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Investigation of the Relationship between Health Literacy and Demographic Variables of Yazd City Citizens

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Abstract

Objective: Health literacy is the capacity to get, process and realize basic information and services necessary to make proper decisions in the field of health. This study was conducted with the aim of determining the relationship between health literacy and demographic variables of Yazd city citizens.

Method: This study was a descriptive (cross-sectional) one and the population included 385 people living in Yazd city in 2018. Data were collected using a researcher made questionnaire whose validity and reliability were confirmed. The participants of this study were collected through random cluster sampling. This sampling method is also called group or complex sampling in which the population is not scattered. This method is used in large-scale population research. Initially, the statistical population is subdivided into regions containing so-called clusters. Among these components, some were selected and evaluated using simple sampling method. After completing the questionnaires by participants, the data analysis was performed using SPSS statistical software (22), Pearson correlation coefficient and Chi-Square Test.

Results: The results indicate that there is a significant relationship between health literacy and age, and gender and marital status. The highest correlation coefficient was observed in the relationship between health literacy and age.

Conclusion: Due to the effective demographic variables, it seems that demographic characteristic-based interventions should be designed and implemented in order to improve the health literacy of citizens.

Keywords: Health, Literacy, Gender, Age, Demographic Variables.

Introduction

The concept of literacy refers to the ability to read and write, and a literate individual is someone who can comprehend simple and short phrases and can read and write. Today, the concept of literacy refers not only to the ability to read, write, or comprehend, but also to have knowledge about a particular subject or field (Khaleqi et al., 2019). Regarding the concept of health, it should also be mentioned that before 1948, this term meant the existence or absence of disease in individuals. However, the World Health Conference (1948) provided a more comprehensive definition in which all human dimensions (physical, psychological and social) are considered. It was explicitly stated in this conference that health does not simply mean the absence of illness or disability (Ahmadi et al., 2018).

The World Health Organization defines mental health as a form of well-being in which the individual identifies his/her strength and is able to cope with stress and engage in effective activities and help the society as a whole (Behzadipour, Sadeghi, & Sepahmansour, 2018). Health Literacy is a term used in the scientific literature on health education in 1974 (Mohammadi Farah et al., 2017) and first was entered in the field of health promotion by Kickbusch in 1779 (Kindig et al., 2004). Then, Nutbeam noted

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this concept in the Health Promotion Glossary (World Health Organization, 2009). Nutbeam (2000) categorized health literacy into three main categories of basic/functional, communicative, and critical health literacy respectively which include reading and writing skills, the skills of information and meanings extraction from communicative channels, and finally, the skills of individuals in controlling life events.

Health literacy is one of the issues that has been introduced as an important and controversial one in the world during recent years (Nutbeam and Kickbusch, 2000), which is more than just the ability to read and write (Javadzadeh et al., 2013). Health literacy is defined as the capacity to obtain, process, and comprehend the basic information and services required to make proper decisions in the field of health (Zarcadoolas, 2005). Health literacy emphasizes the point that the topics presented in the field of health are closely related to public health skills (Haerian Ardakani et al., 2015). Patients play a key role in controlling their health and, therefore, they should have necessary and sufficient participation in their health and medical decisions (Mohammadi Farah et al., 2017). Individuals with higher health literacy have more information on health and its related factors; they conduct more healthy behaviors and have a healthier lifestyle. Health promoting behaviors include behaviors such as proper nutrition, regular exercise, avoidance of risky behaviors and drug use, protection against incidents, timely diseases diagnosis, emotions and thoughts controlling, problem solving-based coping with events and life problems, maintenance of independence and adaptability, and modification of interpersonal relationships (Khosh Ravesh et al., 2018). Health literacy influences how people make decisions in the field of their health greatly, and therefore, is of interest to policymakers in various countries (Pashaei Pour et al., 2018).

The World Health Organization (WHO) (2008), in a report, introduced the health literacy as one of the most important factors affecting the health and recommended it to all countries in the world (Robat Sarpoushi et al., 2017). The organization also proposed the establishment of a community of specialists in this field from all over the world to coordinate strategic activities related to promote the health literacy of people around the world (Olyani et al., 2017). The American Medical Foundation also mentions health literacy as one of the 20 priorities that can change people's quality of life and care (Behrouz et al., 2018). The Committee on Health Literacy, American Medical Association, regards health literacy as a general concern in issues of health promotion from an individual and environmental perspective, disease prevention and early screening, continuity of health care as well as policy-making. The population experts of Medical Association considers the dimensions of health literacy as four dimensions, which can be categorized into four categories: theoretical and cultural knowledge, oral literacy (speaking and hearing), written literacy (writing and reading) and computational literacy (Javadzadeh et al., 2013). In Iran, creating a healthy and empowered society in which people can have the required ability to access, analyze and make necessary decisions in the field of health information and social capital has been set as a long-term goal. It is hoped that this goal will be met in 1404 through conducting research and related planning (Mohammadi Farah et al., 2017).

Health literacy can play a significant role in promoting self-care and preventive behaviors. Individuals with higher health literacy better assess their health status and conduct screening tests more regularly (Raeisi et al., 2011). The poor health literacy can be deemed as a silent killer, leading to a deterioration of illness and an increase in mortality. People with lower health literacy, have more cardiovascular disease, liver disease, obesity, etc. and higher treatment care costs are imposed on them. Such people do not enjoy sufficient skills to negotiate in the health care system and access to health services. They also experience more

medication errors (Ahmadi et al., 2018).

Literature review

Studies conducted around the world indicate that low levels of health literacy would result in consequences such as less performing screening tests and poor self-care behaviors (Panahi et al., 2018). Also, most of these studies have argued that people do not have an appropriate health literacy status and studies that examine the health literacy of different communities form different perspectives and clarifying its different dimensions are required. Santo et al. (2005) in a research conducted on 85 studies, reported inadequate health literacy level in the world countries. The National study of America's health literacy (2009) also suggested that only 11% of adults had health literacy. In this study, it was found that 47% of Americans had a very poor understanding of health information (Yin et al., 2009). Some studies have assessed the health literacy level in Iran relatively low and mentioned low education, low socioeconomic status and high age as low health literacy-related factors (Tehrani-Banihashemi et al., 2007). In some studies, age, gender, income level and education level are mentioned among the health literacy-related factors (Khosravi and Ahmadzadeh, 2015; Tehrani-Banihashemi et al., 2007; Von Wagner et al., 2007). Javadzadeh et al. (2013) reported in their study that usually female, the elderly, high-income, and low-educated individuals do not generally have sufficient health literacy. Since, there is no study on the relationship between health literacy and demographic variables (gender, age, marital status) of Yazd citizens, especially in the urban area, and considering that health development in each region requires the information in different dimensions of the subject and awareness of the weaknesses of the people's health literacy in that population is necessary to plan, this study was done with the aim of answering the question whether there is a relationship between demographic variables and health literacy of citizens of Yazd City.

Research Methodology

This study is a population-based, cross-sectional (descriptive-analytic) one on the population aged 18-65 years old living in urban areas of Yazd. The statistical population included citizens aged 18-65 years old referring to comprehensive health service centers of Yazd between October and December 2012. Since the exact size of the population was not available, Cochran formula was used to calculate the sample size needed, so 385 people were selected as sample by random cluster sampling method. Cluster sampling is feasible when the researcher cannot easily select his/her statistical population. In other words, cluster sampling can be used when collecting a complete list of elements constituting the population is impossible or impractical (Babbie, 2018). Thus, two areas of Yazd were selected randomly from District 2. In the selected area, by referring to the comprehensive health centers and achieving the list of clients, randomly selected citizens of the present study were asked to complete the questionnaire and necessary coordination was done. Data were collected through a researcher-made questionnaire by selected subjects. Finally, the results obtained from the data were analyzed by SPSS software 22 at two levels of descriptive statistics (frequency and percentage) and inferential statistics (Pearson correlation, Chi-square).

Research Instruments

Health literacy measurement questionnaire:

Data were collected using a researcher-made questionnaire. The questionnaire has 34 items and measures population health literacy. The questions are based on a Likert scale ranging from 1 to 5. This spectrum consists of completely agree, agree, neutral, disagree and completely disagree levels based on the researcher's point of view. The items of the questionnaire were formulated based on the theoretical basis of the study as well as previous research. The questionnaire's validity was confirmed through content validity. The content validity, which

is also referred to as the validity of the researcher, implies whether the data collection tool well represents the content to be measured. In other words, content validity refers to the items ability or capability to cover the whole content of a given construct (Mirzaei, 2009). For this purpose, the questionnaire was given to 30 experts to comment on the items. Cronbach's alpha was also used to examine the questionnaire's reliability. The Cronbach's alpha coefficient of the research variable was as follows:

Conceptual and cultural literacy: 0.76

Oral literacy: 0.73

Computational Literacy: 0.69

Written Literacy: 79

All participants were assured that their information would be completely confidential; there was no concern for their private information disclosure, and they could also be aware of the results of the study. In addition, patients' information was recorded anonymously, i.e. without mentioning their names, and just by using codes for each subject.

Investigating the relationship between Health Literacy and demographic variables of Yazd city citizens, the authors of the article certify that this article has not been previously published in any domestic or foreign journals. In addition, during the conducting of this research and the preparation of the paper, all national laws and professional ethics related to the research subject have been met and this article is the result of my research activities and the rights of all those who have participated in this research have been respected.

Research findings

In this study, 385 citizens of Yazd City aged 65-18 years old participated, among which 61 percent (235) were female and 39 percent (150) were male. With regard to marital status, 85 percent (327) were married and 15% (58) were single. Regarding the age group, 4.8% (18) were under 20, 55.4% (214) were between 20 and 29, 29.4% (113) were 30-39, and 10.3% (40) were 40-65 years old. In terms of education, 6% (23) had elementary education, 33.2% (128) had middle school and diploma degrees, 49.1% (189) had undergraduate degrees, 9.1 % (35) and more had a graduate degree and higher, and 3% (10) were housewives. The data were analyzed in two levels of descriptive statistics including frequency and percentage and inferential statistics including Pearson and Chi-square correlation coefficients by SPSS software. Table 1 presents the data analysis of the sample by gender and its relationship with the health literacy.

In Table1, the relationship between gender and increase in the health literacy is presented. Based on the findings shown in the table, the health literacy of males in low, moderate and high levels are 23.3, 26.7 and 50 percent respectively. On the other hand, the health literacy of females in low, moderate and high levels are 15.3%, 30.2% and 54.5%, respectively. The Chi-square correlation coefficient was 19.71, indicating the relationship between the two variables. In other words, the gender affects the individuals' health literacy and the health literacy level of women is higher. The data analysis was performed using SPSS statistical software 22, Pearson correlation coefficient and Chi-Square Test. Table 2 presents the data analysis of the sample by age and its relationship with the health literacy.

In Table 2, the relationship between age and increase in the health literacy is demonstrated. Based on the findings shown in the table, the health

Table 1. Analysis of the relationship between gender and health literacy

Health literacy		Low		Moderate		High		Total	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Gender	Male	35	23.3	40	26.7	75	50	150	100
	Female	36	15.3	71	30.2	128	54.5	235	100
	Total	71	18.4	111	28.8	203	52.7	385	100

literacy of people under the age of 20 years in low, moderate and high levels are 61.1%, 22.2% and 16.7%, respectively. The health literacy of citizens aged 20-29 years in low, moderate and high levels are 14, 32.7 and 53.3%, respectively. The health literacy of citizens aged 30-39 in low, moderate and high levels are 13.3, 32.7 and 54% respectively. And finally, the health literacy of citizens over 40 years old in low, moderate and high levels are in 17.5, 7.5 and 77.5% respectively. The calculated Pearson Correlation Coefficient is 0.76, indicating a positive relationship between the two variables. In other words, as the age of individuals increases, their use of social networks and local media, and consequently their level of health literacy, increases. The data were analyzed through Pearson and Chi-square correlation coefficients formula using SPSS software 22. In Table 3, the data analysis of the sample by marital status and its relationship with the health literacy is presented.

In Table 3, the relationship between marital status and their health literacy level is presented. Based on the results shown in the table, the health literacy level of single individuals in low, moderate and high levels are 14.8, 24.2 and 61.2% respectively. On the other hand, the health literacy of married people in low, moderate and high levels are 19, 22.4 and 58.6% respectively. The calculated Chi-square correlation coefficient is 16.75, indicating the relationship between the two variables of marital status and health literacy. The correlation coefficient shows that single people are more engaged in media and social networks and also to health importance and health literacy in married life than married people. In other words, married people generally rated their health literacy better than single people.

Discussion

This study was conducted with the aim of investigating the relationship between health literacy and demographic variables of Yazd citizens. Based on the results shown in Table 1, there is a significant difference between the health literacy scores of male and female citizens in Yazd, and the health literacy level of women is higher. This finding is in contrast with the findings of the studies done by Hussein et al. (2018), Khosh Ravesh et al. (2018) and Paasche Orlaw et al. (2005), which indicated no significant difference between the two groups in terms of the health literacy level. The study by Nejad Hussein et al. (2018) indicated that there is no significant difference in urban areas between the two groups of

Table 2. Analysis of the relationship between age and health literacy

Health literacy		Low		Moderate		High		Total	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Age	Under 20 years old	11	61.1	4	22.2	3	16.7	18	100
	20-30	30	14	70	32.7	114	53.3	214	100
	30-39	15	13.3	37	32.7	61	54	113	100
	Over 40 years old	7	17.5	3	7.5	31	77.5	40	100
	Total	63	16.4	114	29.6	209	54.3	385	100

Table 3. Analysis of the relationship between marital status and health literacy

Health literacy		Low		Moderate		High		Total	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Marital Status	Male	48	14.8	79	24.2	200	61.2	327	100
	Female	11	19	13	22.4	34	58.6	58	100
	Total	59	15.3	92	23.9	234	60.8	385	100

women and men in terms of the health literacy level. This inconsistency between the results of the present study and Nejad Hussein et al. (2018) can be due to differences in their statistical samples. Because the sample selected by Hussein et al. (2018) included literate people, and this could affect the lack of relationship between gender and health literacy. As some studies have suggested, people with a higher education level have more health literacy and better understanding of healthcare information and instructions and use them more correctly (Kutner et al., 2006). This causes a lower difference between the two genders, both of whom have high education, in terms of the health literacy level. The results of the study by Rostami et al. (2010) also indicate the effective role of low literacy and lack of awareness among patients about their rights in receiving provided training in health care system. According to Sahrai et al. (2016), low-literate and illiterate patients cannot acquire the knowledge and skills required to take care of themselves, and they should not be expected to follow the medical prescriptions correctly (quoted from Tehrani et al., 2018). This inconsistency in the findings can also be attributed to the cultural and social differences between target groups in various studies. In fact, culture is a factor affecting the formation of attitudes and behaviors among people of different ethnicities and causes different levels of health literacy among women and men in different target groups; this requires further study (Von Wagner et al., 2007). Also, the finding is inconsistent with the findings of the studies of Nejad Hussein et al. (2018), Khosravi and Ahmadzadeh (2015), Javadzadeh et al. (2013), Tehrani-Banihashemi et al. (2007), Ozdemir et al. (2010), and Cho et al. (2008), which showed higher health literacy level among men compared to women. On the other hand, the finding of this study is consistent with the results of the studies done by Saatchi et al. (2017), Tawousi et al. (2015), Vozikis et al. (2014), Maat et al. (2014), and Von Wagner et al. (2007), which concluded that the health literacy level of women is higher. To explain these findings, one can argue that women care about their health more than men; they are more sensitive to different food and drug labels and study health content more accurately (Mohammadi Farah et al., 2012; Zhang and Cui, 2011). The inconsistency and consistency of the findings of this study with other studies can be attributed to the differences in population groups and different measurement tools.

The other finding of this study implies that there is a significant relationship between health literacy and age. That is, the higher the age of individuals, the higher their health literacy will be. This finding is consistent with the results of the study by Behrouz et al. (2018), which indicated that the older people has better health literacy level. Kohan et al. (2018), in their study, found that women younger than 25 years old have no maternal health literacy compared to other women. Mohammadi Farah et al. (2017) also indicated that the students' age has a significant relationship with the dimensions of health literacy (understanding, interpretation), and as the age of students increases, their health literacy level increases too. In explaining this relationship, it can be said that as age increases, the acquisition of information on health issues increases and individuals get more experience as a result of encountering the situations, and as a result the health literacy level increases (Mohammadi Farah et al., 2017). Among the inconsistent studies, we can mention those conducted by Askarian Tondari et al. (2018), Nezad Hussein et al (2018), Khosh Ravesh et al (2018), Borji et al (2017), Javadzadeh et al (2013), Tehrani-Banihashemi et al. (2007), and Lee et al. (2010) that argue that there is a negative relationship between age and health literacy. Tondari et al. (2018) reported that people over the age of 40 do not have the adequate health literacy due to reduced cognitive function, distance from formal education and reduced sensory abilities. Borgi et al. (2017) also found that increase in the age causes physical, psychological and social changes that increase the dependence on health care staff, and

the ability to effective self-care, and the effective interaction and communication with health care centers are reduced to the same extent. In explaining this finding, it can be said that younger people face less problems in realizing and understanding health information than middle-aged and elderly people and they show more care and attention than others (Hussein Nejad et al., 2018). The other finding of the present study indicates that there is a significant relationship between marital status and health literacy of participants. That is, married people have more satisfaction with their health literacy than single people. The finding is in line with the results of the studies by Khosh Ravesh et al. (2018), Mohammadi Farah et al. (2017), Rezaei Esfahroud et al. (2016), and Ganbari et al. (2016). Married people seem to have wider social networks that affect the promotion of their health literacy. In this way, they can make better decisions on health issues. Also, married people have a higher sense of responsibility for their own and other family members' health than single people. Therefore, obtaining health information are of importance to them and they are more motivated to follow this information. These, in turn, can have an impact on the promotion of health literacy of married people (Khosh Ravesh et al., 2018).

Conclusion

It should be stated that this study, like other studies, has its own limitations, so the findings of this study cannot be generalized to other population and ethnic groups. One of the limitations of this study is the use of interview measurement tool as a complementary tool for self-report questionnaire; therefore, it is recommended that both tools be used in future studies. Another limitation was the lack of investigation of the relationship between variables such as socioeconomic status, income and employment with the health literacy of citizens in Yazd. The evaluation of only citizens who referred to Yazd comprehensive health service centers was the other limitation of this study.

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