



Health Literacy Level of Adults Referring to Public Libraries Covered by the Institution of Public Libraries of the Country

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Abstract

Introduction: Health literacy is a personal and social capacity for accessing, understanding, evaluating information and health services and their optimal utilization for health promotion. Public libraries are one of the ways which make the information accessible to the public. Given the importance of public libraries in providing people with access to information such as health information, in this research, we investigated the health literacy level of people aged 18-60 years old who referred to libraries covered by the public libraries of Sanandaj city.

Methods: This study is a descriptive and applied survey. The research tool was an Iranian Health Literacy Questionnaire (IHLQ). According to the referrals to the libraries covered by the public libraries of Sanandaj city, the sample size was determined by clustering method to be 295 people. Questionnaires were completed in autumn and winter of 2016 by individuals aged 18-60 years old who referred to libraries covered by public libraries of Sanandaj. Data were analyzed through SPSS23.0 software, using One-way ANOVA and independent t-test. The final score of health literacy was calculated on a scale of 0 to 20, so that a score of less than 10 indicates “weak”, a score of 14-10 shows “moderate”, and those more than 14 indicates “sufficient” health literacy level.

Results: A significant relationship was found in the level of health literacy with age ($P=0.002$) and occupation ($P<0.001$), but there was no significant relationship between health literacy level and education level and gender. The mean of health literacy in the subcomponent of “knowledge” with the score of 14.91 ± 1.05 was highest and “getting health information” with a score of 7.26 ± 0.31 and after that “reading” with a score of 8.48 ± 0.52 were the lowest values. The findings of the study showed that 25.8% (76 people) had sufficient health literacy, 49.5% (146) had moderate health literacy, and 24.7% (73) had weak health literacy. Therefore, the level of health literacy among people aged 18-60 years old in the libraries covered by the public libraries of the city of Sanandaj was “moderate.”

Conclusion: The level of health literacy among people aged 18-60 years old in the libraries covered by the public libraries of the city of Sanandaj was “moderate”. Regarding the average health literacy level of the studied community, it seems that the provision of health-related content by the public libraries institution and the health care centers is effective in improving the health literacy level of the general population.

Keywords: Health literacy, Public libraries institute, Sanandaj, Iranian Health literacy Questionnaire

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Introduction

Health literacy is a broad concept in promoting health and has been used in health literature since the 1970s (1-4). The World Health Organization (WHO) has identified health literacy as one of the greatest determinants of health (3). From the perspective of Nielsen-Bohlman, Panzer and Kindig, a set of capacities and skills for accessing,

understanding, evaluating of information and health services, and its optimal use for promoting health, is called health literacy (3). The World Health Organization recognizes health literacy as cognitive and social skills that determine the motivation and ability of individuals to access information, understand and use them to make the right decision to maintain and improve individual health (5, 6).

Health literacy is an important indicator of health care outcomes and expenditures, and the healthcare system needs a high level of health literacy (7, 8). From Doodson et al. and Boolman et al.'s point of view, the term health literacy is used to describe the ability to interact with health information and services, which refers to the capacity of community members to obtain, interpret and understand information and health services for proper health decision making (3, 9). Health literacy means physical health, including the knowledge of using a healthy diet, practicing self-care, having first aid skills, and knowing how to search for health information in a collection of sources in a library and web space (10, 11).

Health literacy is a subset of literacy skills. The concept of "health literacy" refers to individual and communicative factors, and the level and extent of obtaining the ability to obtain, process, and understanding the basic health information and services needed for appropriate health decision-making by individuals (3, 4, 12-15). General literacy skills include the ability of a person to read, write, understand a written language, speak, understand the spoken language (oral literacy), and understand and use numbers in everyday life (calculating) (3, 16). Given the importance of health literacy for the health of the body and soul (9), health literacy is introduced as a global and universal issue and debate in the 21st century (16). This issue is so important that the WHO, in its report, introduced health literacy as one of the greatest determinants of health, and recommended that all the countries all over the world should form a forum composed of all affected individuals to monitor and coordinate strategic activities to promote literacy levels in different societies (16, 17).

In today's growing societies, people are increasingly exposed to health information and information pollution (6). It is difficult to deal with complex health systems for humans, even with sufficient health literacy skills (18); therefore, having health literacy is essential. If people have health information skills, they will have more health and welfare and enjoy life (6).

People with high health literacy have better collaboration with health centers and accept and execute health orders very well (19). In contrast, people with inadequate health literacy have less awareness about health, receive less preventive services, control chronic disease less than others, have poorer physical and mental health, pay less attention to written and spoken information provided by health professionals, and have less participation in medical decision making and poorer health status (2, 6, 20); the consequences

of low literacy are directly and indirectly manifested (19). Low health literacy leads to economic and social harm, and sometimes prevents people from engaging with the community and attaining their goals of life (5, 8, 21, 22). Inadequate health literacy is even observed in high-income and developed countries such as the United States (23). Obtaining an accurate and comprehensive insight from the skills and components of health literacy among the general public is important, and participation in promoting health literacy is likely to be effective in correcting social and economic inequalities (8); health literacy can be used to complete many fields of patient care to reach the community development, e.g. improving compliance to empowering individuals and communities (12). Because of the important role of health literacy in decision-making in health-related areas, the study of health literacy as one of the key issues and basic tools for improving the level of community's health and well-being and the quality of health services has attracted the policymakers' attention (21, 23, 24).

Regarding the importance of health literacy in raising the level of community health, the level of health literacy in different societies of Iran has been studied and the results of studies confirm the inadequate level of health literacy in these societies in Iran. In Khosravi and Ahmadzadeh's research (2016), the health literacy rate of patients referring to hospitals in Bushehr was reported at borderline and inadequate level (25). Mohseni et al. (2015) investigated the relationship between health literacy and physical health of the seniors in Kerman, and their low level of health literacy was acknowledged (26). Izdirad and Zareban (2015) investigated the relationship between health literacy and general health, preventive behaviors, and health services in the Balochistan region, and noted the low level of health literacy in the target group (27). In another study, Tavousi et al. (2015) investigated the health literacy of Iranian adults living in cities and concluded that about half of them had limited health literacy, and education and age had the greatest impact on their health literacy (24). Ghanbari et al. (2011) studied the health literacy of pregnant women under the coverage of Shahid Beheshti University of Medical Sciences health centers and found that they were not adequately educated (28). In the research of Tehrani Banihashemi et al. (2007), health literacy levels of five provinces of Tehran, Bushehr, Mazandaran, Kermanshah, and Qazvin were reported at a low level (29). One of the centers that, regardless of the importance of its target group, has been neglected in

health literacy studies, are public libraries. Therefore, considering the importance of the issue, the aim of the present study was to study the health literacy rate of adults aged 18-60 years old who referred to the public libraries of Sanandaj. Investigating and determining the level of health literacy among people referring to public libraries determine the existing conditions and suggestions for improving the level of health literacy. Certainly, the use of practical methods and solutions to increase and improve the level of health literacy of health seekers is considered as a long-term and beneficial investment in the field of health.

Methods

This descriptive-analytical research, with regard to the research objective, is an applied study that was carried out in the fall and winter of 2016 on individuals aged 18-60 years old who referred to libraries covered by the public libraries of Sanandaj. Inclusion criteria were reading and writing literacy, age 18 to 60 years old, and attendance at the libraries covered by the public libraries of Sanandaj; those without these characteristics were excluded from the study. The instrument used in this descriptive survey is the standard Iranian health literacy questionnaire (HELIA). It consists of 33 questions in 5 components, including "access"; "reading skills"; "understanding"; "assessment and decision making"; and "application of health information". Construct validity of the questionnaire was obtained through applying exploratory factor analysis, and Cronbach Alpha was applied to calculate the reliability, which was reported 0.89 % in Montazer et al.'s study. According to the number of referrals to the libraries covered by the public libraries of Sanandaj city, the sample size was determined by clustering method as 295 people and the questionnaires were distributed, completed and collected in the fall and winter of 2016 among individuals aged 18-60 years who referred to these libraries under the supervision of a health literacy expert (MSc in Library and Information Science) and analyzed by SPSS version 23.0. The final health literacy score was calculated based on a scale of 0 to 20. A score of less than 10 indicates a "weak" level, a score of 14-10 "moderate" and a high score of 14 "adequate" level of health literacy (in the confidence interval 0.95). One-way ANOVA was used to examine the relationship between the health literacy level and age, education level, health information source, and job. Independent t-test was used to assess the relationship between health literacy level and gender. The final health literacy score was calculated based on a scale of 0 to 20. A score of less than 10 indicates

a "weak" level, a score of 14-10 "moderate", and a high score of 14 indicates "adequate" level of health literacy.

Results

Most of the participants in the study were female (60.14%). The mean age of the participants in the study was 25.89 ± 7.99 years; the highest age was 54 and the lowest was 18 years; the age group of 20-30 years old had the most participants in the research. The majority of students (46.62%) had a diploma and high school certification, and Master's degree and higher (1.69%) was the lowest education level. Most of the respondents were students (36.82%).

According to the information in Table 1, the average health literacy score in women (12.24 ± 2.59) was higher than that of men (11.67 ± 2.64). In the age variable, people over 40 (14.81 ± 1.39) obtained the highest score and those younger than 20 years (11.47 ± 2.30) had the lowest scores. In the job variable, the working group (permanent) (13.44 ± 2.54) obtained the highest score and the students (11.42 ± 2.40) had the lowest score; also, in the variable of academic degree, the master's degree and higher (15.76 ± 1.57) obtained the highest score, and high school students (9.59 ± 3.16) obtained the lowest average score in health literacy. After performing one-way ANOVA, there was a significant relationship between the level of health literacy and age and occupation ($P < 0.05$). However, the results of using independent t-test showed that health literacy did not have a significant relationship with gender. The findings of the study showed that 25.8% (76 people) had sufficient health literacy, 49.5% (146) had moderate, and 24.7% (73) had poor health literacy.

Tables 2 and 3 indicates that the component of "access to information resources" obtained 0.57 out of 1; component of "health information", 0.54 out of 1.5; the component of "reading" 0.85 out of 2; the component of "understanding" 1.20 out of 2; the component of "Judgment" 1.27 out of 2; the component of "decision" 1.26 out of 2; the component of "Knowledge" 4.47 out of 6; the component of "individual empowerment" 0.98 out of 2; and the component of "social empowerment" 0.88 out of 2. The highest score was for the Knowledge component with a score of 14.91 and the lowest score was for the component "Health Information" with a score of 7.26. Then, "reading" with a score of 8.48 was in the next level. The average health literacy of the subjects was calculated to be 13.40; therefore, the level of health literacy of 18 to 65 year old adults referring to the libraries covered by the public libraries of the city of

Table 1: Comparison of mean and determination of the relationship between health literacy and demographic characteristics of the subjects

Variable Name	Number (%)	Health literacy dimensions										P value	
		Access	Gain health information	Read	Understand	Verdict	Decide	Knowledge	Individual Empowerment	Social Empowerment	Total health literacy score		
		Mean (SD)											
Sex	Female	178 (60.14%)	0.57 (0.33)	0.56 (0.32)	0.86 (0.54)	1.19 (0.43)	1.31 (0.44)	1.29 (0.45)	4.61 (0.98)	0.97 (0.54)	0.89 (0.56)	12.24 (2.59)	0.064
	Male	117 (39.53%)	0.57 (0.31)	0.52 (0.30)	0.84 (0.48)	1.20 (0.45)	1.20 (0.46)	1.23 (0.49)	4.26 (0.12)	1.00 (0.55)	0.86 (0.46)	11.67 (2.64)	
Age	<20	111 (37.50%)	0.46 (0.30)	0.43 (0.29)	0.78 (0.51)	1.20 (0.45)	1.24 (0.39)	1.22 (0.45)	4.30 (0.98)	1.02 (0.48)	0.81 (0.56)	11.47 (2.30)	*0.002
	20-30	117 (39.53%)	0.62 (0.33)	0.59 (0.30)	0.90 (0.53)	1.22 (0.40)	1.29 (0.46)	1.20 (0.47)	4.46 (1.04)	0.93 (0.62)	0.84 (0.53)	12.04 (2.68)	
	30-40	60 (20.27%)	0.66 (0.30)	0.66 (0.32)	0.86 (0.50)	1.12 (0.45)	1.25 (0.55)	1.41 (0.46)	4.69 (1.14)	0.98 (0.51)	1.01 (0.46)	12.64 (2.84)	
	40<	7 (2.36%)	0.60 (0.31)	0.62 (0.25)	0.86 (0.44)	1.30 (0.39)	1.52 (0.26)	1.71 (0.31)	5.50 (0.78)	1.26 (0.41)	1.43 (0.24)	14.81 (1.39)	
Job	Student	109 (36.82%)	0.47 (0.30)	0.46 (0.31)	0.82 (0.49)	1.18 (0.42)	1.23 (0.40)	1.16 (0.44)	4.35 (0.96)	0.95 (0.48)	0.81 (0.54)	11.42 (2.40)	*0.000
	Student (Academic)	65 (21.96%)	0.60 (0.32)	0.56 (0.29)	0.86 (0.58)	1.26 (0.44)	1.31 (0.47)	1.26 (0.50)	4.34 (1.07)	0.97 (0.61)	0.84 (0.49)	11.99 (2.52)	
	Housewife	19 (6.42%)	0.67 (0.35)	0.64 (0.30)	0.68 (0.50)	0.93 (0.49)	1.24 (0.53)	1.24 (0.52)	4.13 (1.16)	0.97 (0.68)	0.93 (0.59)	11.45 (3.00)	
	Unemployed	25 (8.45%)	0.56 (0.35)	0.53 (0.33)	0.87 (0.52)	1.15 (0.48)	1.37 (0.49)	1.29 (0.42)	4.41 (1.26)	0.79 (0.44)	0.91 (0.64)	11.88 (2.86)	
	Permanently employed	53 (17.91%)	0.66 (0.28)	0.70 (0.29)	0.91 (0.53)	1.23 (0.43)	1.30 (0.46)	1.47 (0.42)	5.08 (0.90)	1.14 (0.59)	0.94 (0.41)	13.44 (2.54)	
	Temporary worker	24 (8.11%)	0.61 (0.34)	0.49 (0.30)	0.92 (0.38)	1.27 (0.35)	1.15 (0.52)	1.30 (0.49)	4.38 (1.03)	1.01 (0.44)	1.07 (0.64)	12.20 (2.46)	
Level of education (Degree)	Elementary education	9 (3.40%)	0.51 (0.28)	0.39 (0.29)	0.91 (0.48)	1.25 (0.56)	1.02 (0.49)	1.08 (0.66)	3.93 (1.65)	0.67 (0.61)	0.78 (0.67)	10.53 (3.68)	0.147
	Secondary education	5 (1.69%)	0.36 (0.26)	0.43 (0.30)	0.68 (0.48)	1.85 (0.41)	1.13 (0.46)	1.95 (0.34)	3.97 (1.23)	0.77 (0.47)	0.45 (0.41)	9.59 (3.16)	
	Diploma	138 (46.62%)	0.53 (0.32)	0.49 (0.29)	0.81 (0.53)	1.21 (0.43)	1.24 (0.42)	1.23 (0.44)	4.47 (0.93)	1.02 (0.53)	0.89 (0.53)	11.89 (2.29)	
	Associate degree	89 (30.07%)	0.61 (0.33)	0.59 (0.32)	0.87 (0.48)	1.21 (0.42)	1.33 (0.43)	1.31 (0.44)	4.60 (1.01)	0.96 (0.53)	0.88 (0.55)	12.36 (2.56)	
	Bachelor	48 (16.22%)	0.61 (0.30)	0.67 (0.33)	0.89 (0.54)	1.11 (0.43)	1.27 (0.55)	1.28 (0.53)	4.34 (1.27)	0.94 (0.56)	0.81 (0.49)	11.92 (3.02)	
	Masters degree and higher	5 (1.69%)	0.68 (0.18)	0.60 (0.25)	1.20 (0.68)	1.50 (0.41)	1.57 (0.25)	1.93 (0.11)	5.37 (0.87)	1.47 (0.55)	1.45 (0.45)	15.76 (1.57)	

Sanandaj was at the “moderate” level.

In line with comparing the average of health literacy with regard to normality, a t-test was used; the results showed the equality of health literacy on average in men and women. The result of the comparison of the mean of health literacy in three age groups (below 20, 20-30, and more than 30) was significant using ANOVA test. Tukey's post-hoc test showed that the average health literacy of the age group under 20 years was less than that of the age group of 30 years and above (ANOVA-Tukey's post-test). The result of the comparison of the mean of

health literacy at the job levels was significant using ANOVA test and Tukey's post-hoc test showed that the average student health literacy was less than that of the permanently employed participants (ANOVA-Tukey's post-hoc test).

Discussion

Health literacy is a global challenge and, according to the World Health Organization (WHO), has a central role in identifying inequalities in health among the rich and poor countries. In people with high levels of health literacy, the incidence of high-

Table 2: Comparison of the means and determination of the level of health literacy and demographic characteristics of individuals

Variable Name		Health literacy levels		
		Poor health literacy	Medium health literacy	Adequate health literacy
		Number (%)	Number (%)	Number (%)
Sex	Female	39 (21.91%)	88 (49.44%)	51 (28.65%)
	Male	34 (29.06%)	58 (49.57%)	25 (21.37%)
Age	<20	31(27.93%)	62 (55.86%)	18 (16.22%)
	20-30	30 (25.64%)	56 (47.86%)	31 (26.50%)
	30-40	12 (20.00%)	26 (43.33%)	22 (36.67%)
	40<	0 (00.00%)	2 (28.57%)	5 (71.43%)
Job	Student	32 (29.36%)	59 (54.13%)	18 (16.51%)
	Student (Academic)	18 (27.69%)	32 (49.23%)	15 (23.08%)
	Housewife	3 (15.79%)	13 (68.42%)	3 (15.79%)
	Unemployed	8 (32.00%)	11 (44.00%)	6 (24.00%)
	Permanently employed	7 (13.21%)	18 (33.96%)	28 (52.83%)
	Temporary worker	5 (20.83%)	13 (54.17%)	6 (25.00%)
Level of education (Degree)	Elementary education	4 (44.44%)	4 (44.44%)	1 (11.11%)
	Secondary education	2 (40.00%)	3 (60.00%)	0 (00.00%)
	Diploma	30 (21.74%)	79 (57.25%)	29 (21.01%)
	Associate degree	22(24.72%)	38 (42.70%)	29 (32.58%)
	Bachelor	14 (29.17%)	21 (43.75%)	13 (27.08%)
	Masters degree and higher	0 (00.00%)	1 (20.00%)	4 (80.00%)

Table 3: Descriptive statistics related to the score of different dimensions of health literacy

Row	Health Literacy Dimensions	No.	Minimum	Maximum	Average	S.D.	Average (20)
1	Access to Information Resources	295	0.00	1.00	0.57	0.32	11.34
2	Gain Health Information	295	0.00	1.50	0.54	0.31	7.26
3	Read	295	0.00	2.00	0.85	0.52	8.48
4	Understand	295	0.00	2.00	1.20	0.43	11.96
5	Verdict	295	0.00	2.00	1.27	0.45	12.67
6	Decision Making	295	0.00	2.00	1.26	0.47	12.64
7	Knowledge	295	1.00	6.00	4.47	1.05	14.91
8	Individual Empowerment	295	0.00	2.00	0.98	0.54	9.80
9	Social Empowerment	295	0.00	2.00	0.88	0.53	8.75
Total (Health Literacy)		295	3.50	17.93	12.01	2.62	13.40(1-14)

risk behaviors is lower and they impose less costs on governments. As a result, a survey of health literacy levels to identify and understand the status quo and improve the health literacy status to promote it is one of government policies to reduce disadvantages and increase cost-benefit state (30). In this study, 25.8% (76 people) had sufficient health literacy, 49.5% (146) had moderate health literacy and 24.7% (73) had weak health literacy. Totally, the rate of health literacy in adults aged 18-60 years old, referred to the libraries covered by the public libraries of the city of Sanandaj, was obtained at the “moderate” level. Therefore, the present study, unlike other studies (24-29) which were indicative of borderline and inadequate level of literacy in societies, indicated the literacy level of health literacy.

In this study, 25.8% (76 people) had sufficient

health literacy, 49.5% (146) had moderate health literacy, and 24.7% (73) had weak health literacy. Totally, the rate of health literacy of adults aged 18-60 years old, referred to the libraries covered by the public libraries of the city of Sanandaj, was obtained at the “moderate” level.

According to the findings of the research, and considering that more than 70% of the subjects had moderate and poor health literacy levels, it seems that the creation of appropriate mechanisms to inform the referrals to public libraries in the Sanandaj city is necessary in health care settings. In this study, there was a significant relationship between the health literacy level with age (P=0.002) and occupation (P=0.000), but there was not a significant relationship between the health literacy level and education level and gender. The lack of a significant relationship

between health literacy and gender was confirmed in Karimi (31), Orlow (32), and Nooshin's (33) research. In contrast to the present study, there was a significant correlation between job variables, age, education, and gender in the researches conducted by Borji et al. (34), Naghibi et al (35), and Rahimi et al. (36). On the other hand, considering the existence of a significant relationship between job variables and the age of the subjects, it seems necessary to have at least the skills of receiving and processing information (such as having computer skill that is important in the search and reception of information, especially electronic information). As a test source in recruitment tests as well as conducting educational services, it has been effective in raising the level of information literacy among the individuals.

In general, due to the lack of a meaningful relationship between the level of education literacy and education and gender, it seems that there is no effective and adequate training in health literacy in the curriculum. Therefore, revision is of great importance. Given that some researchers such as Rafiezadeh et al. (2015) and Tavousi et al. (2016) have also indicated these results in their studies, it seems that the presence of staff training courses among permanent employees and aging due to exposure to health information can cause increased health literacy among these people. However, in studies such as that carried out by Tehrani Bani-Hashemiet al. (2007), the level of education has the strongest link with the level of health literacy (29).

Regarding the fact that users of public libraries, ordinary people of the society, were different in terms of literacy and information, it was hard to explain the concept of health literacy; on the other hand, in some people there was a need for more precise research because of their low level of literacy. On the other hand, due to different levels of literacy, specialization and profession, the results of the research cannot be generalized to other groups. Given that the tool used in the research was a questionnaire, there were problems in collecting them. Missing questionnaires and the participants' negligence in completing the questionnaires accurately and completely were some of the problems in data collection. But given the fact that the participants in the study were among all the age groups and social groups, the information gathered is very comprehensive.

Among the strengths of this research was the research population who were those who referred to the libraries covered by public libraries in the city of Sanandaj, which made it possible to survey the general condition of the city regarding the level of health

literacy. It seems that the lack of comparison between the libraries covered by public libraries in Sanandaj and suburban counties and the study of the outcome of the two groups is one of the research weaknesses. Therefore, a comparative study is recommended.

Conclusion

Given the low score of the components of "health information" and "reading", it seems that informing the community members, creating and maintaining health-related websites, applying approaches to increase the willingness to study, and obtaining health information such as guidance boards and health infographics are effective in improving the component of health information and reading components and ultimately improving the health literacy level of the general population. However, the findings of the research indicated that the level of health literacy among the people referring to the public libraries of Sanandaj was low; considering that public library audiences are among different classes of people, there is a need for planning by the institution of public libraries and health-related organizations and institutions in order to present valid scientific products and information support in the field of health.

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