

Nurses' health information literacy relationship with their communication skills in Hospitals affiliated with Kerman University of medical sciences

Mohammad Azami¹, Hamid Sharifi², Elham Zarei Venovel^{3*}

¹ PhD, Assistant professor, Medical Informatics Research Center, Institute for Futures Studies in Health, Kerman University of Medical Sciences, Kerman, Iran, ² Associate Professor, Department of Biostatistics and Epidemiology, School of Public Health Kerman University of Medical Sciences, Kerman, Iran, ³ MSc, Dept. of Medical Library and Information Sciences, Kerman University of Medical Sciences, Kerman, Iran.

Correspondence: Elham Zarei Venovel, MSc, Dept. of Medical Library and Information Sciences, Kerman University of Medical Sciences, Kerman, Iran, Email: elhamvenovel@yahoo.com.

ABSTRACT

Introduction: Health information literacy is the ability of an individual to acquire, interpret and understand the basic information and health services needed to make health decisions appropriate. The purpose of this study was to investigate the effect of health information literacy of nurses on their communication skills in hospitals affiliated with Kerman University of Medical Sciences. **Method:** The data of this analytical survey collected using a researcher-made questionnaire on health information literacy and communication skills in nurses. The reliability of the questionnaires was more than 0.9 in the test-retest alpha, and its validity was confirmed by the relevant professors in the field of medical librarianship and information science. The population was 202 nurses working in hospitals affiliated with Kerman University of Medical Sciences in 2016. Data were analyzed by descriptive and analytical orders of SPSS-22 software. **Findings:** The results indicated that the nurses' health information literacy acquired higher scores in two areas of ability to recognize information needs, and understanding and evaluation of information ($p < 0.01$). The best communication skills in the nurses was communication skills ($p < 0.01$). The regression analysis indicated that 43.6% of changes in nurses' communication skills are influenced by health information literacy variables. **Conclusion:** Considering the effect of information literacy of nurses on their communication skills with patients, so it is recommended to pay more attention to the improvements in the nurses' health information literacy.

Keywords: Information Literacy, health communication, Nurses.

Introduction

The Association of College & Research Libraries (ACRL) has defined information literacy as a set of skills needed to discover, retrieve, analyze, and use information^[1]. Information literacy is the ability to detect when information is needed to find possible resources based on needs and make decisions by searching

among them and obtaining and evaluating the results. A person with information literacy uses effective information to meet his/her personal and professional needs and is capable of lifelong learning. Having information literacy influences the individual's learning and helps to expand his/her researches to acquire more control over his/her knowledge^[2].

One of the areas of information literacy is health care. The United States Department of Health and Human Services (HHS), has defined health information literacy as the ability of an individual to acquire, interpret and understand the basic information and health services needed to make health decisions^[3]. Having information literacy in the nursing profession is important because many unpleasant events related to the health of patients are associated with inadequate health literacy^[4]. Nurses, like other medical professionals, need to be aware of ways to access, evaluate, and apply information to be professional in their careers. In the American Nursing

Access this article online

Website: www.japer.in

E-ISSN: 2249-3379

How to cite this article: Mohammad Azami, Hamid Sharifi, Elham Zarei Venovel. Nurses' health information literacy relationship with their communication skills in Hospitals affiliated with Kerman University of medical sciences. *J Adv Pharm Edu Res* 2018;8(S2):117-121.

Source of Support: Nil, Conflict of Interest: None declared.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Association in 2001, having information literacy skills, in addition to information learned in the course of study, is one of the skills required to be obtained by nurses [4, 5]. Factors that affect the quality of nurses' communication to patients are divided into three categories: nurses, factors related to patients and factors related to environmental conditions [6]. The factors related to nurses are their level of education so that nurses with more information level, according to the patient's statements, will be able to provide more information about the illness and health to the patients [7]. Burgener and Shimer (1993) stated that the level of nursing education is related to their communication skills such as more attention, transmission tranquility to the patients and feedback behaviors [8].

The patient's relationship with health professionals is an effective dimension in preventing disease and promoting health [9]. Among health professionals, nurses spend more time with patients and playing an important role in providing patients with appropriate information to increase their awareness, insight and performance against their diseases. Effective communication leads to increasing the awareness of patients about health hazards, and also provide solutions, motivation and skills to reduce risks, attracting people in similar situations, changing their attitudes and improving their attitudes [10, 11]. In this regard, it can be said that two categories of health information literacy in nurses and nursing skills in effective communication with patients are not separate from each other in order to achieve the desired outcome of the treatment. The role of nurses in transferring sufficient information to patients requires that nurses have enough information about illness to provide them with useful and necessary information to change their behavior, improve their lifestyle and improve their health. On the other hand, effective communication and continuity of this relationship bring satisfaction, cooperation, improvement in vital signs, pain and anxiety and better participation of patients [12, 13].

In this study, the Nurses' Health information literacy in 5 domains of ability to identify information needs, locate and access to information, understanding and evaluating information, the ability to make effective use of information, decision-making and behavior were examined. Ability to recognize information needs is the feeling of needing information in the nurses in order to provide patients with better services. In the area of locating and accessing information, the nurse is able to respond to the questions and information required by the patient with continuous learning and access to new information, taking into account available facilities and technologies. The purpose of understanding and evaluating information is the ability to read consent forms, stickers and attachments related to medicine and other written information related to health, ability to understand written and oral information provided by the doctor, other nurses, drug dealers and the insured to the nurse, and also in assessing the information, the nurse's ability to analyze the results is evaluated to provide useful information in the process of treatment and registration in the patient's medical records. In the area of effective use of information, the nurse's ability to use

health information in the treatment of the patient is investigated. Decisions and behaviors mean decision-making ability of a nurse based on guidelines for drug and medical care programs.

Methods

Two hundred and two nurses from different departments of three hospitals affiliated with Kerman University of Medical Sciences were entered to this analytical survey study. During the course of the study, the researcher randomly sent to hospitals affiliated with Kerman University of Medical Sciences each week.

The study researchers were referred to the hospitals randomly in each week and the questionnaires were delivered to the nurses after explaining the study aims. Two researcher-made questionnaires including health information literacy questionnaire and communication skills questionnaire were used to collect data.

The first part of the questionnaires included nurses' personal information including age, sex, level of education, marital status and income. The second part of the health information literacy questionnaire included 31 questions of five options that included nursing health information literacy in 5 different areas, including the ability to identify information needs (5 questions), location and access to information (7 questions), understanding and assessment of information (11 questions), the ability to use effective information (8 questions), decision making and behavior (6 questions). The second part of the communication skills questionnaire included 25 multiple choice questions, in three areas of verbal skills (10 items), listening skills (8 items) and feedback skills (7 items).

The reliability of these questionnaires was performed by Alpha-Cronbach test to examine the correlation between 30 participants. The alpha number for health information literacy questionnaire was 0.948, and in 6 areas of ability to recognize information needs, location and access to information, understanding and assessment of information, the ability to use information, decision making and behavior were 0.978, 0.956, 0.929, 0.821 and 0.851, respectively. The alpha number for skills of communication questionnaire was 0.972, and in 3 areas of listening, verbal and feedback skills were 0.919, 0.949 and 0.986, respectively. These confirmed the internal consistency of the questionnaires. Validity of the questionnaires was approved by the related professors after the recommended corrections.

The data were analyzed using descriptive statistics (mean, mean standard error, standard deviation and frequency) and analytical statistics (Kruskal-Wallis test, Spearman correlation coefficient and regression tests) in SPSS 22 software at significant level of $p \leq 0.05$. Kolmogorov-Smirnov test was used to assess the normality of the variables.

Results

About the gender of participants, 83.8% were women and the rest were men. The mean age of nurses was 33.29 ± 4.74 years. Most nurses were married (67.6%), their level of education was from graduate to postgraduate, and 89% had a bachelor's degree. Most nurses (89.6%) had a total monthly income of 500 to 680 US Dollar (USD) (Table 1).

Table 1. health information literacy and its components in nurses' communication skills

Variables	Mean	Standard Deviation	Chi-Square	P-value
Health information literacy	3.76	0.465		
Ability to recognize information needs	4.03	0.516		
Locating and accessing information	3.300	0.686		
Understanding and evaluating information	4.069	0.628	213.575	0.000
Ability to use effective information	3.501	0.603		
Decision making and behavior	3.777	0.485		
Communication skill	3.955	0.464		
Verbal communication skills	3.987	0.537	17.786	0.000
Audio Communication Skills	4.044	0.559		
Feedback communication skills	3.805	0.560		

Mean health information literacy of the nurses was 3.76. Mean score obtained in the areas sub-areas of ability to recognize information needs, location and access to information, understanding and assessment of information, the ability to use information, decision making and behavior were 4.3, 3.30, 4.7, 3.50 and 78.3, respectively. The scores obtained shows that nurses' performance was better in two areas of ability to recognize information needs and understanding and assessment of information ($p \leq 0.01$) (Table 2).

Mean communication skills of the nurses was 3.96. Mean scores obtained in the sub-areas of verbal communication skills, auditory communication skills and feedback communication skills in nurses were 3.987, 4.44 and 3.805, respectively. Based on the scores, the best communication skill in the area of communication skills was auditory communication skill ($p \leq 0.01$) (Table 2).

Table 2. Health information literacy, communication skills and their components in nurses affiliated with Kerman University of Medical Sciences, Iran

Variables	Mean	Standard deviation	Chi-square	P-value
Health information literacy	3.76	0.465		
Ability to recognize information needs	4.03	0.516		
Locating and accessing information	3.300	0.686		
Understanding and evaluating information	4.069	0.628	213.575	0.000
Ability to use effective information	3.501	0.603		
Decision making and behavior	3.777	0.485		
Communication skill	3.955	0.464		

Verbal communication skills	3.987	0.537		
Audio Communication Skills	4.044	0.559	17.786	0.000
Feedback communication skills	3.805	0.560		

The assumption of the normality of the research variables was rejected by one sample Kolmogorov-Smirnov ($p \leq 0.05$); therefore, Spearman correlation tests were used to assess the correlation between variables. As table 3 indicates, all presented assumptions with different correlation severities are rejected ($p < 0.01$) (Table 3).

Table 3. The relationship between the components of health information literacy and communication skills in the studied nurses

Hypothesis	Significance level of the test	Spearman correlation (r)	Relationship type
There is no relationship between health information literacy and communication skills of nurses	*0.000	0.670	Direct
There is no relationship between the ability to identify information needs and nursing communication skills	*0.000	0.567	Direct
There is no relationship between finding and accessing information with communication skills in the nurses.	*0.000	0.573	Direct
There is no relation between understanding and assessment of information with communication skill in the nurses.	*0.000	0.605	Direct
There is no relationship between the ability to use information effectively with communication skills in the nurses.	*0.000	0.581	Direct
There is no relationship between decision making and behavior with communication skills in the nurses.	*0.000	0.288	Direct

p-value ≤ 0.01 considered as significant

Regarding the regression model, the obtained determination coefficient was 0.436, which means 43.6% of the changes in the nurses' communication skills changes are expressed by the health information literacy variables. The P-value = 0.00 for ANOVA indicates that the regression model is significant, statistically. Table 4 presents the standard coefficients and meaningful values of each health information literacy variables. Accordingly, the variables of the ability to recognize the information needs and understanding and assessment of information are significant in the model ($p \leq 0.01$). The examination of standard coefficients shows that these two variables have the same effect on communication skills of nurses in regression model.

Table 4. Multiple regression for predicting the communication skills of nurses on the basis of health information literacy

Independent variables	t statistics	Meaningful value	Non-standard coefficients		Standard coefficients
			Standard error	B	Beta
The ability to recognize information needs	3.990	0.000	0.068	0.271	0.298
Locating and accessing information	0.581	0.562	0.069	0.040	0.058
Understanding and evaluating information	4.026	0.000	0.063	0.254	0.290
Ability to use effective information	0.527	0.128	0.080	0.122	0.159
Decision making and behavior	0.466	0.642	0.062	0.029	0.031

Discussion

Assessment health information literacy of nurses in hospitals affiliated with Kerman University of Medical Sciences showed that nurses are aware of receiving new medical information to increase their information, also, based on their knowledge, are able to provide the needed services to the patients and respond to their information needs, but it was identified that the nurses have lower performance in finding and accessing information and also effective use of information.

The reasons for this have been repeatedly investigated in various studies. kahouei et al. stated that lack of skill in using databases, libraries and internet, lack of trustworthiness to the internet sources, difficulty in understanding scientific texts, lack of belief in evidence-based practice and the impact of scientific results on patient care, and finally long years of using traditional information sources are among the main causes of low tendency in using internet, electronic journals and information banks by nurses [14]. In a study conducted by Boström et al. in Sweden, lack of adequate knowledge, lack of appropriate facilities, and unfamiliarity with English language were identified as obstacles to access to information [15]. Dee and Stanley stated that lack of skill in finding information in the databases and reliance on colleagues are the main barriers to obtain new knowledge by nursing students and nurses [16]. In a study by Griffiths et al. (2001), unfamiliarity with scientific databases, lack of computer skills, and low level of self-confidence to use databases were identified as the effective factors on using information databases [17].

The results indicated that, in one hand, the best communication skills in the nurses were verbal and auditory skills. On the other hand, the nurses were weak at presenting feedback at their communications. The results show that the nurses by listening patients' speeches, provide them with their needed information. So that, one of the factors effective on decrease in

verbal communication skills is fear of giving wrong information to patients [18].

Lower feedback skills compared to verbal and aural skills in the nurses indicate that patients are not questioned in order to ensure they receive the correct information. Sabzevari et al. stated that the poor communication of nursing students in educational hospitals of Kerman University of Medical Sciences with patients was due to their lack of knowledge about how to ask open and closed questions [19].

The results indicate that there is a direct relationship between the health information literacy of nurses in hospitals affiliated with Kerman University of Medical Sciences with their communication skills ($p < 0.01$). In other words, it can be said that with more than 95% confidence interval that whatever nurses' health information literacy be higher, their communication skills will be greater.

Spearman correlation coefficients showed a significant statistical relationship between all components of health information literacy and communication skills of nurses, but in the regression model, only 43.6% of communication skills of nurses were influenced by their health information literacy. This impressionability is from the variables of ability to recognize information needs and understanding information assessment; the reason is the effectiveness of factors other than health information literacy on nursing communication skills. Caris - Verhallen stated that, moreover nurses, patients and environmental factors are also involved in the relationship between the nurse and the patient [20]. Mahmoodi et al. stated that job satisfaction of nurses is related to their communication skills [21]. According to Tongue et al., communication skills are acquired through better education [22]. Hemati-Molsak-Pak and colleagues stated that considering the patients personal differences as one of the ways to increase the verbal communication skills [23].

Conclusion

According to the results, the following suggestions are recommended to increase health information literacy of nurses and as a result of increasing their communication skills: 1. Presenting information freely in the hands of nurses to increase their motivation. 2. Introducing new technologies in the areas of medical services. 3. Expanding the culture of information literacy among nurses in order to increase their self-confidence and changing nurse's attitudes and understanding toward information. 4. Establishing in-service training courses for nurses.

References

1. American College of Research Libraries, 2010. Information literacy standards for higher education. Available from <http://www.ala.org/acrl/standards>.

2. Schloman B. Information Resources: Information Literacy: The Benefits of Partnership [Online]. 2001 [cited 2006 June 3].
3. U.S. Department of Health and Human Services: Office of Disease Prevention and Health Promotion--Healthy People 2010. NASNewsletter. 2000;15(3):3.
4. Azami M, Sharifi H, Amini S and Delkhosh Y. The effect of Information Literacy Training on Self-Efficacy of Nursing Graduate Students of Kerman University of Medical Sciences. *Journal of Biochemical Technology*. 2018;6(3):24-32.
5. Flood LS, Gasiewicz N, Delpier T. Integrating information literacy across a BSN curriculum. *The Journal of nursing education*. 2010;49(2):101-4.
6. Mosadeghrad AM. Factors influencing healthcare service quality. *International journal of health policy and management*. 2014;3(2):77.
7. Norouzinia R, Aghabarari M, Shiri M, Karimi M, Samami E. Communication barriers perceived by nurses and patients. *Global journal of health science*. 2016;8(6):65.
8. Burgener SC, Shimer R. Variables related to caregiver behaviors with cognitively impaired elders in institutional settings. *Research in nursing & health*. 1993;16(3):193-202.
9. McMullan M. Patients using the Internet to obtain health information: how this affects the patient-health professional relationship. *Patient education and counseling*. 2006;63(1-2):24-8.
10. Tobiano G, Bucknall T, Marshall A, Guinane J, Chaboyer W. Nurses' views of patient participation in nursing care. *Journal of advanced nursing*. 2015;71(12):2741-52.
11. Mackie BR, Marshall A, Mitchell M. Acute care nurses' views on family participation and collaboration in fundamental care. *Journal of clinical nursing*. 2018;27(11-12):2346-59.
12. Wynia MK, Osborn CY. Health literacy and communication quality in health care organizations. *Journal of health communication*. 2010;15(S2):102-15.
13. Nadzam DM. Nurses' role in communication and patient safety. *Journal of Nursing Care Quality*. 2009;24(3):184-8.
14. Kahouei M, Babamohamadi H, Sadat Ghazavi Shariat Panahi S. Use of Information Resources for Clinical Decisions by Nurses and Nursing Students, and Its Barriers after Introducing Information Technology. *Iranian Journal of Medical Education*. 2013;13(3):244-53.
15. Boström A-M, Kajermo KN, Nordström G, Wallin L. Barriers to research utilization and research use among registered nurses working in the care of older people: Does the BARRIERS Scale discriminate between research users and non-research users on perceptions of barriers? *Implementation Science*. 2008;3(1):24.
16. Dee C, Stanley EE. Information-seeking behavior of nursing students and clinical nurses: implications for health sciences librarians. *Journal of the Medical Library Association*. 2005;93(2):213.
17. Griffiths P, Riddington L. Nurses' use of computer databases to identify evidence for practice—a cross-sectional questionnaire survey in a UK hospital. *Health Information & Libraries Journal*. 2001;18(1):2-9.
18. Kotecki CN. Baccalaureate nursing students' communication process in the clinical setting. *Journal of Nursing Education*. 2002;41(2):61-8.
19. Sabzevari S, Soltani Arabshahi K, Shekarabi R, Koohpayehzadeh J. Nursing Students' Communication with Patients in Hospitals Affiliated to Kerman University of Medical Sciences. *Iranian Journal of Medical Education*. 2006;6(1):43-9.
20. Caris-Verhallen WM, De Gruijter IM, Kerkstra A, Bensing JM. Factors related to nurse communication with elderly people. *Journal of advanced nursing*. 1999;30(5):1106-17.
21. Mahmoudi H, Soori laki A, Boulhasani M, Sepahvand M-J. The relationship between use of communication skills and job satisfaction of nurses. *Daneshvar Medicine*. 2012;20(101):77-82.
22. Tongue JR, Epps HR, Forese LL. Communication skills for patient-centered care: research-based, easily learned techniques for medical interviews that benefit orthopaedic surgeons and their patients. *JBJS*. 2005;87(3):652-8.
23. Hemmati M, Sheikhabaglu M, Baghaie R. Relationship between the communication skill of nurse - patient with patient safety in the critical care units. *Journal of Clinical Nursing and Midwifery*. 2014; 3(2):77-84.