table 1. Mean and standard deviation of health literacy variable**

| Variables | Standard deviation ± mean |
|---|---|
| Reading | 24.65±70.16 |
| Access | 59.96±69.14 |
| Understanding | 4.67±70.13 |
| Assessment | 8.43±71.16 |
| Decision Making and Behavior | 19.97±52.12 |
| Total Health Literacy Score | 97.34±67.12 |

**Table 2. Relationship between the mean score of total health literacy and demographic variables of study participants based on linear regression test**

| Variable | Groups | Regression coefficients | The standard deviation | Significance level |
|---|---|---|---|---|
| Gender | Male | 4.38 | 2.27 | 0.054 |
| | Female | 0a | . | 0.054 |
| Age | | -.847 | .7949 | 0.01 |
| Average | | 2.766 | .8434 | 0.287 |

| | | | | |
|---|---|---|---|---|
| Semester | 2 | -29.074 | 4.6298 | 0.000 |
| | 3 | -21.724 | 7.1021 | 0.002 |
| | 4 | -15.542 | 3.9351 | 0.000 |
| | 5 | -10.673 | 6.6982 | 0.11 |
| | 6 | -10.778 | 3.6006 | 0.003 |
| | 7 | -9.736 | 6.6876 | 0.287 |
| | 8 | 0a | . | 0.145 |
| Major | HIT | 12.635 | 7.1969 | 0.079 |
| | Nursing | 2.827 | 3.0031 | 0.347 |
| | Operating Room | 7.215 | 3.1192 | 0.021 |
| | Health | 5.685 | 6.9766 | 0.415 |
| | Anesthe-sia | 5.266 | 7.2876 | 0.470 |
| | Midwifery | 5.532 | 7.4972 | 0.461 |
| | labora-tory | 0a | . | |

## Discussion

The purpose of this study was to determine the level of health literacy and its related factors in Torbat Heydariyeh medical students in 2019. The present study showed that 46.6% had an adequate level of health that was consistent with the study of Panahi et al. (12) Ziapoor et al. (18) and Mohammadi Farah et al. but inconsistent with Azimi et al. (11) Zhang et al. (19) and Mahmoudi et al. (20) that can be due to health and illness courses.

The results showed that there is a significant relationship between students' age and health literacy. As health literacy increases with age, this is in line with the findings of Rezai et al. (21), Mohammadi Farah et al. (13), Feng et al. (22) and Sun et al. (23) that could be because of their greater experience.

There was also a poor relationship between the gender of students and health literacy, with higher health literacy among female students which was consistent with most similar studies in medical universities in Iran (12, 13 and 24). The reasons for this difference include greater adherence to health and diet and medical advice by women, as well as greater accuracy on various food and drug labels.

There was also a significant relationship between the total average and health literacy. People with a higher total average had better health literacy which could be attributed to the relevance of medical science units and courses to health so that the better their students learned, the better their level of health. In comparing the dimensions of health literacy, students' health literacy score in assessment dimension is the highest score and the health literacy score in decision making is the lowest score. This may be because students can evaluate their health and determine good or bad, but have not yet made a decision on health behaviors.

Limitations of this study include the way to complete a self-report questionnaire for students which may not provide the research team with accurate information. Also not considering other variables that may affect students 'health, such as economic status, parents' occupation, and social and cultural conditions, etc., which are suggested to be investigated in future studies.

Conclusion

Although about half of Torbat Heydariyeh medical students had adequate health literacy, one-third of them had low and inadequate health literacy level. The variables of age and average were directly related to the level of health literacy. As students are health promoters and models of health in the community, more attention should be paid to educating these individuals. It is also recommended to use social media and new educational methods in this regard.

**Competing interests:** The authors declare that they have no competing interests.

**Funding:** No financial support was received for this study.

## Acknowledgement

This article is the result of a research project approved by Torbat Heydariyeh University of Medical Sciences. The authors would like to express their gratitude for the material and spiritual support of the Vice-Chancellor for Education and Research at Torbat Heydariyeh University of Medical Sciences, as well as the students who assisted in completing our questionnaire.

## References

1. Tehrani H, Rahmani M, Jafari A. Health literacy and Its relationship with general health of women referring to health care centers. Journal of Health Literacy. 2018;3(3):191-8.
2. Jafari A, Peyman N. Application of theories/models of health education and promotion in Health Literacy research: a systematic review. Journal of Health Literacy. 2018;3(2):124-36.
3. Marmot M, Friel S, Bell R, Houweling TA, Taylor S, Health CoSDo. Closing the gap in a generation: health equity through action on the social determinants of health. The lancet. 2008;372(9650):1661-9.
4. Bailey SC, McCormack LA, Rush SR, Paasche-Orlow MK. The progress and promise of health literacy research. Journal of health communication. 2013;18(sup1):5-8.
5. Schillinger D, Grumbach K, Piette J, Wang F, Osmond D, Daher C, et al. Association of health literacy with diabetes outcomes. Jama. 2002;288(4):475-82.
6. von Wagner C, Knight K, Steptoe A, Wardle J. Functional health literacy and health-promoting behaviour in a national sample of British adults. Journal of Epidemiology & Community Health. 2007;61(12):1086-90.
7. Wolf MS, Gazmararian JA, Baker DW. Health literacy and functional health status among older adults. Archives of internal medicine. 2005;165(17):1946-52.
8. Baker DW, Gazmararian JA, Williams MV, Scott T, Parker RM, Green D, et al. Functional health literacy and the risk of hospital admission among Medicare managed care enrollees. American journal of public health. 2002;92(8):1278-83.
9. Paasche-Orlow MK, Parker RM, Gazmararian JA, Nielsen-Bohlman LT, Rudd RR. The prevalence of limited health literacy. Journal of general internal medicine. 2005;20(2):175-84.
10. Tehrani Banihashemi S-A, Amirkhani MA, Haghdoost AA, Alavian S-M, Asgharifard H, Baradaran H, et al. Health Literacy and the Influencing Factors: A Study in Five Provinces of Iran. Strides in Development of Medical Education. 2007;4(1):1-9. eng.
11. Ramezankhani A, Ghafari M, Rakhshani F, Ghanbari S, Azimi S. Comparison of health literacy between medical and non-medical students in Shahid Beheshti Universities in the academic year 92-93. Pajoohandeh Journal. 2015;20(2):78-85.
12. Panahi R, Ramezankhani A, Tavousi M, Osmani F, Ghazanfari E, Niknami S. Evaluation of Health Literacy and its influencing factors on dormitory students of Shahid Beheshti University of Medical Sciences in Tehran. J Educ Community Health. 2016;3(3):30-6.
13. Mohammadi Farah S, Asr S, Hasan M, Kavivani Manesh A, Barati M, Afshari M, et al. Health Literacy Level and its Related Factors among College Students of Hamadan University of Medical Sciences, Hamadan, Iran. J Educ Community Health. 2017;4(2):11-7.
14. Smith DR. A systematic review of tobacco smoking among nursing students. Nurse Education in Practice. 2007;7(5):293-302.
15. Keller S, Maddock JE, Hannöver W, Thyrian JR, Basler H-D. Multiple health risk behaviors in German first year university students. Preventive medicine. 2008;46(3):189-95.
16. Von Ah D, Ebert S, Ngamvitroj A, Park N, Kang DH. Predictors of health behaviours in college students. Journal of advanced nursing. 2004;48(5):463-74.
17. Montazeri A, Tavousi M, Rakhshani F, Azin SA, Jahangiri K, Ebadi M, et al. Health Literacy for Iranian Adults (HELIA): development and psychometric properties. Payesh. 2014;13(5):589-599.
18. Ziapoor A, Kianipoor N. Predicting health literacy of students in Kermanshah University of Medical Sciences in 2016: The role of demographic variables. Journal of Health Literacy. 2016;1(3):182-90.
19. Zhang Q, Cui G, editors. Investigation and analysis of Xi'an college students' health literacy. Human Health and Biomedical Engineering (HHBE), 2011 International Conference on; 2011: IEEE.
20. Mahmoudi H, Taheri A. Relation between information literacy and health literacy of students in Ferdowsi University of Mashhad. HII. 2015;2(2):31-41.
21. Rahmanian M, Targhi MG. A Survey on Health Literacy of Referred Diabetic Patients to Yazd Diabetes Research Center. Toloo-e-behdasht. 2016;15(3):176-86.
22. Fang MC, Machtinger EL, Wang F, Schillinger D. Health literacy and anticoagulation-related outcomes among patients taking warfarin. Journal of general internal medicine. 2006;21(8):841-6.
23. Sun X, Shi Y, Zeng Q, Wang Y, Du W, Wei N, et al. Determinants of health literacy and health behavior regarding infectious respiratory diseases: a pathway model. BMC public health. 2013;13(1):261.
24. SharifMoghadam H, Shakiba E, Salami M. Comparison of Health Literacy of Medical and Dentistry Students of Rafsanjan University of Medical Sciences in 2016. Journal of Health Literacy. 2017;2(2):73-80.