

## Investigating Health Literacy of Teachers in Asaluyeh

Ali Asadian<sup>a</sup>, Ahmad Sotoudeh<sup>b\*</sup>, Mojgan Zarei Venovel<sup>c</sup>, Roghaieh Moosai<sup>d</sup>

<sup>a</sup> Department of Health Education & Promotion, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran.

<sup>b</sup> Department of Health Education & Promotion, School of Public Health, Bushehr University of Medical Sciences, Bushehr, Iran.

<sup>c</sup> Department Medical Library and Information, Lorestan University of Medical Sciences, Khorramabad, Iran.

<sup>d</sup> Department Midwifery, School of Nursing and Midwifery, Bushehr University of Medical Sciences, Bushehr, Iran.

### ARTICLE INFO

#### ORIGINAL ARTICLE

#### Article History:

Received: 12 May 2018

Revised: 4 Oct 2018

Accepted: 27 Oct 2018

#### \*Corresponding Author:

Ahmad Sotoudeh

#### Email:

sotoudeh\_ahmad@yahoo.com

Tel: +98 9178749910

#### Citation:

Asadian A, Sotoudeh A, Zarei Venovel M, Moosai R. Investigating Health Literacy of Teachers in Asaluyeh. Social Behavior Research & Health (SBRH). 2018; 2(2): 228-234.

### ABSTRACT

**Background:** Health literacy is defined as the ability of individuals to read, understand, and act on health-related concepts in order to make healthy decisions. This study was conducted to determine the level of health literacy of teachers in Asaluyeh city, Iran.

**Methods:** This descriptive study was conducted on 200 teachers who were selected using stratified random sampling method in Asaluyeh in the academic year 2015 - 2016. Health Literacy for Iranian Adults questionnaire (HELIA) was used to measure their health literacy. Data were analyzed by SPSS<sub>20</sub> and by using descriptive statistics, one way ANOVA, independent-samples T test, and Pearson correlation coefficient.

**Results:** The mean age of participants was 30.56 years (SD = 4.5), 59% of them were male (n = 118) and 41% were female (n = 82). Teachers' health literacy status was in moderate level for 9.6% of participants (n = 99) regarding access to information, for 44.6% of participants (n = 89) regarding information comprehension in, for 68.4% of participants (n = 136) regarding judgment and assessment, and for 68.4% of participants (n = 136) regarding information use. We found that health literacy had a significant relationship with gender and age.

**Conclusion:** In this study, teachers' health literacy was at moderate level. So, it is necessary to provide effective internet resources and useful sites. We should also conduct health education programs in media such as radio and television to improve health literacy in teachers, especially in more experienced teachers.

**Keywords:** Health Literacy, Teachers, Asaluyeh city



## Introduction

Health literacy is a relatively new concept in health promotion that addresses a wide range of outcomes related to communication activities and healthy lifestyle education.<sup>1</sup> According to Medical Institute and the National Library of Medicine, health literacy is the capacity to acquire, process, and understand health information to make decisions about an appropriate health condition, which is a multifaceted concept.<sup>2</sup> Health literacy includes a set of reading, listening, analysis, and decision-making skills as well as the ability to use these skills in health-related situations.<sup>3</sup> Health literacy is a skill to deal with the risk factors in everyday life, which is considered as an important life skill.<sup>4</sup> Accordingly, WHO introduced health literacy as one of the major determinants of health. All countries are recommended to monitor and coordinate their strategic activities to promote health literacy among their people.<sup>5</sup>

In the study of Javadzadeh et al. (2013) in Isfahan, 46.5% of individuals had adequate health literacy, 38% had moderate health literacy, and 15.5% had inadequate health literacy.<sup>6</sup> According to the study of Pirzadeh in Isfahan 85.4% of teachers had a favorable, 13.5% had semi-favorable, and 1% had unfavorable lifestyles. Moreover, 76% of teachers had physical activity, 29.2% of them were smokers or exposed to smoke, and 21.9% were anxious.<sup>7</sup> In the study of Ghaffari Nejad and Pouya (2002) in Kerman, the lowest level of knowledge about health promotion behaviors was related to low salt intake 23.5% and female teachers had the lowest level of knowledge about monthly breast self-examination 8.9%.<sup>8</sup> According to a national survey on adult American literacy, about a quarter of adults had very limited health literacy skills.<sup>9</sup>

On the other hand, low health literacy may prevent people from accessing the primary care for their health problems, decrease their health, and increase the use of unnecessary services such as emergency care and admission to hospital.<sup>10</sup> Currently, the relationship between health literacy and health is well recognized and it is considered

not only as an individual attribute, but also as a key determinant of disease prevention and community-based health promotion.<sup>11-12</sup> In order to improve health literacy, initially we should identify its status in different population groups and determine people with inadequate health literacy. One of the ways to prevent diseases is to conduct educational programs in the target community.

Educators are the human resources who influence the development and evolution of society and the main model for students. So, due to the teachers' low information on the health literacy, this research was conducted to determine the health literacy of teachers in the city of Asaluyeh, Iran.

## Methods

This descriptive study was conducted to determine the level of health literacy of teachers in Asaluyeh in the academic year of 2015 - 2016. Initially, the research objectives were explained for the participants and they were ensured about the confidentiality of the information. We also ensured them to report the final results to the Education Department of Asaluyeh. Participants were selected by stratified random sampling method from all educational levels (elementary, primary high school, and secondary high school). According to the Morgan table and total population of 418 teachers in Asaluyeh, the sample size was calculated as 200. The research population was divided into elementary school, primary high school, and secondary high school. Based on the available information, an average of eight teachers was working in each school. Therefore, 88 teachers of the elementary school, 64 teachers of primary high school, and 48 teachers of secondary high school were enrolled in the study. The questionnaires were distributed, completed, and collected after obtaining the necessary permission from the Research and Technology Department of Bushehr University of Medical Sciences as well as Education

Department of Asaluyeh. The inclusion criteria included having at least one year of job experience, no history of cardiovascular diseases, diabetes, and hypertension, as well as willingness to participate in the study; incomplete questionnaires were excluded. The data gathering tool was a two-part questionnaire. The first part included demographic information such as age, gender, marital status, educational level, residence status, job experience, smoking status, and access to health information. The second part of the questionnaire was the Health Literacy for Iranian Adults (HELIA). This questionnaire contains 71 items that measures four dimensions of health literacy, including access to health information, information comprehension, assessment and judgment, as well as use of information. The total score regarding the dimensions of health literacy were classified into poor, moderate, and good level. Access to health information had 11 questions in which scores of 0 - 18 showed poor access, 18 - 36 represented moderate access, and scores higher than 36 indicated good access. Information comprehension consisted of 19 questions: scores 0 - 25 indicated poor comprehension, 25 - 50 indicated moderate comprehension, and scores above 50 indicated good comprehension. Assessment and judgment included eight items, scores 0 - 11 represented poor assessment, scores 12 - 22 showed moderate assessment, and scores 23 - 32 indicated good assessment. The use of information included 24 questions: the poor use of information was rated 0 - 11, moderate use had a score in the range of 33 - 64; good use of information was rated with scores higher than 64.<sup>13</sup> The scoring criteria were based on Likert scale. The validity and reliability of this questionnaire was approved by Education and Promotion Office of Ministry of Health. To determine the reliability of the tool, a pilot study was conducted on 20 teachers. After calculating the reliability of the scale, Cronbach's alpha coefficient was calculated as 0.79. In order to observe the ethical issues, the purpose of the study was explained to the participants at the beginning, the participation in the study was completely

voluntarily, and also the confidentiality of the information was observed. We used the SPSS<sub>20</sub> and run descriptive statistics, t-test, T-student, ANOVA, and Pearson correlation coefficient to analyze the data. The significance level for all statistical tests was considered to be less than 5percent.

## Results

The results of this study showed that the age range of participants in the study was 24 - 46 years old with an average of 30.56 (SD = 4.58). We found that 59% of the participants (n = 118) were male and 41% were female (n = 82). The demographic characteristics of the participants are shown in Table 1.

Regarding smoking, 94.5% of participants (n = 189) stated that they did not use tobacco (cigarettes or hookahs) .considering the most commonly used sources of health information in the past month, 44.5% of participants used the Internet (n = 89), 37% used radio and television (n = 74%), and 14% physicians and health experts' suggestions (n = 14), respectively.

Most of participants were at moderate level regarding the four dimensions of health literacy. Generally, among the health literacy dimensions, the highest scores were related to the dimension of information use, whereas, the lowest scores were related to the assessment and judgment dimension. The average literacy scores of the participants in terms of the four dimensions of health literacy are shown in Table 2.

Independent T-test showed that the mean (SD) scores of access to health information were 21.26 (0.34) and 20.56 (0.75) in men and women, respectively. The difference between the two genders was statistically significant (P-value = 0.004).

The mean scores of men in terms of health information comprehension as well as assessment and judgment were higher than women, but the difference was not significant. Regarding the use of information, the mean (SD) scores in men 59.2 (0.64) was higher than women 53.3 (0.78) and



this difference was statistically significant ( $P$ -value = 0.007). In the age group of 24 - 28 years, the mean (SD) of access to health information was more appropriate than other age groups 27.21 (0.21). However, the lowest mean (SD) was related to the age group of 39 - 43, 21.56 (0.48); the access to health information difference was not significant. Regarding the health information comprehension, the highest score was related to the age group of 24 - 24 years

with the mean score of 43.8 (SD = 0.29) and the lowest score was related to the age group of 39-43 years with the mean score of 28.3 (SD = 0.68). This difference in mean scores between the age groups was statistically significant ( $P$ -value = 0.003). Regarding the use of health information, the lowest score was related to the age group of 39 - 43 years with a mean score of 46.3 (SD = 0.71), which was not statistically significant.

**Table 1.** Demographic characteristics of participants

	Variable	Number (%)
Gender	Male	118 (59)
	Female	82 (41)
Age	24 - 28	85 (5.42)
	29 -33	65 (5.32)
	34 - 38	34 (17)
	39 - 43	13 (5.6)
	≥44	3 (5.1)
Marital Statuses	Single	64 (32)
	Married	133 (5.66)
Educational Level	Diploma	4 (2)
	BSc	184 (92)
	MSc	12 (6)
Residence Status	Native of Asaluyeh city	69 (5.34)
	Native of Bushehr	100 (50)
	Non-Native	30 (15)
Work Experience	1 - 6	60 (30)
	7 - 12	112 (56)
	13 - 18	20 (10)
	≥19	8(4)

**Table 2.** The average scores of participants' health literacy according to the four dimensions of health literacy

Health Literacy Dimensions	Total Mean Scores (SD)	Poor Dimension Mean (SD)	Moderate Dimension Mean (SD)	Good Dimension Mean (SD)
Information access	29.3 (0.88)	6.4 (0.62)	31.7 (0.39)	49.7(0.75)
Information comprehension	32.2 (0.62)	11.2 (0.38)	38.4 (0.26)	68.4(17.2)
Assessment and judgment	19.1 (0.25)	7.8 (0/25)	28.7 (0.49)	21.3(0.12)
Information use	57.2 (0.52)	9.8 (0.21)	45.9 (0.44)	67.2 (0.68)

## Discussion

The study showed that teachers had moderate level of health literacy; they were in moderate level after investigating all four dimensions of

health literacy, including access to information, information comprehension, information use, as well as assessment and judgment. In a study by Fouladi et al. (2017) on health literacy of the

middle aged people in Ardabil, participants' access to information was at poor level. In terms of information comprehension, information use, as well as assessment and judgment, the participants were in moderate level.<sup>14</sup> Mozafari and Borji (2017) reported moderate level of health literacy among parents with preschool children.<sup>15</sup> Furthermore, Izadirad H, Zareban (2015) reported low level of health literacy in 68% of people in the age range of 15 - 65 years in Baluchistan urban areas.<sup>16</sup> The results of a study conducted by Afshari et al. (2014) on adults in Tuyserkan showed that the participants were at poor level of information comprehension. However, in terms of access to information, assessment and judgment, as well as use of information they were at moderate levels.<sup>17</sup> According to the study by Javadzadeh et al. (2013) on adults in Isfahan, 53.5% of the participants had inadequate health literacy.<sup>6</sup> Lee et al. (2010) reported a low and moderate level of health literacy among 21 percent of Taiwanese adults.<sup>18</sup> Von Wagner et al.'s (2007) study on adults in England showed a moderate level of health literacy in 11.4% of the participants.<sup>19</sup> Study of Ozdemir et al. (2010) on adults in Turkey indicated that 71.9% of the population had inadequate health literacy.<sup>20</sup> In this study use of information obtained higher score than other dimensions of health literacy. It seems that the difference between the results of the present research and other studies is due to differences in the studied population as well as the teaching role of teachers in various regions. Therefore, adequate level of health literacy is essential not only for all individuals who are in health cycle, but also for teachers because they play a key role in transfer of knowledge, as well as establishment and maintenance of health behaviors in children and adolescents. In other words, health literacy is a key to prevent diseases. Interdisciplinary cooperation between different ministries and organizations that are directly and indirectly involved in maintaining and protecting the health is very effective to increase the health

literacy. It seems that the role of media is very important in this regard.

We also found that the most important sources of collecting health information for teachers were respectively internet 44.5%, radio and television 37%, and doctors and health care staffs 14%. Fouladi et al. (2017) reported that the most important sources for collecting health information were health personnel as well as radio and television, respectively.<sup>14</sup> The study of Tehrani Banihashemi et al. (2007) also showed that participants received their health information through radio and television 42% as well as doctors and health care staffs 40.6%, respectively.<sup>21</sup> As it was mentioned, the most important source of health information in this study was Internet. Therefore, new technologies can play an important role in transferring health concepts as well as training to maintain and improve the health knowledge of teachers. The findings of this study showed a significant relationship between dimensions of health literacy and gender; the mean scores of information access and information use in male teachers was higher than the female teachers. This finding was consistent with the results of several other studies;<sup>6, 14, 21, 22</sup> whereas, Tehrani Banihashemi et al. (2007) and Davis et al. (2006) reported higher levels of health literacy in women.<sup>21, 23</sup> This significant difference in information access and information use was probably due to the greater involvement of male teachers in research.

In this study, we found that dimensions of information access and information comprehension had a negative and significant relationship with age. The age group of 28 - 40 had the highest scores in terms of information access and health information comprehension, which was consistent with the results of the Lee et al. (2010), Tehrani Banihashemi (2007), Mollakhalili et al. (2014).<sup>21, 24, 18</sup> Sahrayi et al. (2017) and Ghanbari et al. (2012) also reported that with increase of age in individuals over 30 years, the insufficient health literacy increased.<sup>25, 26</sup> These findings showed that young people are more likely to use





communication tools, including the Internet and digital media. Therefore, health-related applications and software should be provided scientifically and delivered to teachers.

One of the limitations of the study was that questionnaires were completed using a self-report method. Furthermore, we could not find any research that directly addressed this subject using this research tool among the teachers.

### Conclusion

Schools play an important role in maintaining and improving the health literacy of students; health literacy of teachers is also very important in this regard. Lack of research on health literacy among teachers was one of the limitations of this study. In this study, teachers' health literacy was at the moderate level and a high percentage of teachers used information sources such as the Internet, radio, and television. In order to enhance the health literacy of teachers, effective Internet resources and health-related sites should be provided. Health education programs should be conducted in media such as radio and television to improve the health literacy of teachers especially those who are more experienced. Therefore, we suggest further studies on larger sample sizes for more accurate results.

### Conflicts of Interest

The authors did not declare any conflict of interests.

### Acknowledgments

This project was approved by Bushehr University of Medical Sciences with the code number of 4112 and the ethics code of IR.Bpums.Rec.1394.160 in 2015. Authors are sincerely grateful for the support of Research and Technology Department of Bushehr University of Medical Sciences, the teachers who have completed the questionnaire, as well as the Education Department of the city of Asaluyeh. We would also like to show our gratitude to all those who helped us to conduct this research.

### Authors' Contribution

Conceptualization, A.S. and A.A.; Methodology, A.S.; Investigation, M.Z.V. and R.M.; Formal analysis, A.S.; Data Curation, M.Z.V and R.M.; Writing – Original Draft, A.A; Writing – Review & Editing, A.S.

All authors read and approved the final manuscript and are responsible about any question related to article.

### References

1. Manganello JA, Sojka CJ. An exploratory study of health literacy and African American adolescents. *Comprehensive Child and Adolescent Nursing*. 2016;39(3):221-239.
2. Wolf MS, Feinglass J, Thompson J, Baker DW. In search of 'low health literacy': Threshold vs. gradient effect of literacy on health status and mortality. *Social Science & Medicine*. 2010;70(9):1335-1341.
3. Manganello J, Gerstner G, Pergolino K, Graham Y, Falisi A, Strogatz D. The relationship of health literacy with use of digital technology for health information: implications for public health practice. *Journal of Public Health Management and Practice*. 2017;23(4):380-387.
4. Jovic Vranes A, Bjegovic Mikanovic V, Marinkovic J, Kocev N. Health literacy in a population of primary health-care patients in Belgrade, Serbia. *International Journal of Public Health*. 2011;56(2):201-207.
5. Marmot M, Friel S, Bell R, Houweling TA, Taylor S. Closing the gap in a generation: Health equity through action on the social determinants of health. *The Lancet*. 2008;372(9650):1661-1669.
6. Javadzadeh SH, Sharifirad GH, Reisi M. Health literacy among adults in Isfahan, Iran. *Health System Research*. 2013;9(5): 540-549. [Persian]
7. Pirzad A, Sharifirad G. A survey of healthy life styles in teachers in district 4 of Isfahan, Iran. *Health System Research*. 2012;7(6):1075-1081. [Persian]
8. Ghaffari Nejad A, Pouya F. Self promoting behaviors among teachers in Kerman. *Journal of Guilan University of Medical Sciences*. 2002;11(43):1-9. [Persian]

9. Lee SY, Arozullah AM, Cho YI. Health literacy, social support, and health: A research agenda. *Social Science & Medicine*. 2004;58(7):1309-21.
10. Cho YI, Lee SY, Arozullah AM, Crittenden KS. Effects of health literacy on health status and health service utilization amongst the elderly. *Social Science & Medicine*. 2008;66(8):1809-1816.
11. Javadzade SH, Sharifirad G, Radjati F, Mostafavi F, Reisi M, Hasanzade A. Relationship between health literacy, health status, and healthy behaviors among older adults in Isfahan, Iran. *Journal of Education and Health Promotion*. 2012;1:31. [Persian]
12. Nutbeam D. The evolving concept of health literacy. *Social Science & Medicine*. 200;67(12):2072-8.
13. Tavousi M, Haeri Mehrizi AA, Rafiee Far Sh, et al. Health Literacy in Iran: Finding from National Study. *Payesh*. 2016;15(1):95-102. [Persian]
14. Fouladi N, Hazrati S, Shabani M, Nejaddadgar N. Investigating Middle-aged Health Literacy in Ardabil. *Journal of Health Literacy*. 2017; 2(1):39-44. [Persian]
15. Mozafari M, Borji M. Assessing the Health Literacy Level of Parents with School Children in Ilam, 2015. *Journal of Nursing Education* 2017;5(6):53-61. [Persian]
16. Izadirad H, Zareban I. The relationship of health literacy with health status, preventive behaviors and health services utilization in Baluchistan, Iran. *Journal of Education and Community Health*. 2015;2(3):43-50. [Persian]
17. Afshari M, Khazaei S, Bahrami M, Merati H. Investigating adult health literacy in Tuyserkan city. *Journal of Education and Community Health*. 2014; 1(2):48-55. [Persian]
18. Lee SY, Tsai TI, Tsai YW, Kuo KN. Health literacy, health status, and healthcare utilization of Taiwanese adults: results from a national survey. *BMC Public Health*. 2010; 10(1):614.
19. Von Wagner C, Knight K, Steptoe A, Wardle J. Functional health literacy and health-promoting behavior in a national sample of British adults. *Journal of Epidemiology and Community Health*. 2007;61(12):1086-1090.
20. Ozdemir H, Alper Z, Uncu Y, Bilgel N. Health literacy among adults: A study from Turkey. *Health Education Research*. 2010;25(3):464-477.
21. Tehrani Banihashemi SA, Amirkhani MA, Hagh-doost AA, et al. Health literacy and the affecting factors: A study in five provinces of Iran. *Strides in Development of Medical Education*. 2007;4(1):1-9. [Persian]
22. Kandula NR, Nsiah Kumi PA, Makoul G, et al. The relationship be-tween health literacy and knowledge improvement after a multimedia type 2 diabetes education program. *Patient Education and Counseling*. 2009;75(3):321-327.
23. Davis TC, Wolf MS, Arnold CL, et al. Development and validation of the Rapid Estimate of Adolescent Literacy in Medicine REALM-Teen): A tool to screen adolescents for below-grade reading in health care settings. *Pediatrics*. 2006;118(6):1707-1714.
24. Mollakhalili H, Papi A, Sharifirad Gh, Zare Farashbandi F, Hasanzadeh A. A survey on health literacy of inpatients educational hospitals of Isfahan University of Medical Sciences. *Health Information Management*. 2014; 11(4):464-473. [Persian]
25. Sahrayi M, Panahi R, Kazemi SS, Goli Rostami Z, Rezaei H, Jorvand R. The study of health literacy of adults in Karaj. *Journal of Health Literacy*. 2017;1(4):230-238. [Persian]
26. Ghanbari Sh, Majlesi F, Gafari M, Mahmoodi Majdabadi M. Evaluation of health literacy of pregnant women in urban health centers of Shahid Beheshti Medical University. *Daneshvar Medicine*. 2012;97(19):1-12. [Persian]