

ORIGINAL RESEARCH

# Health Literacy-Related Knowledge and Experience among Nurses Practicing in Medical-Surgical Wards



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## Abstract

**Background:** Medical-surgical nurses are responsible of providing competent care to clients with a wide-array of acute and chronic health problems. This challenging task requires arming nurses with advanced competencies of health literacy to effectively educate their clients. However, evidence about medical-surgical nurse's health literacy-related knowledge and experience is limited.

**Purposes:** This study aimed to determine the level of the health literacy-related knowledge and experience among medical-surgical nurses.

**Design:** A descriptive-cross-sectional study was conducted among a total sample of 177 nurses who were practicing in medical-surgical wards in teaching hospitals in Iraq. A convenience sampling method was used to select the participants. Data were collected using the Health Literacy Knowledge and Experiences Survey-2 (HLKES-2). Descriptive statistics and Chi-square test were used for data analysis.

**Results:** The majority of nurses (92.3%) had a low level of knowledge regarding health literacy and more than half of the participants (58.7%) had an acceptable level of experience.

**Conclusion:** Nurses' information about health literacy needs to be updated via continuous education to enhance their knowledge and practice regarding this aspect.

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## 1. Introduction

Health literacy defines persons' capacities to accessing, understanding, using health information, and maintaining health through effective self-management and collaborating with health care providers (Berkman et al., 2010; Liu et al., 2020). The scientific literature has confirmed the fact that low health literacy level is linked with poor health outcomes (Rademakers & Heijmans, 2018). Lower health literacy negatively impacts the efficiency of a wide-array of therapeutic interventions, particularly when providing care to vulnerable segments of population; such as senior citizens, patients with a single or multiple chronic diseases, and those who were less fortunate to get higher levels of education (Brooks et al., 2020; Rademakers & Heijmans, 2018).

Both in developed and developing countries, health literacy was found to be limited (Matthews, 2018; Seng et al., 2020). For example, two out of three Canadian adults, and nine out of ten senior persons stand in need of obtaining, understanding and acting on health-related information to make suitable and independent health decisions (Vamos et al., 2020). Correspondingly, in the United Arab Emirates (UAE), Matthews (2018) reported that approximately half of the study sample did not have the necessary health-related knowledge or skills to effectively steer the healthcare system or follow intricate directives from their health care providers. Despite the fact that sociopolitical, environmental, cultural, and professional factors are major variables in determining the level of target society's health literacy, it can be boosted by inclusive health-focused education at both persons and public levels (Huhta et al., 2018).

Many studies have confirmed that enhancing patients' knowledge, understanding, and preparedness for self-management are core pillars of nurses' educational responsibility toward their clients (Bergh et al., 2015). Nurses are the principal and the largest group of health care professionals. They are the front position of client care, spending a significant portion of their time with patients and members of their patient's families. This inclusive interaction offers exceptional opportunities for patient and family education to be provided (Al-Fayyadh & Mohammed, 2010; Grønning et al., 2017; Karimi Moonaghi et al., 2016). Thus, nurses must be armed with the required educational competencies to execute this pivotal health promotion role (Al-Fayyadh, 2020).

Nurses should be trained to appropriately engage with all patients, using health literacy strategies based on the prior expertise and education (Walker et al., 2019). According to the Academy of Medical-Surgical Nurses (as cited in Overbaugh, 2020), the medical-surgical nurses are in charge of organizing and providing nursing care across various health care settings covering all stages of illness. Such role can be challenging for nurses practicing in medical-surgical ward, considering their diverse tasks, scarce resources, limited care time, increasing client's health problem acuity. This justifies conducting this study, whereas no similar studies were conducted in Iraq or Middle East.

Both globally and locally, across all professional disciplines, at all planes, health care industry is becoming more complex (Kannampallil et al., 2011). Examples of such complexity are, however not limited to, strong competition, severe financial crises, increase demand and expectations of customers (Manion, 2009). Therefore, providing quality care to clients is becoming challenging. It is expected that all health care providers, particularly nurses, to be armed with all the essential competencies to effectively manage all the previous challenges. This would enable them to enhance their organization survival and optimize their client's wellness in such locally and globally rapidly changing environment. Nurses have an ethical, professional obligation to advocate the good of their clients in health and sickness.

According to Healthy People 2030, health literacy is transforming from the personal to organizational focus, which reflects a holistic emphasis of the concept (Office of Disease Prevention and Health Promotion, n.d.). Therefore, it is becoming mandatory for all the stakeholders, particularly nurses, to enhance their health literacy competencies aiming for providing quality care in a timely manner. Nurses in general, medical-surgical nurses in particular, are the frontline health care providers who are in charge of achieving improvement in patients' health conditions. Therefore, they must be well-trained and continuously educated on how to provide competent patient education to improve their health literacy (Loew, 2015). Success in achieving this goal, however cannot be reached, unless assessing medical-surgical nurse's health literacy-related knowledge and experience as a preliminary step. Therefore, this study was basically conducted to answer this question: What is the level of medical-surgical nurse's health literacy-related knowledge and experience? Answering the aforementioned research question would better inform the tailored on-service, educational intervention for medical-surgical nurses who may have low health literacy-related knowledge and experience.

This research endeavor was principally developed and conducted to fill the existed scientific literature gap both at the national and regional levels. We could not find enough evidence about "health literacy", "Knowledge" and "Experience" of "Medical-Surgical Nurses". Conducting this study was both justified and highly recommended. Therefore, this study aimed basically at assessing medical-surgical nurse's health literacy-related knowledge and experience.

## **2. Methods**

### *2.1 Research design*

A descriptive, cross-sectional study design was used to answer the current research questions regarding the knowledge and experience of nurses concerning health literacy.

### *2.2 Setting and participants*

The study targeted nurses who were practicing in medical-surgical wards in teaching hospitals in Baghdad, Iraq. All the official agreements to collect the data through direct interview with the nurses were issued. However, Covid-19 pandemic had imposed itself and prevented the data collection team from moving forward following the planned approach. Therefore, Google form was used to collect the data of the target setting and subjects. A

convenience sampling method was used to select the participants. The electronic form of the questionnaire was sent to nurses. Nurses who work in the medical and surgical units with at least one year of experience at the time of data collection were included in this study. Nurses who are graduated from a two academic years' program offered at technical institutes were also included in this study. A total of 155 male and female nurses participated as the study samples.

### *2.3 Measurement and data collection*

Nurses' knowledge and practice regarding patients' health literacy was assessed using "Health Literacy Knowledge and Experiences Survey-2" (HLKES-2) with the written permission from the authors (Walker et al., 2019) to translate and use the scale. The instrument is a total of 14 items that are divided into two domains: 10 items for the knowledge domain and 4 items for the experience domain (Walker et al., 2019). Since there is no previous studies or formal records that have determined the prevalence of health literacy in Iraq and to avoid bias results regarding nurses' knowledge, questions number one "low health literacy is most prevalent among which age group?" and question number three "What is the likelihood that a nurse will encounter a patient with low health literacy?" were moved from the original scale to be assessed in separated part after the demographics in the questionnaire. This step did not influence the validity of the score regarding the knowledge domain. Each question has three distractors and one correct answer; for example, question one "a patient with enough health literacy is able to", and nurses who selected the choice (c) "read, understand, and participate effectively in healthcare decisions" was given (1), and nurses who selected other distractors were give (0). The levels of knowledge domain were determined based on the total items mean scores, the mean scores ranged between 0-1. Accordingly, the levels are identified as follow:  $\leq 0.33$  "low level of knowledge"; 0.34-0.66 "acceptable level"; 0.67-1 "high level of knowledge". The experience domain is scored on four levels Likert scale (1=never, 2=sometimes, 3=most of the time, and 4=always). The total scores that nurses achieve range between 4 to 16. A score of 4-8 indicates low level of experience, 9-12 moderate level, and a score 13-16 indicates a higher level of experience.

The HLKES-2 was originally developed in English by Walker et al. (2019), and it was forward translated to Arabic by three independent bilingual content experts. The Arabic versions were translated back to English independently by the same content experts. The researchers chose the Arabic version that was closest to the original version after it was translated back to English. The content validity was measured through inviting a panel of nine experts in the specific field of the study to rate the level of items relevance. The calculated Content Validity Index (CVI) is 0.94, signifying that the tested tool measures what it intends to measure (Yusoff, 2019). Test-retest reliability was run using data from 40 nurses to measure the stability of the scale "the health literacy knowledge and experience of Iraqi nurses" over time. The time between first test and the second test was 10 days. Reliability was analyzed using test-retest reliability coefficients method. The result in the correlation between test 1 and test 2 showed the r-value of 0.86.

The questionnaire also included demographics data; age, gender, level of education, and years of experience. The data were collected by distributing the questionnaire through social media platforms including Facebook, Telegram, and WhatsApp. The link was sent to the participants, and 155 completed the survey in the proposed time.

### *2.4 Data analysis*

Data were analyzed using the Statistical Package for Social Sciences for statistical analysis (SPSS version 24). The sample characteristics, knowledge, and experience were described using descriptive statistics. Relationships between dependent and independent variables were explored using non-parametric test (Chi-square test). The significant level was set at 0.05.

### *2.5 Ethical considerations*

All nurses who completed the survey participated voluntarily. The cover letter of the instrument included information regarding study purpose(s) and the confidentiality of nurse' responses. Participants were also informed that survey is anonymous, and their responses and identity would be confidential, and would be use for the research purpose only. The Institutional Review Board (IRB) at the University of Baghdad, College of Nursing has reviewed the study

proposal and issued the required official agreement (Reference number: A-N-D-2020). Of equal importance, the research team had contacted the corresponding author of the article which contained HLKES-2, to seek permission to both translating the HLKES-2 into Arabic language and to use it to investigate health literacy-related knowledge and experience among nurses practicing in medical-surgical wards. All the official agreement to use the HLKES-2 was sent directly through e-mail to the research team.

### 3. Results

#### 3.1 Sociodemographic, clinical setting, curriculum, and other related characteristics of the participants

In Table 1, descriptive statistics of nurse' sociodemographic information represents that about 2/3 of the study subjects were male (69.6%).

**Table 1.** The sociodemographic, clinical setting, curriculum, and other related characteristics of the participants

Characteristics	f	%
Gender		
Male	108	69.7
Female	47	30.3
Age		
19 - 25 years old	59	38.1
26 - 32 years old	54	34.8
33 - 39 years old	28	18.1
40 and older	14	9.0
Education		
High School of Nursing	8	5.2
Diploma in Nursing	19	12.3
BScN	104	67.1
Post-Graduate	24	15.5
Years of Experience		
1-5	96	61.9
6-10	25	16.1
11-15	21	13.5
16 and more	13	8.4
Nurse-Patient Ratio		
1/5	92	59.4
1/10	38	24.5
1/15	13	8.4
1/20 and more	12	7.7
How Likely you face a client with low health literacy		
1 every 3 patients	27	17.4
1 every 6 patients	66	42.6
1 every 9 patients	39	25.2
1 every 12 patients	23	14.8
Focus times of health literacy in the curriculum		
Never	8	5.2
Sometimes	61	39.4
Most of the time	60	38.7
Always	26	16.8
Have you heard about health literacy concept?		
No	9	5.8
Yes	146	94.2
How you rate your knowledge about the concept		
I have no information	1	0.6
Low level	23	14.8
Moderate Level	68	43.9
Good level	63	40.6

### 3.2 Level of knowledge and experience regarding health literacy

The levels of knowledge and experience regarding health literacy are shown in Table 2. The results revealed that the majority of nurses (92.3%) had low level of knowledge regarding health literacy and about 58.7% had acceptable level of experience.

**Table 2.** Health literacy-related knowledge and experience levels (n=155)

Variables	Levels	f	%
Health-literacy related knowledge	Low level of knowledge	143	92.3
	Acceptable level of knowledge	12	7.7
	High level of knowledge	0	0
Health-literacy related experience	Low level of experience	43	27.7
	Acceptable level of experience	91	58.7
	High level of experience	21	13.5

In Tables 3, the Chi-Square test was run to determine the association between nurses' years of experience, focus time of health literacy in nursing curriculum, and nurse-patient ratio and nurses' knowledge and experience related to health literacy. Focus time of health literacy in nursing curriculum was the only variable that show statistically significant association with nurses' knowledge ( $X^2=11.030$ ,  $p=0.012$ ) and experience ( $X^2=14.015$ ,  $p=0.029$ ).

**Table 3.** Association between nurses' years of experience, focus time of health literacy in nursing curriculum, and nurse-patient ratio, and nurses' knowledge and experience (n=155)

Domain	Years of Experience			Focus Time			Nurse-Patient Ratio		
	$X^2$	df	p	$X^2$	df	p	$X^2$	df	p
Knowledge	2.379	3	0.497	11.030	3	0.012	4.113	3	0.249
Experience	9.906	6	0.129	14.015	6	0.029	6.047	6	0.418

## 4. Discussion

This study was aimed at assessing medical-surgical nurse's health literacy regarding their knowledge and experience. According to the results, about 92.3% of the participants had low knowledge regarding health literacy. In Iraq or any other country around the globe, knowledge about health literacy is crucial among medical-surgical nurses to provide high quality care to patients (Al-Jubouri & Abd Ali, 2021). Nesari et al. (2019) stated that nurses in Iran do not have adequate knowledge and experience about health literacy. Chang et al. (2020) conducted a study in Taiwan to explore nurses' knowledge regarding health literacy. They found that only 51% of their study sample had correct responses toward health literacy. In the United States, Kennard (2017) stated that nurses answered 62% of the knowledge questions regarding health literacy correctly. Cafiero (2013), in another study in the United States, mentioned that most of the nurses answered all the questions regarding knowledge of health literacy correctly. All these results indicate that nurses in Western countries have more knowledge regarding health literacy than Eastern countries. This can be related to the differences in nursing education, curricula, and licensure system in Western and Arab countries (Al-Jubouri & Abd Ali, 2021). Since there is no Arabic version of the HLKES-2 that assess nurses' health literacy, articles about health literacy in Arab countries were limited.

Regarding the nurses' experience toward health literacy, the results showed that more than half of the study sample had good experience. Despite the low knowledge of the study sample which represent 92.3%, they scored much better (58.7%) in their experience. This means that medical-surgical nurses in Iraq act based on their experience not based on their knowledge regarding health literacy. Chang et al. (2020) encountered almost similar results, as they found that 58.8% of nurses scored a good experience in health literacy.

Most of the nurses in this study mentioned that health literacy was a part in the curriculum in their undergraduate program. However, they scored low health literacy related to knowledge. This indicates that they forgot what they have learned, or they were not getting benefits from the course that was presented in the curriculum. Chang et al. (2020) and Nantsupawat et al. (2020)

declared that health literacy among nurses is significantly related to their education. Also, in some studies (Cafiero, 2013; Coleman, 2011; Coleman & Appy, 2012; Nantsupawat et al., 2020), nurses stated that health literacy was overlooked in their curricula. Although, this result is not similar to the current study results, both results highlighted the importance of focusing on health literacy in nursing curricula. Indeed, understanding health literacy during academic study course may improve nurses' knowledge regarding this concept.

The results of this study indicated that there is no significant relationship between nurses' years of experience and their levels of knowledge and experience regarding health literacy. This was surprising for the researchers as most of the study sample (78%) had less than 10 years of experience. This can be related to the communication and interaction between nurses and other health care providers. Nesari et al. (2019) declared that nurses who interact often with health care professionals had higher scores on knowledge regarding health literacy. On the other hand, Wittenberg et al. (2018) found that nurses with less than 10 years of experience are more comfortable with health literacy than nurses with more than 10 years of experience.

The results in this study showed a significant association between curriculum focus on health literacy and nurses' levels of knowledge and experience. Results of many studies (Ayaz-Alkaya & Terzi, 2019; Nesari et al., 2019; Wittenberg et al., 2018) support our findings. Focusing on health literacy in nursing curriculum can increase nurses' knowledge and experience because improving health literacy can start from integrating this concept into nursing curriculum (Ayaz-Alkaya & Terzi, 2019; Mosley & Taylor, 2017) or by assessing health literacy in a competence exam before graduation (Al-Jubouri & Abd Ali, 2021).

## **5. Implications and limitations**

This research endeavor could help other researchers conduct more studies in Arabic-speaking countries to assess nurse's health literacy-related knowledge and experience. On the other hand, integrating the concept of health literacy into the nursing curriculum can improve nursing students' health literacy and the result is future nurses with enhanced health literacy. It also will be helpful to determine the factors that are associated with health literacy-related knowledge deficit in the targeted health care settings. This would equip the health care policymakers with essential research-based facts that enables them to make informed decision to address any issues that are related to the health literacy among medical-surgical nurse.

This study has limitations. Limited access to the internet services was one of the major obstacles that have limited the participation rate. Of equal importance, a significant percentage of medical-surgical nurses were affected by the Covid-19 pandemic during data collection phase, which also limited the participation rate in the study. On the other hand, the convenience sampling may impact on generalization of results.

## **6. Conclusion**

This study showed that majority of nurses had a low level of knowledge regarding health literacy but with an acceptable level of experience. To enhance nurses' knowledge regarding health literacy, it is important to start from the curriculum by focusing on health literacy in the undergraduate program. This will anchor the concept of health literacy in nursing students' perceptions and will be reflected on their practice after graduation. During practicing the profession of nursing, it is also important to update nurses' information about health literacy via continuous education. This will help them to be in touch with health literacy and apply its basic pillars based on the scientific knowledge. Further research into health literacy with a larger and multi-country sample is needed to better understand the examined phenomena.

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## **Author contribution**

The principal author of this research paper (SAF) has envisioned the main research idea, designed the study proposal, executed and delegated research-related tasks to other research team. He also wrote the introduction section and participated in data collection, reviewing, and

editing the study for publication. The second author (MBAJ) has contributed in data collection, writing the discussion section, and editing the study for publication. The third author (HAH) has contributed in data collection, writing the methods and results sections, data analysis, and editing the study for publication. The fourth (SAJ) and the fifth (SMH) authors have contributed in data collection. All authors read and approved the final version of the manuscript.

### Conflict of interest

None to be declared.

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